



OPERATING AND DISPLAY ENCLOSURES



A Phoenix Mecano Company

ROSE Systemtechnik GmbH

The company was founded in 1969 and specializes in the development and production of high quality industrial enclosures, which are used in a variety of environmental conditions.

Phoenix Mecano AG / Switzerland is a global company.

The basis of our business success are systems from a wide range of high quality products, innovative design and first class customer service.

For more informations please visit our homepage

www.rose-pw.de www.rose-ex-enclosures.com























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Technical modifications reserve!



More enclosure systems for operating and display areas see Handheld enclosures or Stainless steel enclosure catalogues.

Applications





- Polyamide handheld enclosure for MCR, automation technology and data acquisition
- 2 sizes - 270 x 248 x 64 mm to 311 x 281 x 72 mm
- Large fitting area
- For installations and command devices mobile and stationary applicable
- Variable mounting depths

Included in delivery:

Double skinned enclosure with base and top, with fixing areas incl. seals and border profile, 3 cover flaps for interface garages, screws and fixing materials for front panel mounting.

Technical data

Material:

Enclosure: polyamide

Border profile: NBR, black

Colour:

RAL 7021, black grey

Ingress protection:

IP 65 to EN 60529

EMC:

optional

Surface resistance:

10¹² Ohm to IEC 60093

Flammability:

UL 94 V-2

Temperature range:

-20°C to +60°C

Limanda

Product range

Order No.	Type	Dimensions (mm) W x L x H	Weight (g)
27.03 03 00	Limanda I	311 x 281 x 72	1200
27.03 03 01	Limanda I EMC	311 x 281 x 72	1200
27.03 03 17	Limanda I für OP17	311 x 281 x 97	1500
27.03 02 00	Limanda II	270 x 248 x 64	800
27.03 02 01	Limanda II EMC	270 x 248 x 64	800

Accessories

	Bestell-Nr.
Limanda I aluminium front panel, natural anodized finish	27.03 03 80
Limanda I EMC front plate	27.03 03 90
Limanda II EMC front plate	27.03 02 90
Limanda II aluminium front panel, natural anodized finish	27.03 02 80
Limanda I intermediate frame	27.03 03 81
Limanda II intermediate frame	27.03 02 81
Limanda II mounting set for Siemens TP 170 / TP 070	27.03 02 82
Limanda I EMC intermediate frame	27.03 00 88
Limanda II EMC intermediate frame	27.03 02 88
Limanda I handle set without push button	27.03 00 83
Limanda holder	27.03 00 84
Limanda carrying strap	27.03 00 85
Limanda carrying strap comfort	27.03 00 92
Limanda I quiver	27.03 00 86
Limanda II table stand (set = 2 pcs.)	27.03 00 87
Limanda II quiver	27.03 00 89
Limanda I quiver with intermediate frame	27.03 00 90
Limanda II quiver with intermediate frame	27.03 00 91
Limanda I handle set with 3-step enabling switch (right-hand version)	27.03 00 71
Limanda I handle set with 3-step enabling switch (left-hand version)	27.03 00 72
Cable connection with bending protection M 16	08.10 01 16
Cable connection with bending protection M 20	08.10 01 20
Cable connection with bending protection M 25	08.10 01 25
Inclining adapter for mounting directly on wall or machine	50.02 00 01
Inclining adapter for mounting directly onto GT 48/2 tube	50.02 00 02
Inclining adapter for mounting directly onto GTK electronic tube	50.02 00 03
Inclining adapter for mounting directly onto GT 48/2 or GTK electronic	50.02 00 04
Inclining adapter for bracket on GT 48/2 tube	50.02 00 05
Inclining adapter for bracket on GTK electronic tube	50.02 00 06
Inclining adapter for bracket on wall or machine	50.02 00 07
Push button and switches see page 13 - 18	



Limanda enclosure systems enable installation of many manual operation panels.



Limanda I for OP17 - Supplied ready for installation of the Siemens OP17 Operator Panel without additional fitting materials.



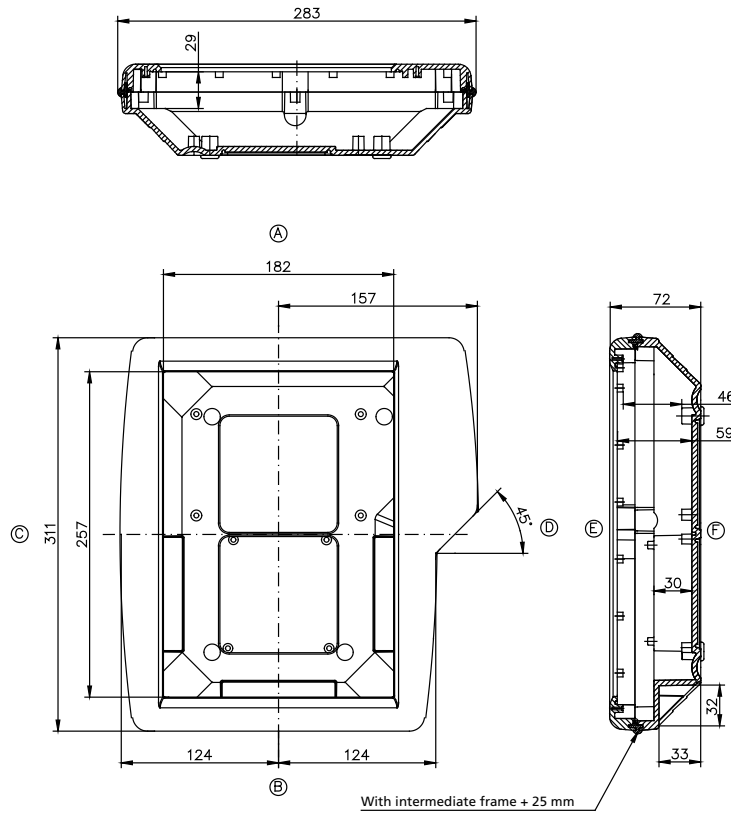
Limanda II with fitted command unit

Dimensions



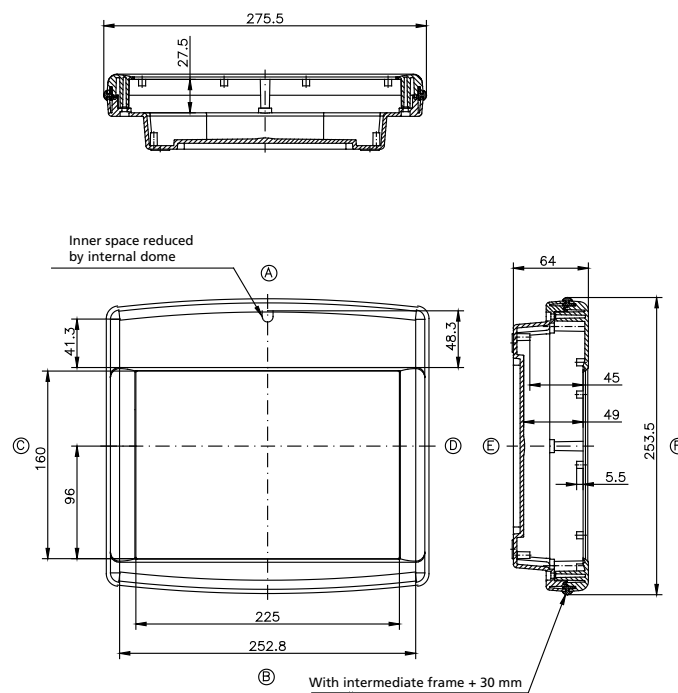
Limanda I

Order No. **27.03 03 00**



Limanda II

Order No. **27.03 02 00**



Limanda

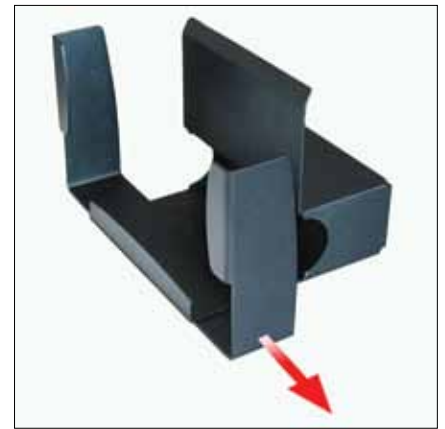
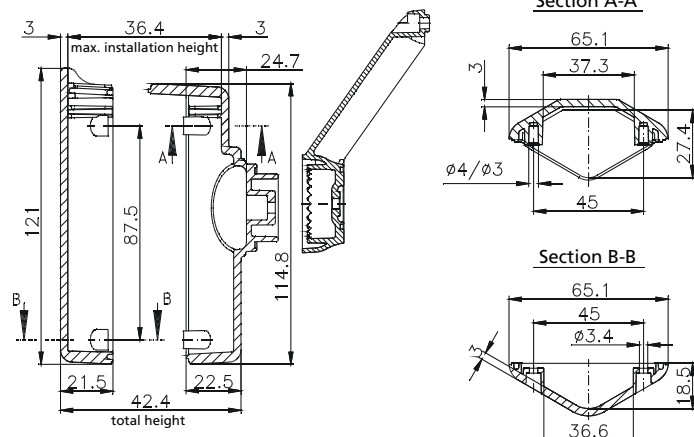
Accessories



Limanda I handle set without push button

For installation on all four rear corners of the enclosure. The handle incorporates a stepped engaging mechanism which allows it to be optimally adjusted for the operator during installation. IP 65 once assembled.

Order No. **27.03 00 83**



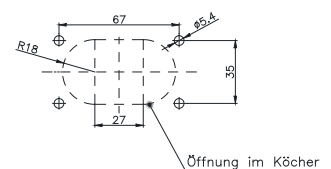
Limanda I handle set with 3-step enabling switch
(2-channel) for use in service, set up and programming operations.
Included in delivery: handle set with fixed enabling switch

Order No.	Type
27.03 00 71	right-hand version
27.03 00 72	left-hand version

Limanda quiver
Wall holder - adjustable in width and length, can be adapted to inclining adapter.
Material sheet steel.

Order No.	for version
27.03 00 86	Limanda I
27.03 00 89	Limanda II
27.03 00 90	Limanda I with intermediate frame
27.03 00 91	Limanda II with intermediate frame

Technical data see page 53 - 58



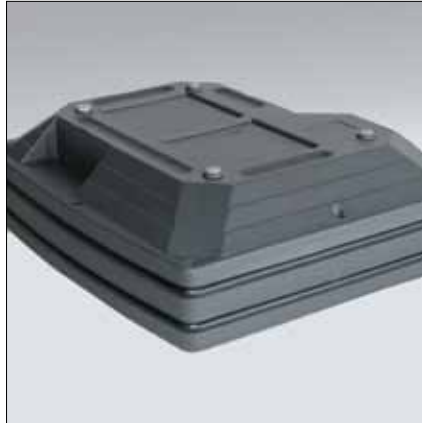
Accessories



Limanda holder

Enables rapid removal of the Limanda from the inclining adapter (for Limanda I and II). There is a gap of 19.5 mm between the Limanda and the holder for assembly purposes.

Order No. **27.03 00 84**



Limanda intermediate frame

Enable to increase the mounting depth.

Order No.	Depth	for version
27.03 03 81	25 mm	Limanda I
27.03 02 81	30 mm	Limanda II
27.03 00 88	25 mm	Limanda I EMC
27.03 02 88	30 mm	Limanda II EMC



Limanda carrying strap

Carrying strap in 2 versions: Standard and comfort: strengthened execution with shoulder pad (comfort)

Order No.	
27.03 00 85	Carrying strap
27.03 00 92	Carrying strap comfort



Inclining adapter

Order No.	Type	Weight (g)
50.02 00 01	for mounting directly to wall or machine	1286
50.02 00 02	for mounting directly to tube GT 48/2	986
50.02 00 03	for mounting directly to tube GTK electronic	1004
50.02 00 04	for mounting directly to GT 48/2 or GTK electronic	900

Technical data

Material	2.5 mm sheet steel
Bellow	PVC (T-50M), RAL 9005 (jet black)
Surface	black powdered
Temperature range	-40°C to +60°C
Stepped engaging mechanism	22,5°-steps



Cable connection with bending protection (no lock nut)

Order No.	Type
08.10 01 16	M 16 cable gland with bending protection
08.10 01 20	M 20 cable gland with bending protection
08.10 01 25	M 25 cable gland with bending protection

Technical data

Material	Polyamide
Moulded seal	NBR
Ingress protection	IP 68 - 5 bar
Temperature range	-20°C to +100°C
Colour	RAL 9005, jet black

Limanda

Accessories



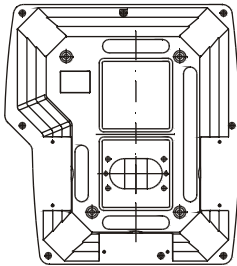
Limanda I inclining adapter for holder

Order No.	Type	Weight (g)
50.02 00 05	for mounting directly to GT 48/2 tube	776
50.02 00 06	for mounting directly to GTK electronic tube	804
50.02 00 07	for mounting directly to wall or machine	490

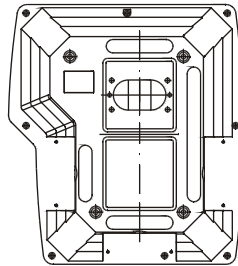
Technical data

Material	2.5 mm sheet steel (powdered black)
Knurled handles	reinforced thermoplastic
Temperature range	-40°C to +60°C

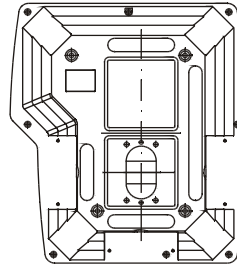
Type 1



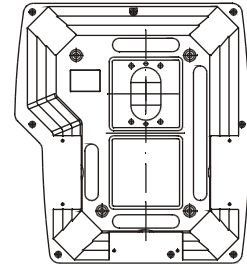
Type 2



Type 3

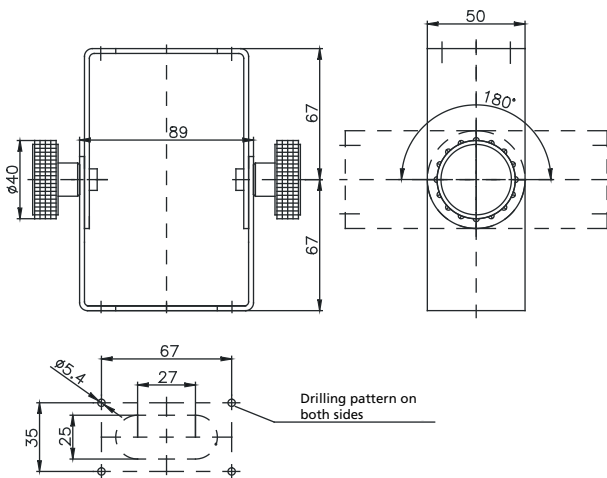


Type 4



Specific Limanda drilling pattern required!

Dimensions (wall mounted version)





For assembling of enclosures there is available a huge programme range of switches / push buttons:

- enabling switches
- emergency stop buttons
- accessories

Electro-mechanical components



2-step enabling switch (1NO), blue

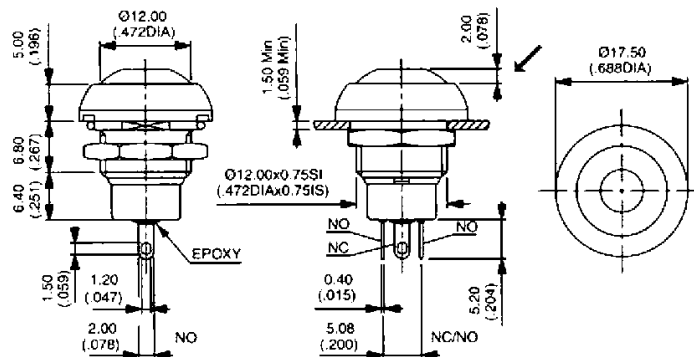
Order No. **83.50 00 10**

2-step enabling switch (1NC/1NO), blue

Order No. **83.50 00 09**

Technical data

Contact loading	48 V (AC), 500 mA 250 V (AC), 200 mA 50 V (DC), 200 mA
Ingress protection	IP 67 front side
Temperature range	-40°C to +125°C (no condensation)
Volume resistance	max. 50 mW (initial value)
Service life	≥ 5 x 10 ⁵ switchings

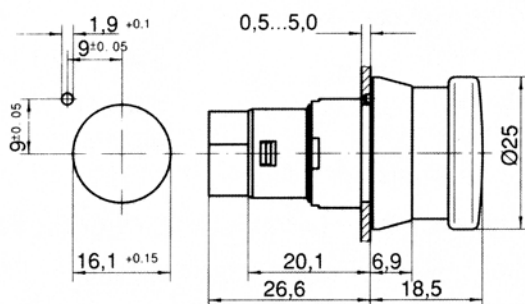


Emergency stop button (2NC), Ø 25mm, red

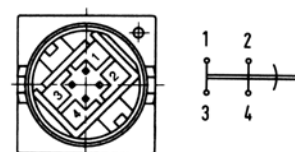
Order No. **83.50 00 02**

Technical data

Contact system and fitting	2 NC
Ingress protection	IP 65 front side
Temperature range	-25°C to +70°C (no condensation)
Connections	galvanized, suitable to 4-pole multipoint socket connector
Switching voltage	0,02 to 25 V AC/DC
Switching current	0,1 to 1 A
Volumne resistance	< 100 mW
Duration of bounce	< 10 ms
Service life	> 1,5 x 10 ⁴ switchings



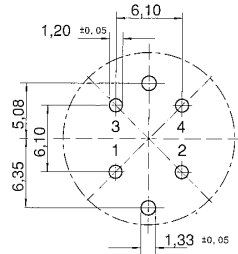
Connection diagram (view from down)





PCB plug-socket for emergency stop button, Ø 25 mm

Order No. **83.90 00 01**



Contact fitting area

NC 1: Pin 1 - blue
Pin 2 - black
NC 2: Pin 3 - blue
Pin 4 - black



Ribbon cable

10 cm with multipoint socket connector and strip, AMP 4-pole for emergency stop button Ø 25 mm

Order No. **83.90 00 02**

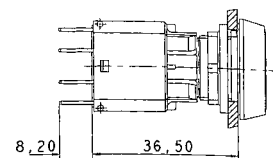
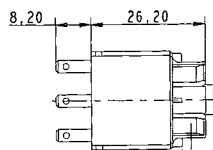
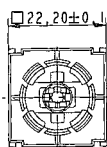
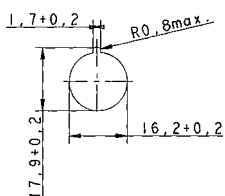


Emergency stop button with switch unit (2NC), Ø 28 mm, red

Order No. **83.50 00 03**

Technical data

Contact system and fitting	self cleaning bridge forming contact (Ag), 2 NC
Ingress protection	IP 65 front side
Temperature range	-25°C to +70°C (no condensation)
Connections	Flat plug 2.8 x 0.8
Switching voltage	AC: 250 V / DC: 24 V (further voltage on request)
Switching current	AC: 1,5 A / DC: 2,0 A
Volume resistance	max. 20 mW (initial value)
Service life	≥ 3 x 10 ⁴ switchings



Electro-mechanical components



Emergency stop button (3NC/1NO), Ø 29 mm, red

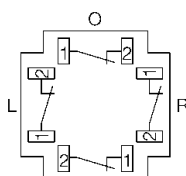
Order No. **83.50 00 04**

Stop push button (3NC/1NO), Ø 29 mm, grey

Order No. **83. 50 00 05**

Technical data

Contact system and fitting	obligation-led contacts (3 NC / 1 NO)
Ingress protection	IP 65 front side
Temperature range	-25°C to +60°C (no condensation)
Connections	soldered connection
Switching voltage (direct contact)	AC(12): 250 V / DC(12): 30 V
Switching current (direct contact)	AC(12): 3,0 A / DC(12): 2,0 A
Switching voltage (indirect contact)	AC(12): 250 V / DC(12): 30 V
Switching current (indirect contact)	AC(12): 0,6 A / DC(12): 2,0 A
Volume resistance	max. 50 mW (initial value)
Service life	≥ 1 x 10 ⁵ switchings



Direct contact

1 NC: connections right

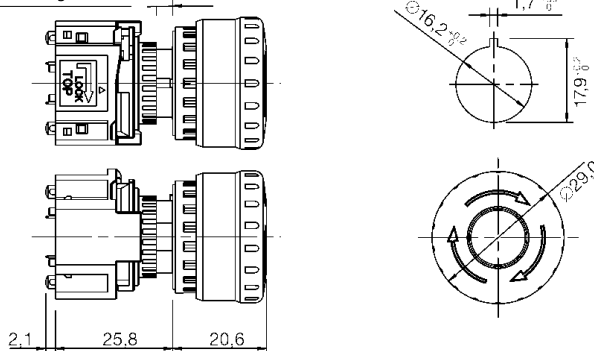
2 NC: connections right and left

3 NC: connections right, left and above

Emergency stop label for command element,
16 mm, yellow, 4 speeches, 40 x 40 mm

Order No. **83.90 00 07**

front panel strength 0.5 to 3.7



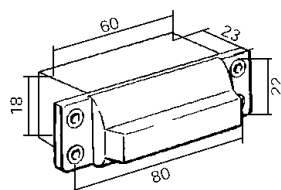
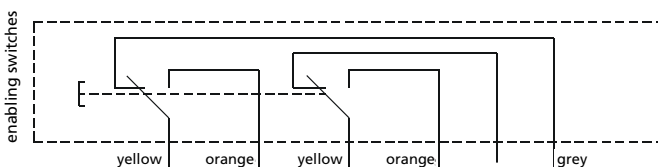
3-step enabling switch (2 changer), 80 x 22, black

Order No. **83.50 00 06**

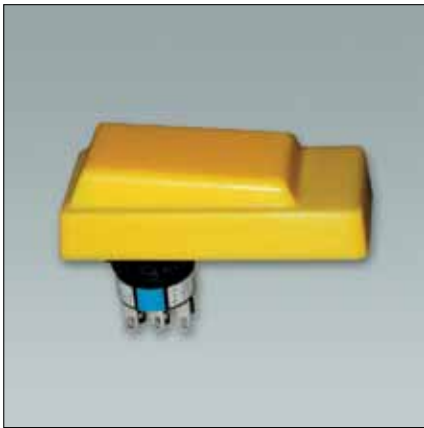
Technical data

Contact system and fitting	2 main switches (changer)
Contact rating	30 V DC, max. 0,5 A
Ingress protection	IP 65
Temperature range	0°C to +50°C
Fullfilled standards	89/392/EWG; IEC 204-1: EN 60204/DIN VDE 0113; DIN VDE 0110: EN292

Connection diagram



evaluator	JSBR4	S13	S14	S24	S23	X2	X3
	JSBT4	S13	S14	S24	S23		
	RT6	S13	S14	S24	S23		
	RT7	S13	S14	S24	S23		
	JSBRT8	A1	S14	S24	A2		
	JSBRT11	S13	S14	S24	S23		
	JSHT2	S13	S14	S24	S23		

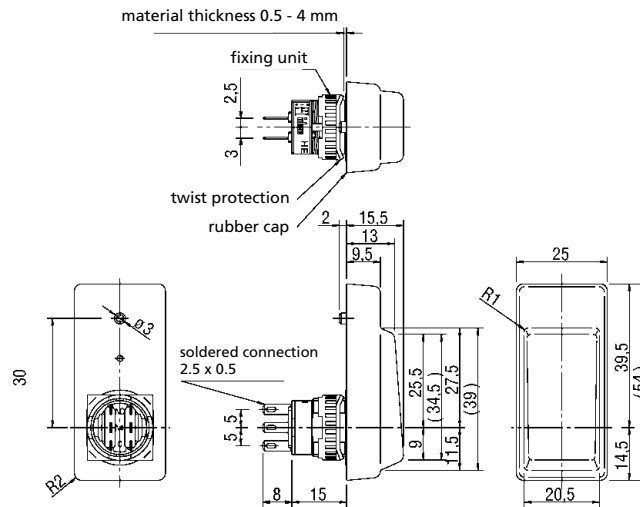
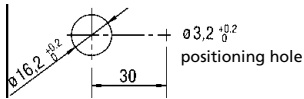


3-step enabling switch (2 changers), 55 x 25, yellow

Order No. **83.50 00 07**

Technical data

Contact system and fitting	2 main switches (changer)
Ingress protection	IP 65 (with rubber cap)
Temperature range	-25°C to +60°C (no condensation)
Connections	soldered condensation
Switching voltage	AC(12): 125 V / DC(12): 30 V
Switching current	AC(12): 1,0 A / DC(12): 1,0 A
Volume resistance	max. 50 mW (initial value)
Service life	≥ 1 x 10 ⁵ switchings

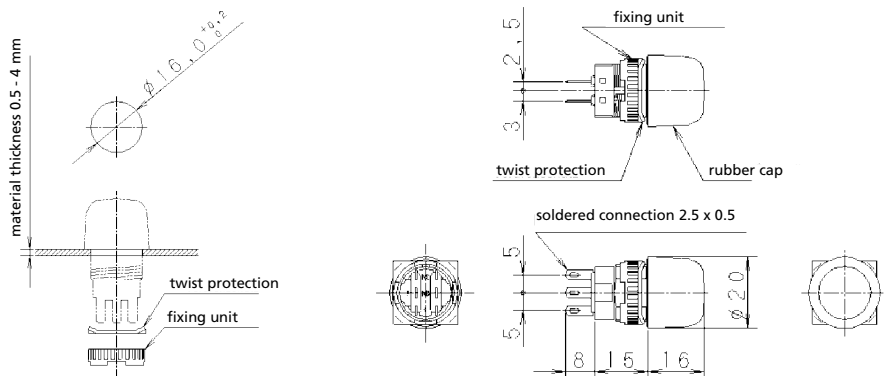


3-step enabling switch (2 changer), Ø 20 mm, yellow

Order No. **83.50 00 08**

Technical data

Contact system and fitting	2 main switches (changer)
Ingress protection	IP 65 (with rubber cap)
Temperature range	-10°C to +60°C (no condensation)
Connections	soldered connection
Switch voltage	AC(12): 125 V / DC(12): 30 V
Switch current	AC(12): 0,5 A / DC(12): 1,0 A
Volume resistance	max. 50 mW (initial value)
Service life	≥ 1 x 10 ⁵ switchings



Electro-mechanical components

Product allocation

Product range	2-step enabling switch (1NO), blue	2-step enabling switch (1NC/1NO), blue	Emergency stop button (2NC), Ø 25 mm, red	PCB-plug-socket for emergency stop button Ø 25 mm	Ribbon cable 10 cm with multipoint socket connector and strip, AMP 4-pole for emergency stop button Ø 25 mm	Emergency stop button with switch unit block (2NC), Ø 28 mm, red
Order No.	83.50 00 10	83.50 00 09	83.50 00 02	83.90 00 01	83.90 00 02	83.50 00 03
Limanda I handle set	x	x				
Limanda I	x	x	x	x	x	x
Limanda II	x	x	x	x	x	x

Product range	Emergency stop button (3NC/1NO), Ø 29 mm, red	Stop push button (3NC/1NO), Ø 29 mm, grey	3-step enabling switch (2 changer), 80 x 22, black	3-step enabling switch (2 changer), 55 x 25, yellow	3-step enabling switch (2 changer), Ø 20 mm, yellow
Order No.	83.50 00 04	83.50 00 05	83.50 00 06	83.50 00 07	83.50 00 08
Limanda I handle set			x		x
Limanda I	x	x	x		x
Limanda II	x	x	x	x	x



- Aluminium profile compact commander in 2 widths
- Applications: control equipment and display systems
- Integrated cooling system
- External system groove
- Variable profile lengths

Included in delivery

Profile enclosure body, on rear side door or screwed wall; fastening elements for front panel; front panel order separately

Technical data

Material:

enclosure profile: DIN EN 573 EN AW-ALMgSi
enclosure lid: DIN EN 1706 EN AC-AISI 12 (Fe)

Ingress protection:

IP 65 to EN 60529

Painting:

powder coating

Colour:

enclosure body and enclosure lid:
RAL 7035, light grey

multi function profile:
RAL 9005, jet black

Temperature range:

-30°C to +65°C

Product range

Type	Order No.	Order No. front plate	Weight (g)
CT 110-350-S	20.80 10 10	20.80 91 01	7000
CT 110-520-S	20.80 10 20	20.80 91 02	8500
CT 110-SL-S	20.80 10 99	20.80 91 98	-
CT 110-350-S-GT	20.80 11 10	20.80 91 01	7000
CT 110-520-S-GT	20.80 11 20	20.80 91 02	8500
CT 110-SL-S-GT	20.80 11 99	20.80 91 98	-
CT 145-350-S	20.80 40 10	20.80 91 03	9600
CT 145-520-S	20.80 40 20	20.80 91 04	11400
CT 145-SL-S	20.80 40 99	20.80 91 99	-
CT 145-350-S-GT	20.80 42 10	20.80 91 03	9600
CT 145-520-S-GT	20.80 42 20	20.80 91 04	11400
CT 145-SL-S-GT	20.80 42 99	20.80 91 99	-

SL = special length

Accessories

Type	Order No.
Wall holder - CT	20.80 90 01
Handle set 350 (length 350 mm)	20.80 90 02
Handle set 500 (length 500 mm)	20.80 90 03
Handle set SL	20.80 90 99
Cover plates 80 for CT 110 (4 pcs.)	20.80 90 04
Cover plates 120 for CT 145 (4 pcs.)	20.80 90 05
NoVoTronic-adapter P80	20.80 90 06
NoVoTronic-adapter P100	20.80.90 07
NoVoTronic-adapter P160	20.80 90 08
Ventilator 60 for CT 110 (1 piece)	83.90 00 04
Ventilator 92 for CT 145 (1 piece)	83.90 00 05
Mounting angle with screws and spring nuts M5 (set 4 pcs.)	10.03 31 01
Spring nuts M5 (set 8 pcs.) for internal mounting	10.03 60 01

Switches and push button on request



Suspension adaptation

for adaptation of ROSE suspension systems

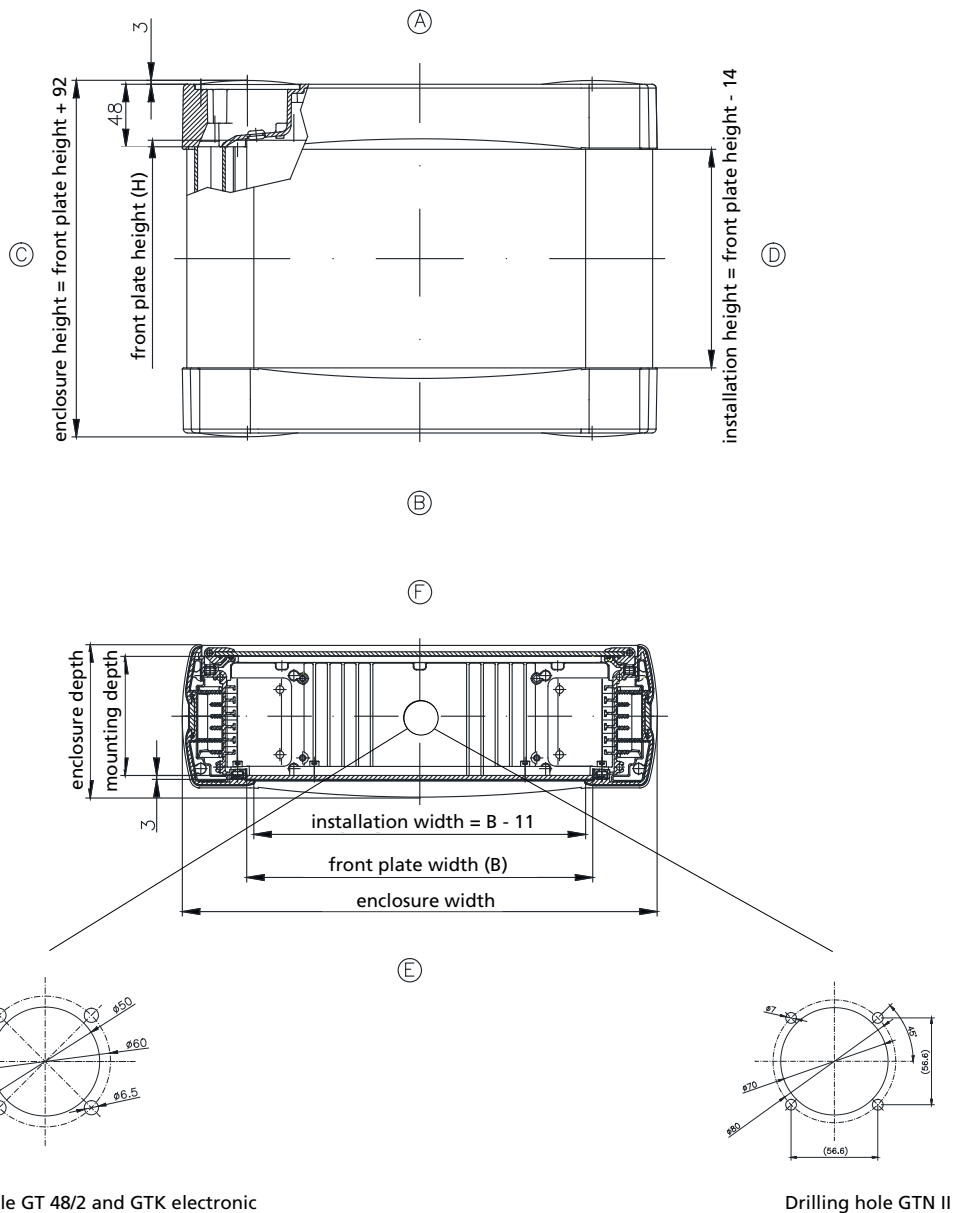
- GT 48 and GTK electronic for ComTronic 110
- GTN II for ComTronic 145
- other machining by version "without coupling hole" available

Typ	GT 48/2	GTK electronic	GTN II	without coupling hole
CT110-350-S				X
CT110-520-S				X
CT110-SL-S				X
CT110-350-S-GT	X	X		
CT110-520-S-GT	X	X		
CT110-SL-S-GT	X	X		
CT145-350-S				X
CT145-520-S				X
CT145-SL-S				X
CT145-350-S-GT			X	
CT145-520-S-GT			X	
CT145-SL-S-GT			X	

Dimensions

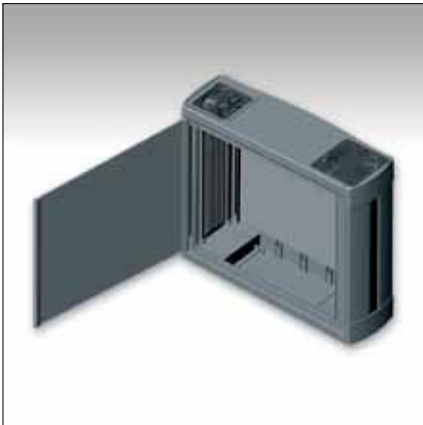
Type	Order No.	Front plate W x H in mm	Installation W x H in mm	Enclosure W x H in mm	Mounting depth	Enclosure depth
CT 110-350-S	20.80 10 10	266 x 350	255 x 336	365 x 442	91	118
CT 110-350-S-GT	20.80 11 10	266 x 350	255 x 336	365 x 442	91	118
CT 110-520-S	20.80 10 20	266 x 520	255 x 506	365 x 612	91	118
CT 110-520-S-GT	20.80 11 20	266 x 520	255 x 506	365 x 612	91	118
CT 110-SL-S	20.80 10 99	266 x SL	255 x SL	365 x SL	91	118
CT 110-SL-S-GT	20.80 11 99	266 x SL	255 x SL	365 x SL	91	118
CT 145-350-S	20.80 40 10	351 x 350	340 x 336	453 x 442	127	153
CT 145-350-S-GT	20.80 42 10	351 x 350	340 x 336	453 x 442	127	153
CT 145-520-S	20.80 40 20	351 x 520	340 x 506	453 x 612	127	153
CT 145-520-S-GT	20.80 42 20	351 x 520	340 x 506	453 x 612	127	153
CT 145-SL-S	20.80 40 99	351 x SL	340 x SL	453 x SL	127	153
CT 145-SL-S-GT	20.80 42 99	351 x SL	340 x SL	453 x SL	127	153

SL = special length



ComTronic

Rear wall mounting



- 1. Door with fast lock system**
- Standard version
 - Hinge side is fixed by pin screw with blind plugs
 - Lock side is provided only by pin screws



- 2. Door with turn bolt fastener**
- Option available
 - Hinge side is fixed by pin screw with blind plugs
 - Lock side is provided with two turn bolt fasteners



- 3. Rear wall completely closed**
- Optional available
 - Rear wall fixed by screws

Accessories



Wall holder - CT
Swivelling wall fixing unit

Order No. **20.80 90 01**



Ventilator
Option available for solving heat problems
To obtain an optimal cooling effect, 2 ventilators are recommended

Order No.	
83.90 00 04	Ventilator 60 for ComTronic 110 (1 pc.)
83.90 00 05	Ventilator 92 for ComTronic 145 (1 pc.)



NoVoTronic adapter
Combination element at ComTronic

Order No.	for
20.80 90 06	NoVoTronic adapter P80
20.80 90 07	NoVoTronic adapter P100
20.80 90 08	NoVoTronic adapter P160

Company _____
 Contact _____
 Address _____
 Telephone _____
 Fax _____
 E-Mail _____

Customer No. _____
 Piece _____
 Date _____

Dimensions operating enclosures

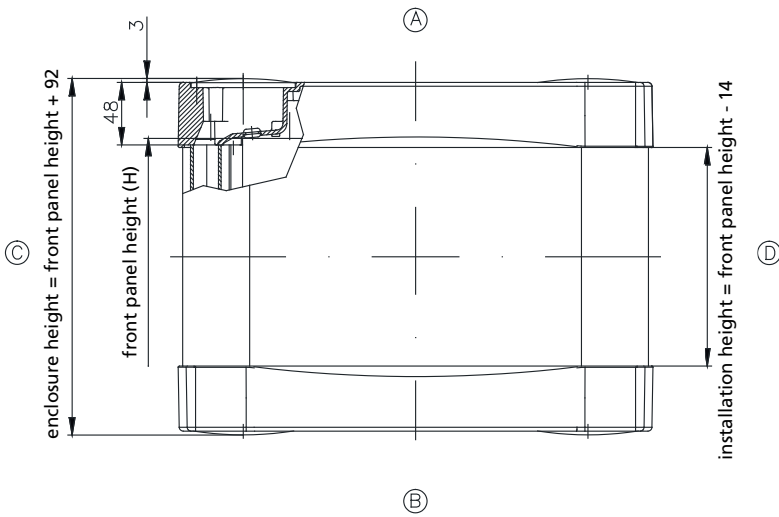
ComTronic 110

for front panel 266 x 350 mm (W x H) for front panel 266 x 520 mm (W x H) for front panel 266 x special length mm (W x H)

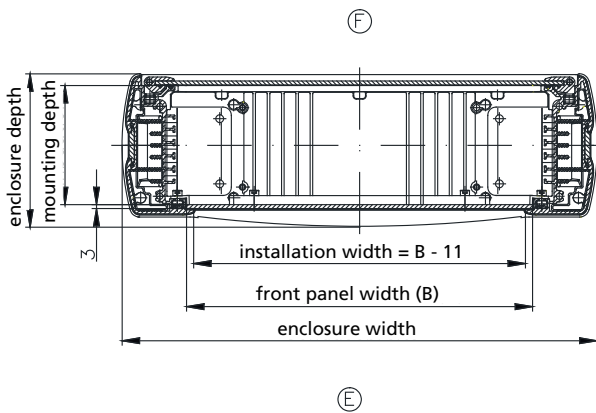
ComTronic 145

for front panel 351 x 350 mm (W x H) for front panel 351 x 520 mm (W x H) for front panel 351 x special length mm (W x H)

front panel dimension special length H (mm) _____ (high)



	110	145
Mounting depth:	91	127
Enclosure depth:	118	153
Installation width:	255	340



Front panel mounted: yes no

Modified acc. to drawing no.: _____

or specify manufacturer / control type _____

Accessory to inquiry / order

Company: _____

Rear wall

- With fast lock system (standard)
- With turn bolt fastener

Hinged side _____ (standard side D)

Hinged side _____ (standard side D)

Square 6 mm (standard)

Triangular 6,5 mm

Slot 1,5 mm

Screwed

Rear wall machining acc. drawing no. _____

Colour

Standard: light grey, RAL 7035

Special colour (please specify RAL colour single):

Profile RAL _____

Lid RAL _____

Slot-in strip RAL _____ (standard: black)

Suspension

without

GTK electronic or GT 48/2

Side _____ (standard side A by ComTronic 110)

GTS

Side _____ (standard side A by ComTronic 110)

GTN II

Side _____ (standard side A by ComTronic 110)

Moterm

other _____ Drawing no. _____ Side _____

Total weight of mountings ca. _____ kg

Handle set

Side C and D

Special colour RAL _____ (standard: black)

Order No.: 20.80 90 02; 20.80 90 03; 20.80 90 99

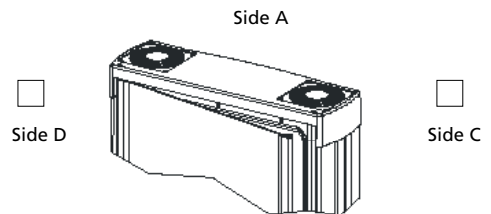
Special length _____ mm

Ventilator (1 pcs.)

Standard 2 pcs.

Side _____ (standard: side A)

divergent by inset of only one ventilator



Order No.: 83.90 00 04; 83.90 00 05

Cover elements (4 pcs.)

(or hygienic areas) attention: none optimal cooling effect!

Order No.: 20.80 90 04; 20.80 90 05

NoVoTronic adapter

Side _____ (standard: side D)

Order No.: 20.80 90 06; 20.80 90 07; 20.80 90 08

Wall holder-CT

Side _____ (standard: Side C)

Order No.: 20.80 90 01

Other machining / special versions

acc. drawing no.: _____



- Small control enclosure in aluminium diecast with protective bumper bars
- Robust aluminium diecast enclosure body with front panel
- Transparent cover and handle set (optional)

Technical data

Material:

DIN EN 1706 EN AC-AISI 12 (Fe)

Ingress protection:

IP 65 to EN 60529

(with transparent cover IP 54)

Impact resistance:

7 Joule to EN 60079-0 (enclosure body)

Painting:

Powder coating

Colour:

Body: RAL 7038, agate grey

Front frame: RAL 7043, traffic grey B

Special colour on request

Temperature range:

with PU-(polyurethane) seal: -40°C to +90°C

with VMQ-(silicone) seal: -60°C to +130°C

with CR-seal: -40°C to +100°C

Transparent cover: -10°C to +50°C





Included in delivery:

Enclosure body with front frame and fastening screws (2 or 4 pcs.).

Please order front panel separately

Commander 1

Product range

Type	Dimensions W x L x H (mm)	Enclosure without front panel	Enclosure drilled for attachment of handle, without front panel	Weight (g)	1 set single handle for side A + B	1 set single handle for side C + D	Handling frame for side A + B	Handling frame for side C + D
13.05	230 x 100 x 128	13.05 00 00		2170				
13.07	260 x 160 x 108	13.07 00 00		2450				
13.08	360 x 160 x 108	13.08 00 00		2730				
13.09	560 x 160 x 108	13.09 00 00		5390				
13.10	230 x 200 x 128	13.10 00 00	13.10 10 00	3100	13.34 00 01	13.34 00 01		13.34 10 01
13.11	230 x 200 x 198	13.11 00 00	13.11 10 00	4495	13.34 00 01	13.34 00 01		13.34 10 01
13.12	230 x 330 x 128	13.12 00 00	13.12 10 00	4280	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01
13.13	230 x 330 x 198	13.13 00 00	13.13 10 00	6000	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01
13.14	230 x 400 x 128	13.14 00 00	13.14 10 00	5305	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01
13.15	230 x 400 x 242	13.15 00 00	13.15 10 00	6840	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01
13.16	230 x 600 x 128	13.16 00 00	13.16 10 00	6550	13.34 00 05	13.34 00 01	13.34 16 02	13.34 16 01
13.17	230 x 280 x 130	13.17 00 00	13.17 10 00	4000	13.34 00 02	13.34 00 01		
13.20	310 x 400 x 128	13.20 00 00	13.20 10 00	5200	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01
13.21	310 x 400 x 198	13.21 00 00	13.21 10 00	8215	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01
13.22	310 x 600 x 128	13.22 00 00	13.22 10 00	9720	13.34 00 05	13.34 00 02	13.34 22 02	13.34 22 01
13.23	310 x 600 x 198	13.23 00 00	13.23 10 00	10300	13.34 00 05	13.34 00 02	13.34 22 02	13.34 22 01
13.24	310 x 400 x 244	13.24 00 00	13.24 10 00	8700	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01
13.25	310 x 400 x 158	13.25 00 00	13.25 10 00	7085	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01

Accessories

Type	Front plate	Mounting plate	Transparent cover with knurled lock	Transparent cover with lock	DIN rail TS 35/7,5	Silicone seal
13.05	10.01 30 05	10.01 10 14			10.06 14 29	10.05 10 15
13.07	10.01 30 07	10.01 10 11			10.06 14 24	10.05 13 07
13.08	10.01 30 08	10.01 10 12			10.06 14 25	10.05 13 08
13.09	10.01 30 09	10.01 10 13			10.06 14 26	10.05 13 09
13.10	10.01 30 10	10.01 10 15	13.33 10 10	13.33 10 20	10.06 14 30	10.05 13 10
13.11	10.01 30 10	10.01 10 15	13.33 10 10	13.33 10 20	10.06 14 30	10.05 13 10
13.12	10.01 30 12	10.01 10 17	13.33 12 10	13.33 12 20	10.06 14 32	10.05 13 12
13.13	10.01 30 12	10.01 10 17	13.33 12 10	13.33 12 20	10.06 14 32	10.05 13 12
13.14	10.01 30 14	10.01 10 18	13.33 14 10	13.33 14 20	10.06 14 27	10.05 13 14
13.15	10.01 30 14	10.01 10 18	13.33 14 10	13.33 14 20	10.06 14 27	10.05 13 14
13.16	10.01 30 16	10.01 10 19			10.06 14 28	10.05 13 16
13.17	10.01 30 17	10.01 10 16			10.06 14 31	10.05 13 17
13.20	10.01 30 20	10.01 10 20	13.33 20 10	13.33 20 20	10.06 14 27	10.05 13 20
13.21	10.01 30 20	10.01 10 20	13.33 20 10	13.33 20 20	10.06 14 27	10.05 13 20
13.22	10.01 30 22	10.01 10 21	13.33 22 10	13.33 22 20	10.06 14 28	10.05 13 22
13.23	10.01 30 22	10.01 10 21	13.33 22 10	13.33 22 20	10.06 14 28	10.05 13 22
13.24	10.01 30 20	10.01 10 20	13.33 20 10	13.33 20 20	10.06 14 27	10.05 13 20
13.25	10.01 30 20	10.01 10 20	13.33 20 10	13.33 20 20	10.06 14 27	10.05 13 20

Other accessories

- 10.02 70 43** External hinges unmounted
- 10.02 20 01** Internal hinges mounted

Coupling hole

for type	GT 48/2 GTK electronic	GTS	GT 50/2	GT 60/2 GTN II	GT 80/2
13.05	•				
13.07	•				
13.08	•				
13.09	•				
13.10	•	•	•		
13.11	•	•	•	•	•
13.12	•	•	•		
13.13	•	•	•	•	•
13.14	•	•	•		
13.15	•	•	•	•	•
13.16	•	•	•		
13.17	•	•	•		
13.20	•	•	•		
13.21	•	•	•	•	•
13.22	•	•	•		
13.23	•	•	•	•	•
13.24	•	•	•	•	•
13.25	•	•	•	•	•

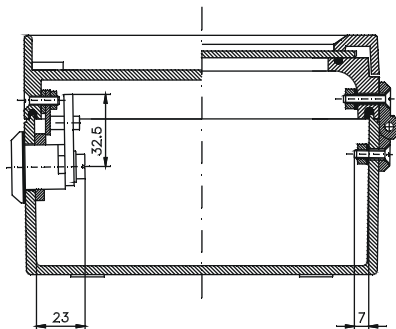
Accessories

Turn bolt lock

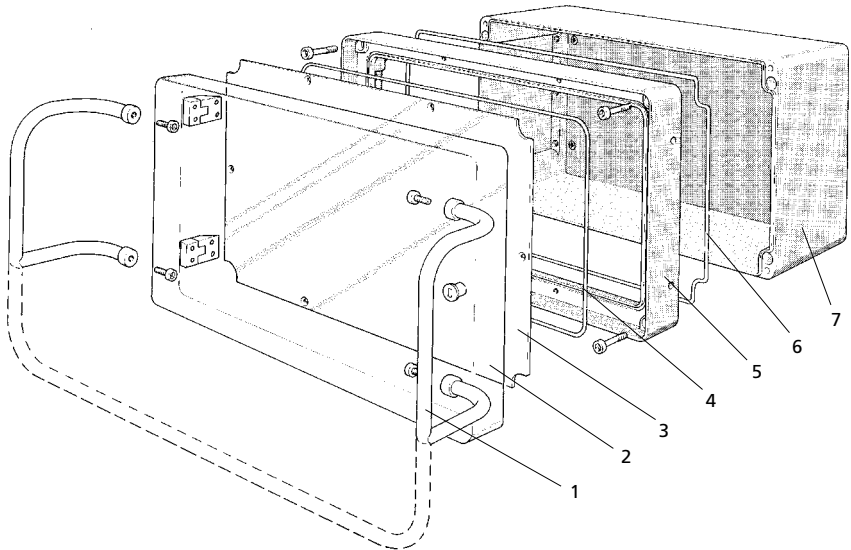
Order No.	Lock type
10.12 04 07	Square 7 mm
10.12 04 08	Square 8 mm
10.12 04 09	Triangular 7 mm
10.12 04 10	Triangular 8 mm
10.12 04 11	Daimler Benz
10.12 04 12	Double ward
10.12 04 13	Knob with lock

Please specify hinge side

Caution:
For use with turn bolt lock with external hinges: silicone seal in the lower section and frame



Construction



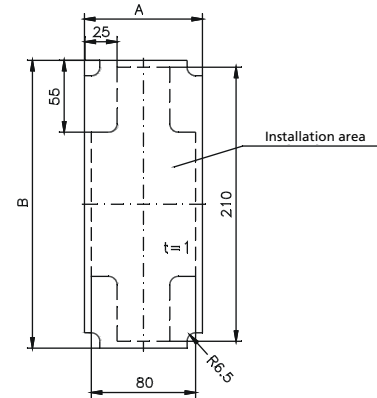
- 1. Handling frame
- 2. Transparent cover
- 3. Front panel
- 4. Front panel seal
- 5. Front frame
- 6. Frame seal
- 7. Enclosure body

Commander 1

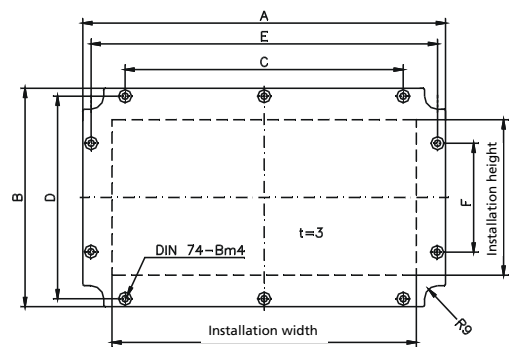
Accessories

Front plates

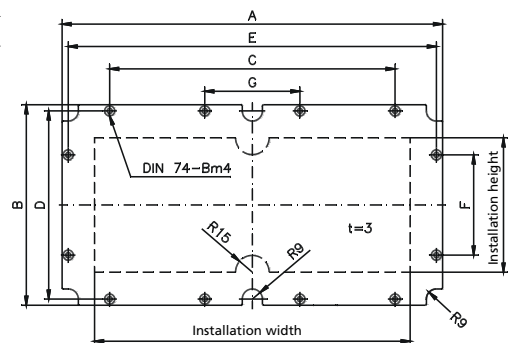
Type	Order No.	A	B	Installation width	Installation height
13.05	10.01 30 05	90,5	220,5	80	210



Type	Order No.	A	B	C	D	E	F	Installation width	Installation height
13.07	10.01 30 07	251	151	205	140	240	-	220	120
13.08	10.01 30 08	351	151	305	140	340	-	320	120
13.10	10.01 30 10	192,5	223	-	210	179	-	154	184
13.11	10.01 30 10	192,5	223	-	210	179	-	154	184
13.12	10.01 30 12	320,5	220,5	140	207	307	-	284	184
13.13	10.01 30 12	320,5	220,5	140	207	307	-	284	184
13.14	10.01 30 14	389,5	219	140	207	377	-	354	184
13.15	10.01 30 14	389,5	219	140	207	377	-	354	184
13.17	10.01 30 17	272	222	-	208	258	-	234	184
13.20	10.01 30 20	390,5	300,5	300	287	377	150	354	264
13.21	10.01 30 20	390,5	300,5	300	287	377	150	354	264
13.24	10.01 30 20	390,5	300,5	300	287	377	150	354	264
13.25	10.01 30 20	390,5	300,5	300	287	377	150	354	264







Type	Order No.	A	B	C	D	E	F	G	Installation width	Installation height
13.09	10.01 30 09	551	151	505	140	540	-	175	516	120
13.16	10.01 30 16	590,5	220,5	450	207	577	-	150	554	184
13.22	10.01 30 22	590,5	300,5	450	287	577	150	150	554	264
13.23	10.01 30 22	590,5	300,5	450	287	577	150	150	554	264



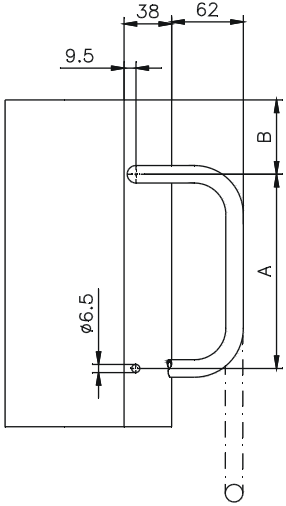
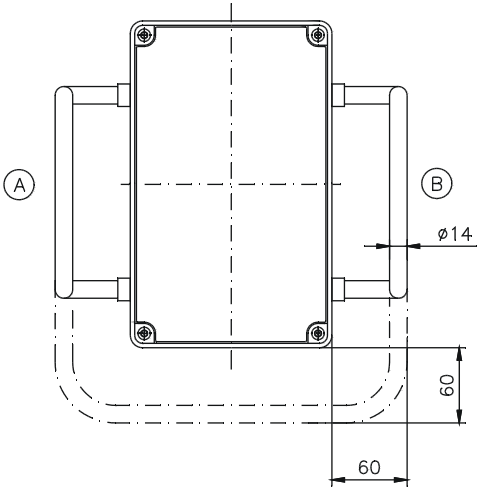
Accessories



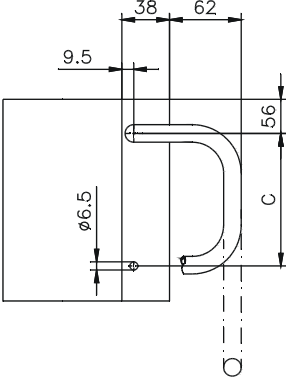
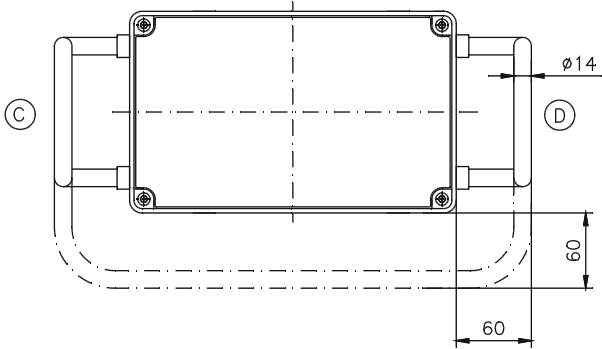
Handles

Type					A	B	C
13.10	13.34 00 01	13.34 00 01		13.34 10 01	127	36,5	127
13.11	13.34 00 01	13.34 00 01		13.34 10 01	127	36,5	127
13.12	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01	228	45	127
13.13	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01	228	45	127
13.14	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01	263	64	127
13.15	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01	263	64	127
13.16	13.34 00 05	13.34 00 01	13.34 16 02	13.34 16 01	450	64	127
13.17	13.34 00 02	13.34 00 01			209	36,5	127
13.20	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209
13.21	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209
13.22	13.34 00 05	13.34 00 02	13.34 22 02	13.34 22 01	450	64	209
13.23	13.34 00 05	13.34 00 02	13.34 22 02	13.34 22 01	450	64	209
13.24	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209
13.25	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209

Handle mounting A/B



Handle mounting C/D



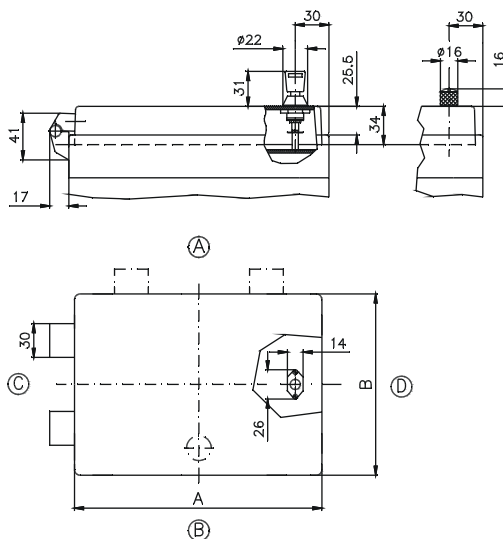
Commander 1

Accessories



Transparent cover

Type	Transparent cover with knurled lock	Transparent cover with lock	Transparent cover-dimensions	
			A	B
13.10	13.33 10 10	13.33 10 20	190	220
13.11	13.33 10 10	13.33 10 20	190	220
13.12	13.33 12 10	13.33 12 20	320	220
13.13	13.33 12 10	13.33 12 20	320	220
13.14	13.33 14 10	13.33 14 20	390	220
13.15	13.33 14 10	13.33 14 20	390	220
13.20	13.33 20 10	13.33 20 20	390	300
13.21	13.33 20 10	13.33 20 20	390	300
13.22	13.33 22 10	13.33 22 20	590	300
13.23	13.33 22 10	13.33 22 20	590	300
13.24	13.33 20 10	13.33 20 20	390	300
13.25	13.33 20 10	13.33 20 20	390	300



External hinge
Aluminium diecast hinges,
swivelling range approx. 150°

Order No. **10.02 70 43**

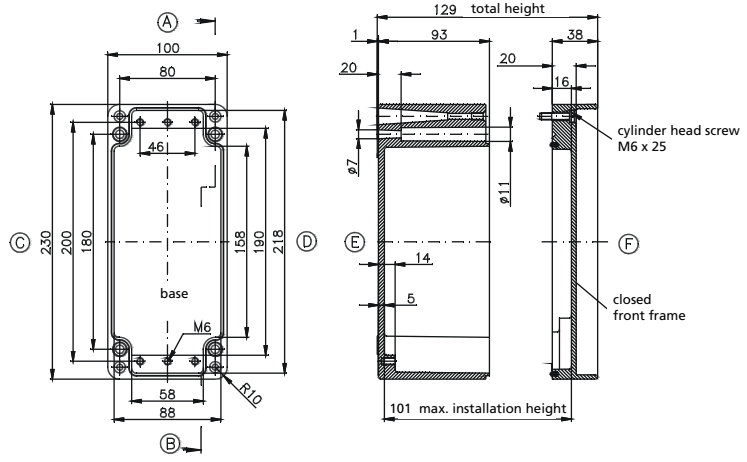


Internal hinges,
stainless steel,
swivelling range approx. 95°

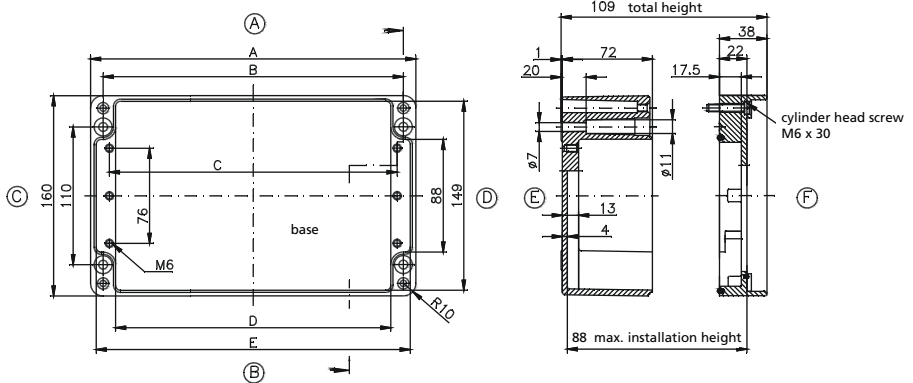
Order No. **10.02 20 01**

Dimensions

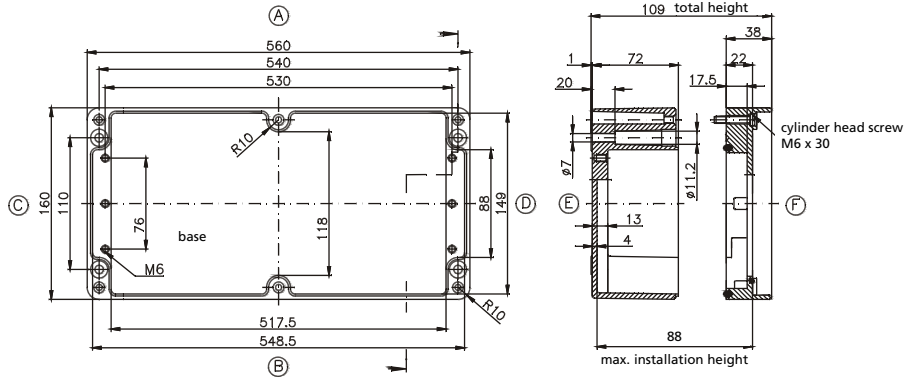
Order No.
13.05 00 00



Order No.	A	B	C	D	E
13.07 00 00	260	240	230	217,5	248,5
13.08 00 00	360	340	330	317,5	348,5



Order No.
13.09 00 00

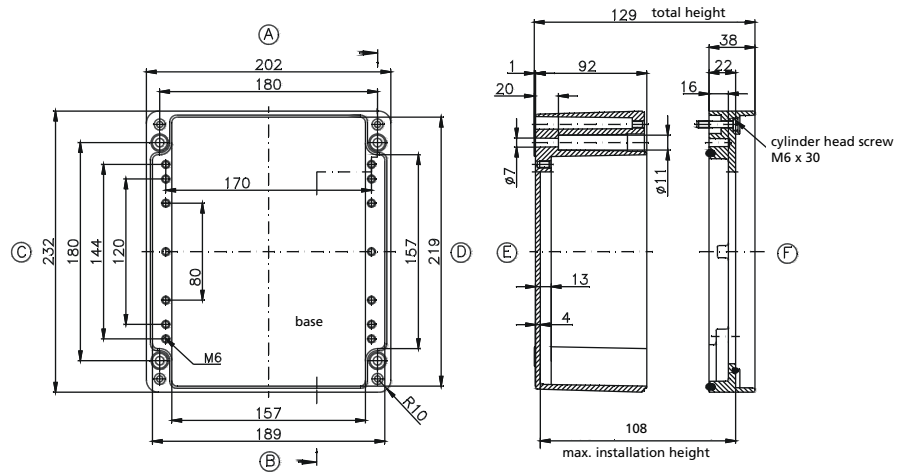


Commander 1

Dimensions

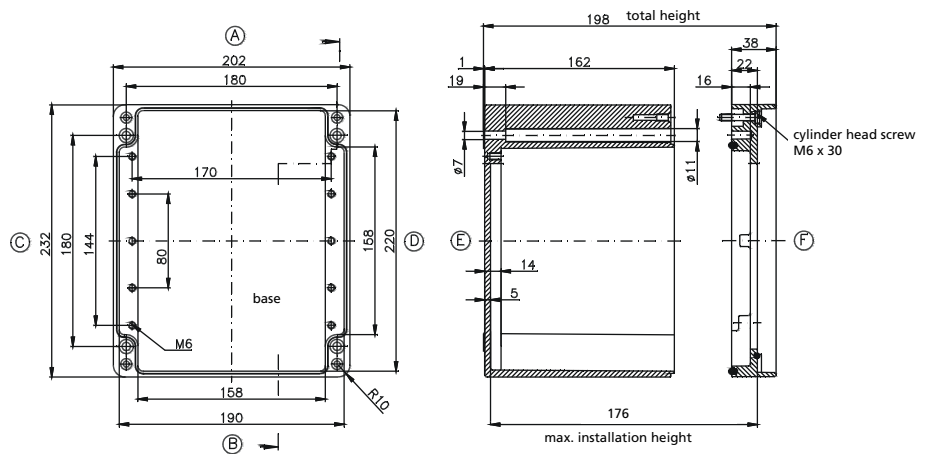
Order No.

13.10 00 00



Order No.

13.11 00 00

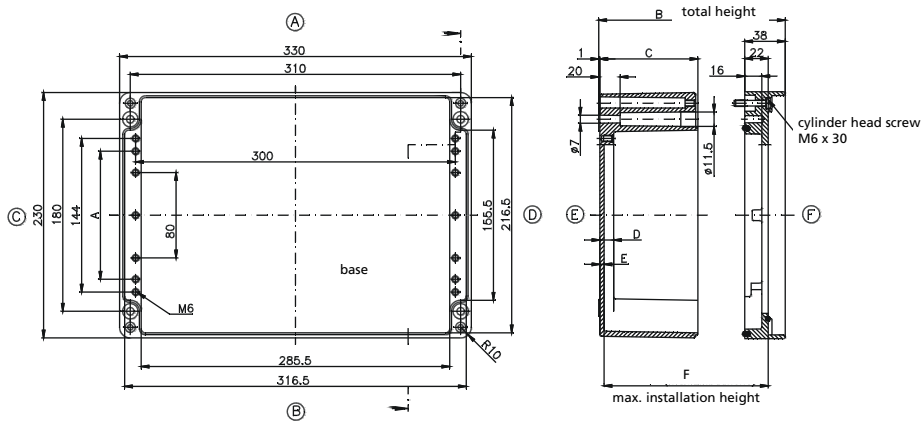


Order No.

13.12 00 00

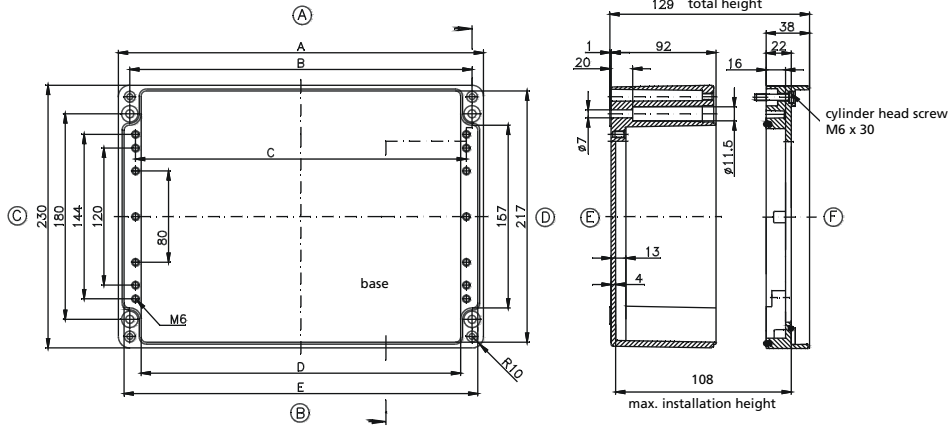
Order No.	A	B	C	D	E	F
13.12 00 00	120	129	92	13	4	112
13.13 00 00	-	199	163	15	6	176

13.13 00 00

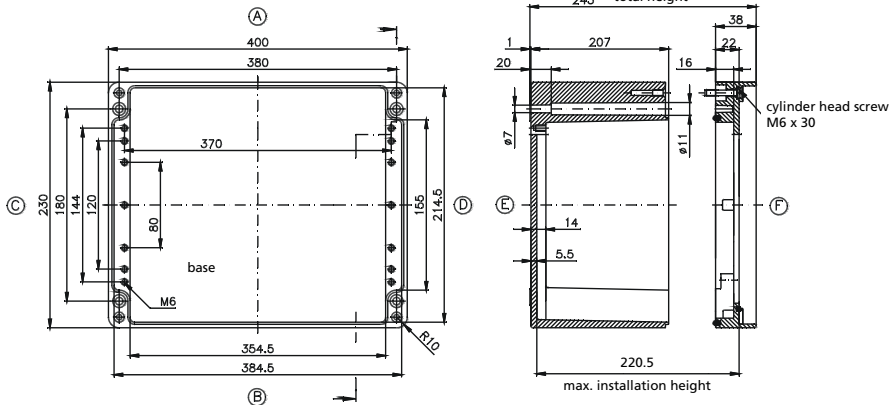


Dimensions

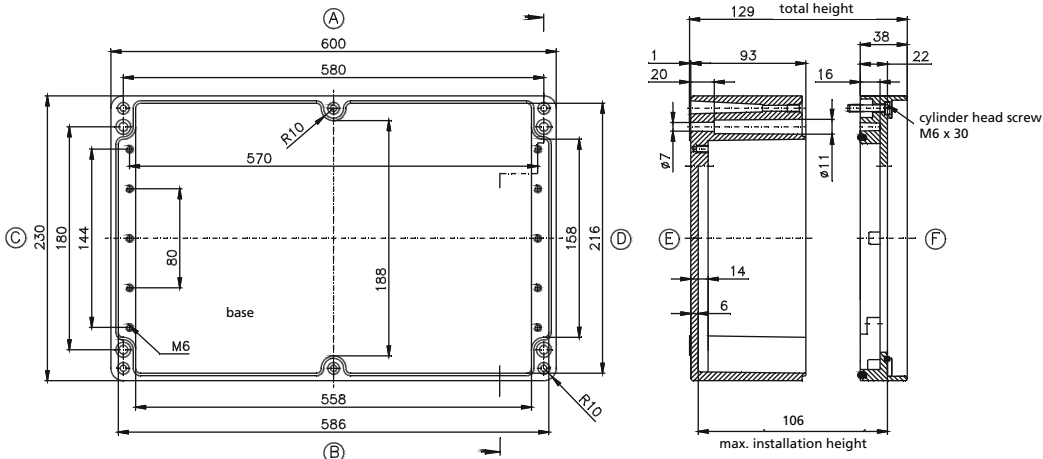
Order No.	A	B	C	D	E
13.14 00 00	400	380	370	357	387
13.17 00 00	280	260	250	237	268



Order No.
13.15 00 00



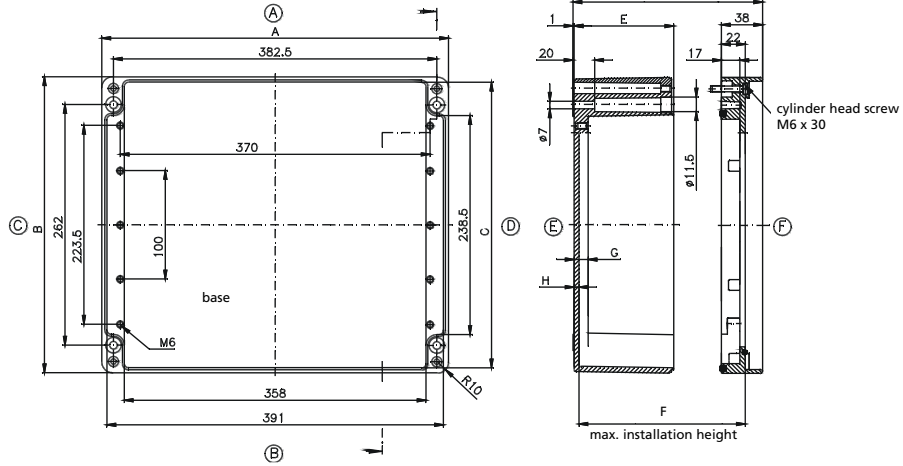
Order No.
13.16 00 00



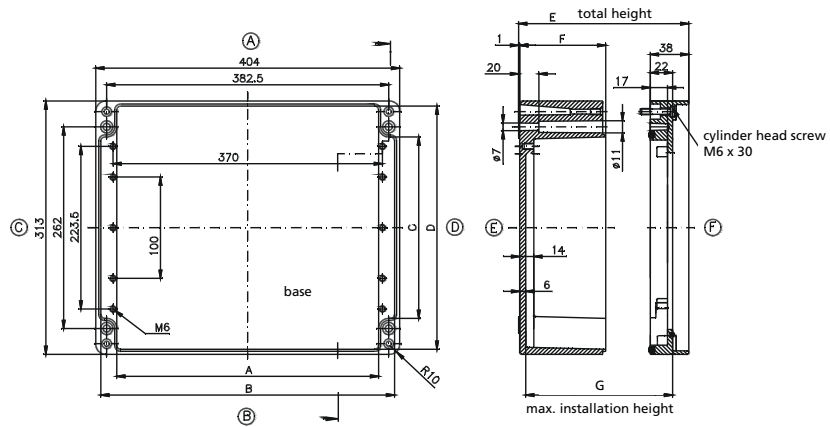
Commander 1

Abmessungen

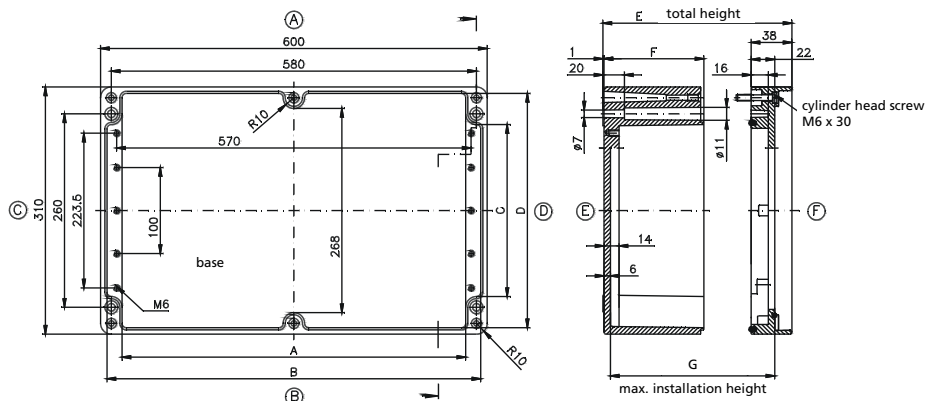
Order No.	A	B	C	D	E	F	G	H
13.20 00 00	404	313	301	129	92	107,5	13	4,5
13.25 00 00	403	312	296,5	159	123	136	14	6



Order No.	A	B	C	D	E	F	G
13.21 00 00	358,5	390	238	299	199	163	176
13.24 00 00	360,5	388,5	240	297,5	245	209	222



Order No.	A	B	C	D	E	F	G
13.22 00 00	558	586	238	296	129	93	106
13.23 00 00	556	584	236	294	199	163	176





- Small control enclosure in aluminium with front frame for front panels and keypads
- Robust aluminium diecast enclosure body
- Handle set (optional)

Included in delivery:

Enclosure body with two-part front frame, enclosure and fastening screws (2 or 4 pcs.). Please order front panel separately

Technical data

Material:

DIN EN 1706 EN AC-AISI 12 (Fe)

Ingress protection:

IP 65 to EN 60529

Impact resistance:

7 Joule to EN 60079-0

Painting:

Powder coating

Colour:

Enclosure body: RAL 7038, agate grey

Frame, top/base:
RAL 7043, traffic grey B

Special colour on request

Temperature range:





with PU-(polyurethane) seal: -40°C to +90°C

with VMQ-(silicone) seal: -60°C to +130°C

with CR-seal: -40°C to +100°C

Commander 1F

Product range

Type	Dimensions W x L x H (mm)	Enclosure without front panel	Enclosure drilled for attachment of handle, without front panel	Weight (g)	1 set single handle for side A + B	1set single handle for side C + D	Handling frame for side A + B	Handling frame for side A + B
								
13.07	260 x 160 x 108	13.07 05 00		3000				
13.08	360 x 160 x 108	13.08 05 00		3581				
13.10	230 x 200 x 128	13.10 05 00	13.10 15 00	3900	13.34 00 01	13.34 00 01		13.34 10 01
13.10	230 x 200 x 153	13.10 05 10	13.10 15 10	3610	13.34 00 01	13.34 00 01		13.34 10 01
13.11	230 x 200 x 198	13.11 05 00	13.11 15 00	4470	13.34 00 01	13.34 00 01		13.34 10 01
13.12	230 x 330 x 128	13.12 05 00	13.12 15 00	4300	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01
13.12	230 x 330 x 153	13.12 05 10	13.12 15 10	4685	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01
13.13	230 x 330 x 198	13.13 05 00	13.13 15 00	7500	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01
13.14	230 x 400 x 128	13.14 05 00	13.14 15 00	4580	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01
13.15	230 x 400 x 242	13.15 05 00	13.15 15 00	7230	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01
13.17	230 x 280 x 130	13.17 05 00	13.17 15 00	4200	13.34 00 02	13.34 00 01		
13.20	310 x 400 x 128	13.20 05 00	13.20 15 00	6700	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01
13.21	310 x 400 x 198	13.21 05 00	13.21 15 00	9280	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01
13.25	310 x 400 x 158	13.25 05 00	13.25 15 00	7085	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01

Accessories

Type	Front plate	Mounting plate	DIN rail TS 35/7,5	Silicone seal
13.07	10.01 32 07	10.01 10 11	10.06 14 24	10.05 13 07
13.08	10.01 32 08	10.01 10 12	10.06 14 25	10.05 13 08
13.10	10.01 32 10	10.01 10 15	10.06 14 30	10.05 13 10
13.10	10.01 32 10	10.01 10 15	10.06 14 30	10.05 13 10
13.11	10.01 32 10	10.01 10 15	10.06 14 30	10.05 13 10
13.12	10.01 32 12	10.01 10 17	10.06 14 32	10.05 13 12
13.12	10.01 32 12	10.01 10 17	10.06 14 32	10.05 13 12
13.13	10.01 32 12	10.01 10 17	10.06 14 32	10.05 13 12
13.14	10.01 32 14	10.01 10 18	10.06 14 27	10.05 13 14
13.15	10.01 32 14	10.01 10 18	10.06 14 27	10.05 13 14
13.17	10.01 32 17	10.01 10 16	10.06 14 31	10.05 13 17
13.20	10.01 32 20	10.01 10 20	10.06 14 27	10.05 13 20
13.21	10.01 32 20	10.01 10 20	10.06 14 27	10.05 13 20
13.25	10.01 32 20	10.01 10 20	10.06 14 27	10.05 13 20

Other accessories

- 10.02 70 43** External hinges unmounted
- 10.02 20 01** Internal hinges mounted (only for type 13.07 to 13.15)

Coupling holes

for type	GTK electronic GT 48/2	GTS	GT 50/2	GT 50/2	GT 60/2 GTN II	GT 80/2
13.07 05 00	•	•				
13.08 05 00	•	•				
13.10 05 00	•	•	•	•		
13.10 05 10	•	•	•	•		
13.11 05 00	•	•	•	•	•	•
13.12 05 00	•	•	•	•		
13.12 05 10	•	•	•	•		
13.13 05 00	•	•	•	•	•	•
13.14 05 00	•	•	•	•		
13.15 05 00	•	•	•	•	•	•
13.17 05 00	•	•	•	•		
13.20 05 00	•	•	•	•		
13.21 05 00	•	•	•	•	•	•
13.25 05 00	•	•	•	•	•	•

Accessories

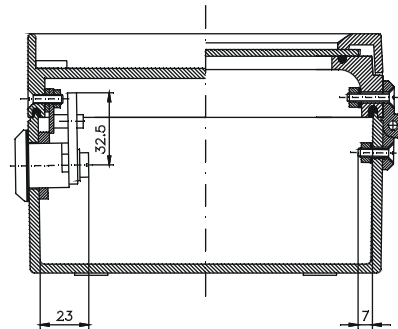
Turn bolt lock

Order No.	Lock type
10.12 04 07	Square 7 mm
10.12 04 08	Square 8 mm
10.12 04 09	Triangular 7 mm
10.12 04 10	Triangular 8 mm
10.12 04 11	Daimler Benz
10.12 04 12	Double ward
10.12 04 13	Knob with lock

Please specify hinge side

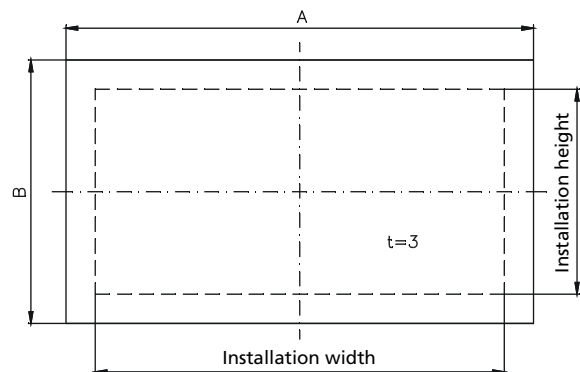
Caution:

For use with turn bolt lock with external hinges:
silicone seal in the lower section and frame.



Front plates

Type	Order No.	A	B	Installation width	Installation height
13.07F	10.01 32 07	230	130	215	115
13.08F	10.01 32 08	330	130	315	115
13.10F	10.01 32 10	170	200	155	185
13.11F	10.01 32 10	170	200	155	185
13.12F	10.01 32 12	300	200	285	185
13.13F	10.01 32 12	300	200	285	185
13.14F	10.01 32 14	370	200	355	185
13.15F	10.01 32 14	370	200	355	185
13.17F	10.01 32 17	251	201	235	185
13.20F	10.01 32 20	375	284	359	268
13.21F	10.01 32 20	375	284	359	268
13.25F	10.01 32 20	375	284	359	268







Commander 1F

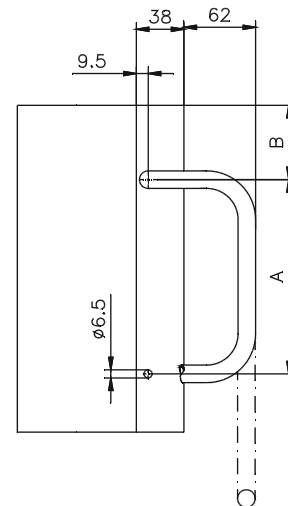
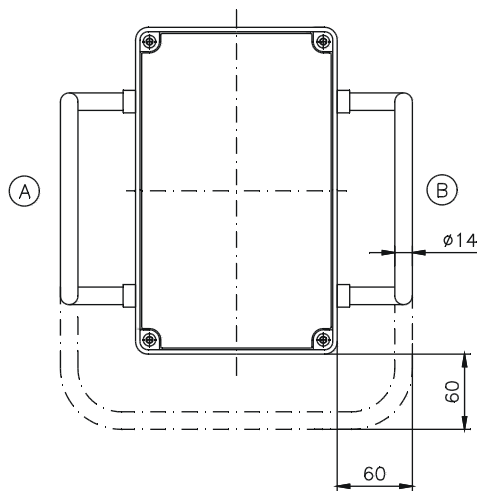
Accessories



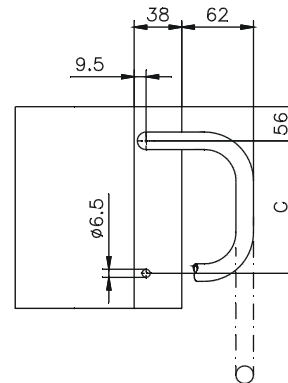
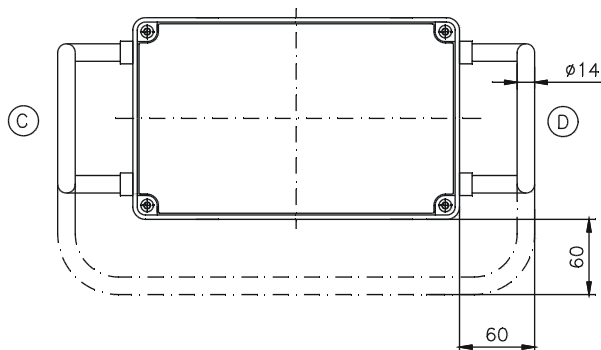
Handles

Type					A	B	C
13.10F	13.34 00 01	13.34 00 01		13.34 10 01	127	36,5	127
13.11F	13.34 00 01	13.34 00 01		13.34 10 01	127	36,5	127
13.12F	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01	228	45	127
13.13F	13.34 00 03	13.34 00 01	13.34 12 02	13.34 12 01	228	45	127
13.14F	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01	263	64	127
13.15F	13.34 00 04	13.34 00 01	13.34 14 02	13.34 14 01	263	64	127
13.17F	13.34 00 02	13.34 00 01			209	36,5	127
13.20F	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209
13.21F	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209
13.25F	13.34 00 04	13.34 00 02	13.34 20 02	13.34 20 01	263	64	209

Handle mounting A/B



Handle mounting C/D



Accessories



External hinge
Aluminium-diecast hinges, swivelling range approx. 150°

Order No.: **10.02 70 43**



Internal hinge (only for type 13.07 to 13.15)
stainless steel, swivelling range approx. 95°

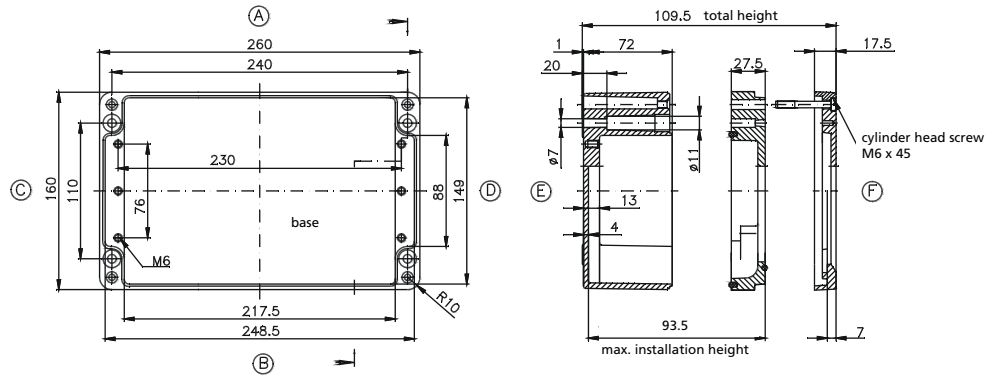
Order No.: **10.02 20 01**

Commander 1F

Dimensions

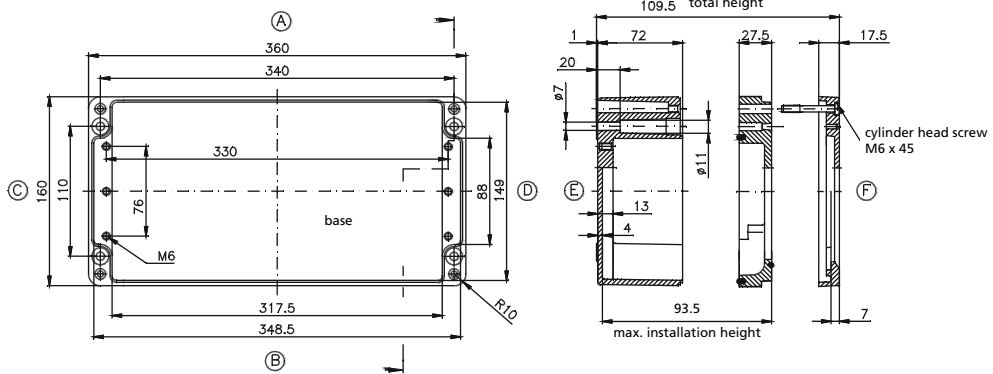
Order No.

13.07 05 00



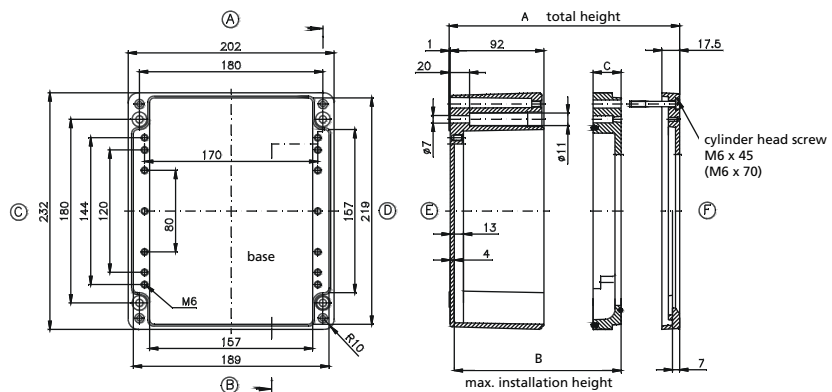
Order No.

13.08 05 00



Order No.

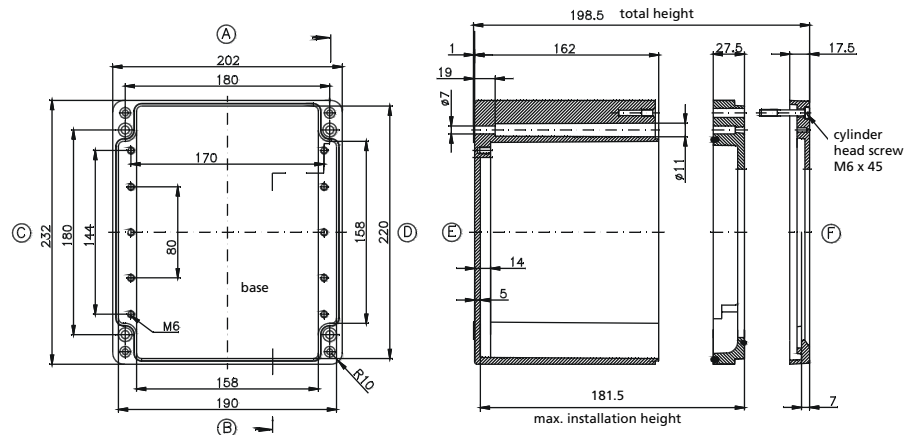
Order No.	A	B	C
13.10 05 00	129,5	113,5	27,5
13.10 05 10	153	137	51



Dimensions

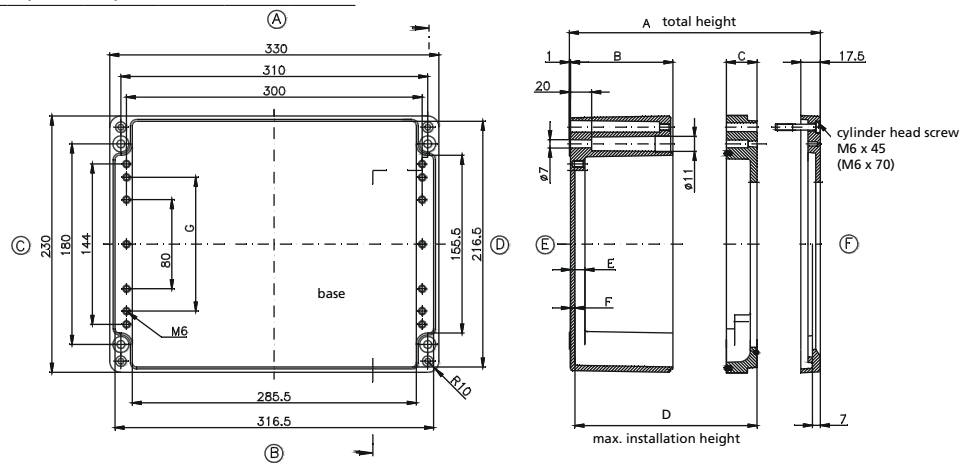
Order No.

13.11 05 00



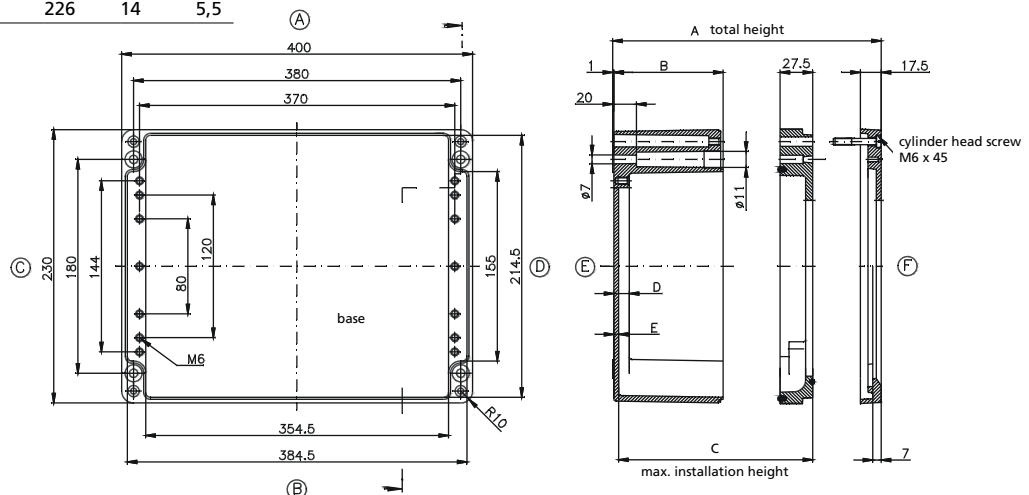
Order No.

Order No.	A	B	C	D	E	F	G
13.12 05 00	129,5	92	27,5	113,5	13	4	120
13.12 05 10	153	92	51	137	13	4	120
13.13 05 00	199,5	163	27,5	181,5	15	6	-



Order No.

Order No.	A	B	C	D	E
13.14 05 00	129,5	92	113,5	13	4
13.15 05 00	243,5	207	226	14	5,5

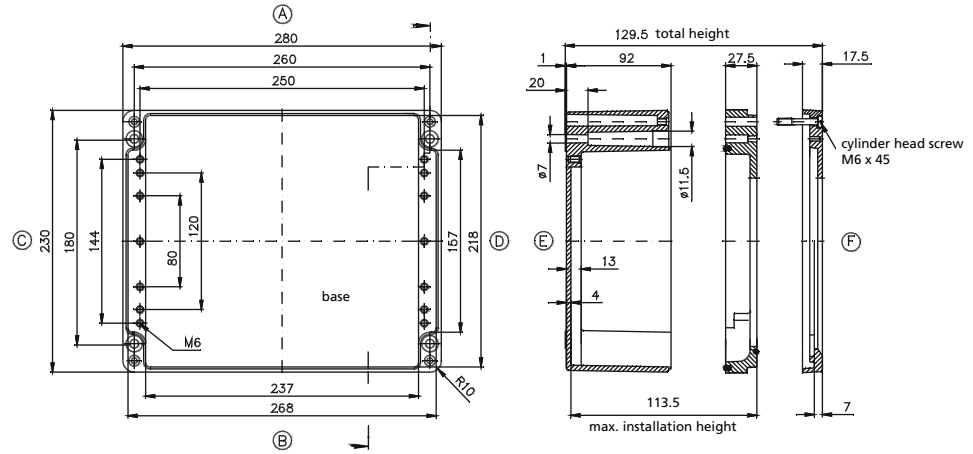


Commander 1F

Dimensions

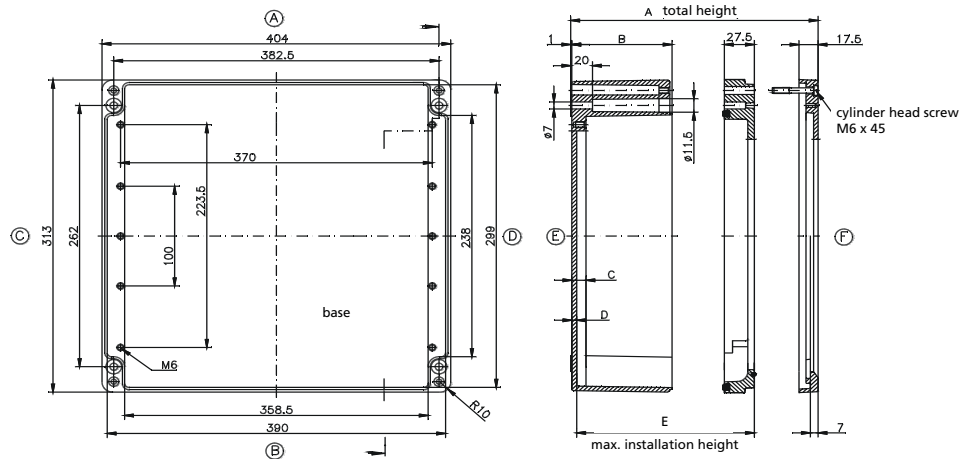
Order No.

13.17 05 00



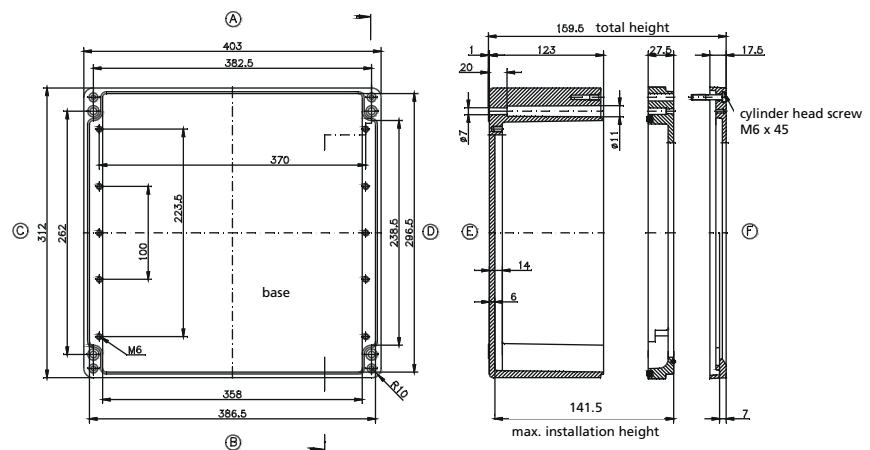
Order No.

Order No.	A	B	C	D	E
13.20 05 00	129,5	92	13	4,5	113
13.21 05 00	199,5	163	14	6	181,5



Order No.

13.25 05 00





- Enclosure system for control and display fittings
- Variable size available in width and depth
- All-round adaptation capabilities for accessories
- Front panel insertion from front and rear

Included in delivery:

Enclosure body with rear panel or door, front panel fixing set, cover profile and T-groove cover.

Technical data

Material:

Profile: DIN EN 573 EN AW-AMgSi

Front plate, rear wall: DIN EN 573 EN AW-AMg3

Corner pieces: DIN EN 1706 EN AC-AISI 12 (Fe)

Seal:

CR round seal

Painting:

Powder coating

Colour:

Enclosure: RAL 7035, light grey

Handle tube: RAL 3003, ruby red

Ingress protection:

IP 65 to EN 60529

Temperature range:

-30°C to +80°C

SL 2000

Product range

Front plate dimensions H x W (mm)	Profile 1 mounting depth 80,5 mm	Weight (g)	Profile 2 mounting depth 110 mm	Weight (g)	Profile 3 mounting depth 185 mm	Weight (g)	Front plate with drill hole (insert from front)	Weight (g)	Front plate without drill hole (insert from rear)	Weight (g)
Rear wall screwed										
267 x 483	19.50 65 01	4700	19.50 95 01	5500	19.50 19 01	6700	19.60 00 01	1050	19.60 00 11	1030
312 x 483	19.51 65 01	5100	19.51 95 01	5900	19.51 19 01	7100	19.60 01 01	1200	19.60 01 11	1220
356 x 483	19.52 65 01	5400	19.52 95 01	6300	19.52 19 01	7500	19.60 02 01	1400	19.60 02 11	1400
155 x 483	19.53 65 01	4100	19.53 95 01	4600	-	-	19.60 04 01	600	19.60 04 11	600
Special sizes*	19.59 65 01		19.59 95 01		19.59 19 01		19.60 03 01		19.60 03 11	
Door at rear										
267 x 483	19.50 65 00	4900	19.50 95 00	5600	19.50 19 00	6600	19.60 00 01	1050	19.60 00 11	1030
312 x 483	19.51 65 00	5200	19.51 95 00	6000	19.51 19 00	7200	19.60 01 01	1200	19.60 01 11	1220
356 x 483	19.52 65 00	5500	19.52 95 00	6400	19.52 19 00	7600	19.60 02 01	1400	19.60 02 11	1400
155 x 483	19.53 65 00	4200	19.53 95 00	4700	-	-	19.60 04 01	600	19.60 04 11	600
Special size*	19.59 65 00		19.59 95 00		19.59 19 00		19.60 03 01		19.60 03 11	

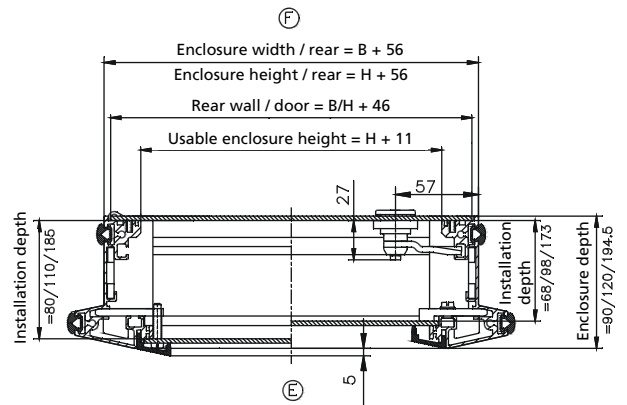
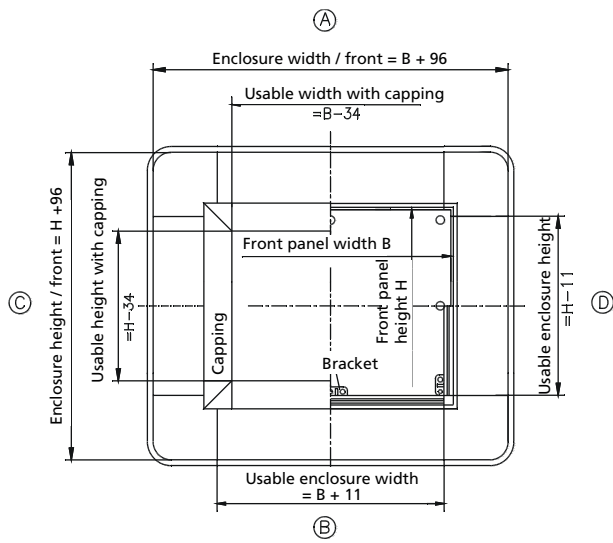
* Please specify front panel dimensions

Accessories

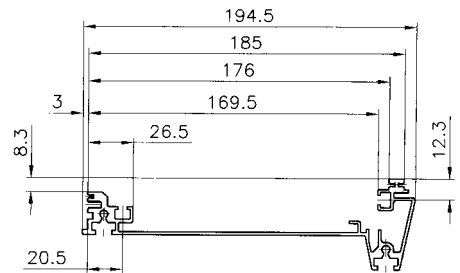
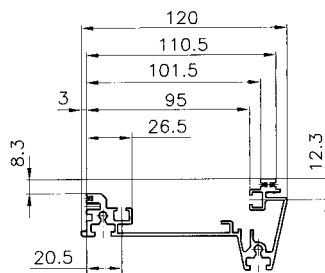
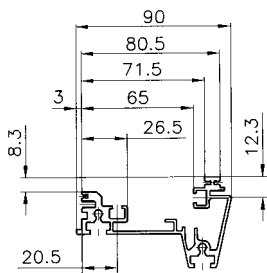
	Order No.
Console attachment set, 15° fixed inclination, for console front panel height 100 - 270 mm (2000 g)	19.59 00 11
Console attachment set, 30° fixed inclination, for console front panel height 100 - 270 mm (2000 g)	19.59 00 12
Console attachment set, adjustable (2000 g)	19.59 00 13
Console attachment set, 15° fixed inclination , special length	19.59 00 98
Console attachment set, 30° fixed inclination , special length	19.59 00 99
Keyboard holder (3300 g) (page 75)	19.60 10 04
Linking bar, standard length 483 mm (500 g)	19.59 00 20
Linking bar, special length	19.59 00 21
Hinge set (2 hinges incl. screws; 250 g) (page 78)	19.60 10 08
Disc drive bay (170 g)	19.60 10 05
Panel mounting set (6 elements incl. screws) for profiles 1+2 (300 g)	19.60 10 00
Panel mounting set (6 elements incl. screws) for profile 3 (300 g)	19.60 10 03
Fixing set 1 (12 spring nut, brackets, screws)	19.60 10 01
Fixing set 2 (30 spring nut, brackets, screws)	19.60 10 02
Rubber cover (5 mm wide)	19.60 10 06
Rubber cover (8 mm wide)	19.60 10 11
Quick fastener set (12 pcs)	19.60 10 07
Spring nut set M5 (8 pcs)	10.03 60 01
Handle set (2 brackets, 1 tube), length 256 mm (600 g)	19.60 20 01
Handle set (2 brackets, 1 tube), length 301 mm (700 g)	19.60 20 04
Handle set (2 brackets, 1 tube), length 345 mm (700 g)	19.60 20 05
Handle set (2 brackets, 1 tube), length 472 mm (800 g)	19.60 20 06
Handle corner set (3 brackets, 1 tube) length 556 / 395 mm (900 g)	19.60 20 02
Handle set, special length	19.60 20 99
Coupling flange profile 1 for GT 48/2 and GTK electronic (200 g)	19.60 20 03
Coupling flange profile 2 for GT 48/2 and GTK electronic (300 g)	19.60 20 11
Coupling flange profile 3 for GT 48/2 and GTK electronic (500 g)	19.60 20 12
Coupling flange profile 2 for GT 50/2, GT 60/2 and GTN II (600 g)	19.60 20 07
Coupling flange profile 3 for GT 50/2, GT 60/2 and GTN II (700 g)	19.60 20 08
Coupling flange profile 3 for GT 80/2 and GTK 80 (1200 g)	19.60 20 13
Coupling flange profile 2 for GT 80/2 (900 g)	19.60 20 14
Keyboard drawer (page 74)	10.99 20 01
Document holder for handle mounting (page 77)	20.60 10 04
Document holder for direct mounting (page 77)	20.60 10 05
Mousepad rack (page 77)	20.60 10 06

Caution: Connection to suspension system only using flange coupling or angle flange coupling.

Dimensions



Profile



Profile 1

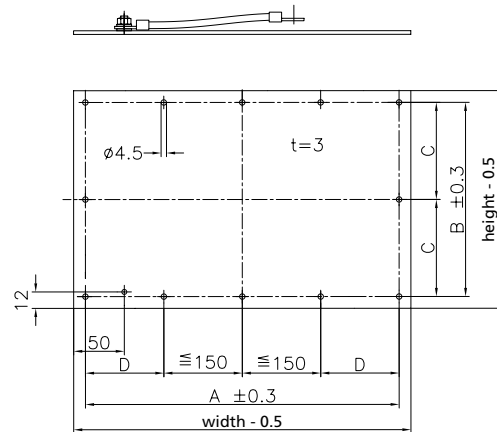
Profile 2

Profile 3

Accessories

Front plate

Order No.	Width	Height	A	B	C	D
19.60 00 01	483	267	465	249	124,5	116
19.60 01 01	483	312	465	294	147	116
19.60 02 01	483	356	465	338	169	116
19.60 04 01	483	155	465	137	-	116
19.60 03 01	variable	155	width - 18	height - 18	≤ 150	≤ 150



Accessories

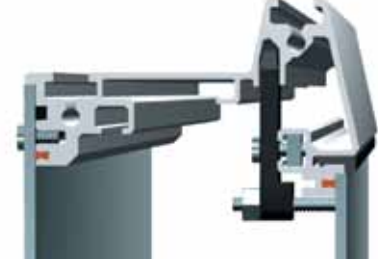
Front plate fastening



Front panel installation screwed from front



Front panel installation from rear



Front panel installation with stud bolts



Fixing set

Plastic parts for fitting front panel consisting of spring nuts, brackets and bolts

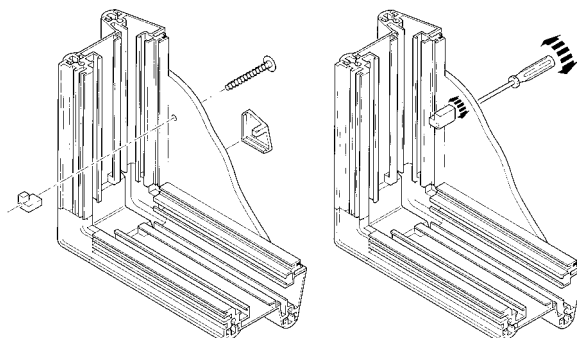
Order No.	Version
19.60 10 01	12 spring nuts, brackets, screws
19.60 10 02	30 spring nuts, brackets, screws



Quick fastener set

12 plastic parts for quick fastening screwed front panels from front

Order No. **19.60 10 07**

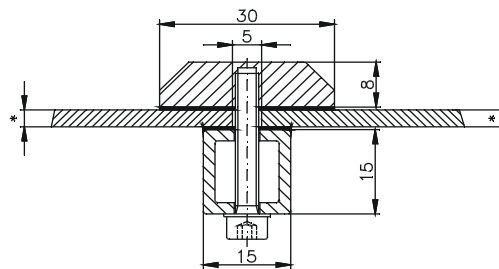


Accessories



Linking bar
for installation of two or more front panels into one enclosure

Order No.	Version
19.59 00 20	Standard length 483 mm (500 g)
19.59 00 21	Special length



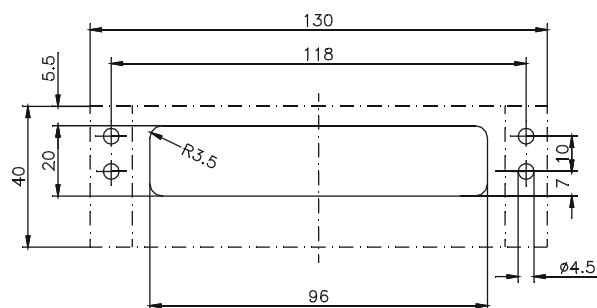
* Front panels must be of equal thickness for use with separating fin.



Disc drive bay
for installation of standard disk drives from the side into the profile or the front panel. Enclosure rating IP 65 when flap closed.

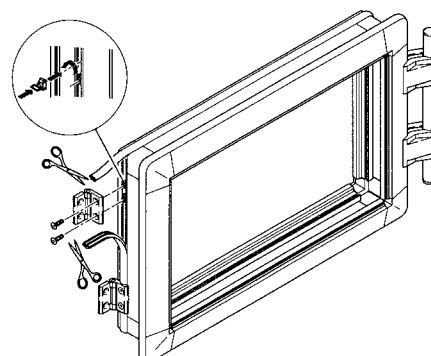
Order No. **19.60 10 05**

Insert space for disc drive bay



Quick fastener set
12 plastic parts for quick fastening screwed front panels from front

Order No. **19.60 10 07**

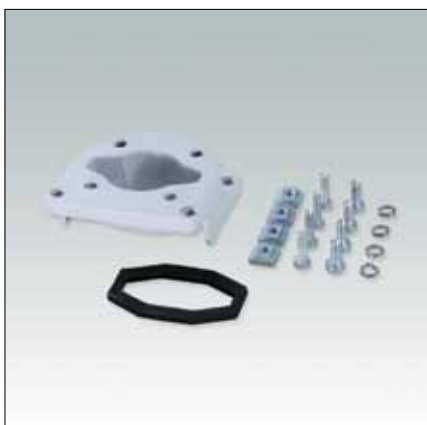


Accessories



Handle set

Order No.	Version
19.60 20 01	2 brackets, 1 tube, length 256 mm (600 g)
19.60 20 04	2 brackets, 1 tube, length 301 mm (700 g)
19.60 20 05	2 brackets, 1 tube, length 345 mm (700 g)
19.60 20 06	2 brackets, 1 tube, length 472 mm (800 g)
19.60 20 02	Handle corner set: 3 brackets, 1 tube, length 556/395 mm (900 g)
19.60 20 99	Handle set, special length



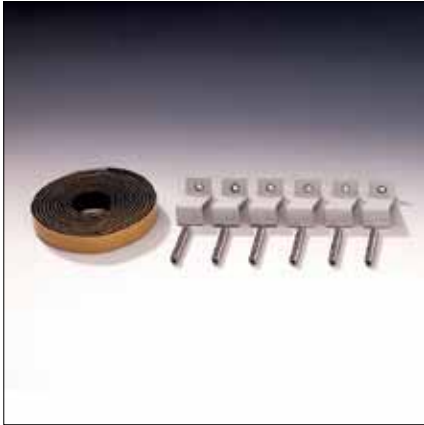
Coupling flange

for connection of the SL 2000 to suspension systems

Order No.	Version
19.60 20 03	Profile 1 for GT 48/2 and GTK electronic GTK electronic only 49.45 73 00; 49.45 75 00)
19.60 20 11	Profile 2 for GT 48/2 and GTK electronic
19.60 20 12	Profile 3 for GT 48/2 and GTK electronic
19.60 20 07	Profile 2 for GT 50/2, GT 60/2 and GTN II
19.60 20 08	Profile 3 for GT 50/2, GT 60/2 and GTN II
19.60 20 13	Profile 3 for GT 80/2 and GTK 80
19.60 20 14	Profile 2 for GT 80/2
19.60 20 15	Profile 1 for GTS
19.60 20 16	Profile 2 for GTS

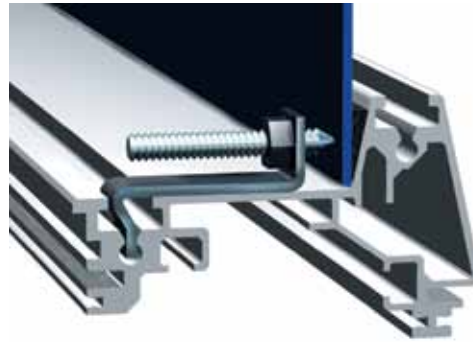
Caution: Connection to suspension system only using flange coupling or elbow flange coupling.

Accessories

**Control panel installation set**

For direct assembly of the SL 2000 into machine panel or switchgear cabinet

Order No.	Version
19.60 10 00	6 elements incl. screws for profiles 1 + 2
19.60 10 03	6 elements incl. screws for profile 3

**Control panel installation set**

For direct assembly of the SL 2000 into machine panel or switchgear cabinet

Order No.	Inclination	for console front panel height operating enclosure	for console front panel height keyboard enclosure
19.59 00 11	15° fest	250 - 370 mm	100 - 270 mm (2000 g)
19.59 00 12	30° fest	250 - 370 mm	100 - 270 mm (2000 g)
19.59 00 13	adjustable		(2000 g)
19.59 00 98	15° fest	special length*	special length*
19.59 00 99	30° fest	special length*	special length*

* Please specify enclosure length when ordering

The operating and keyboard enclosures must be the same width

Company _____ Telephone _____
 Contact _____ Fax _____
 Address _____ E-Mail _____

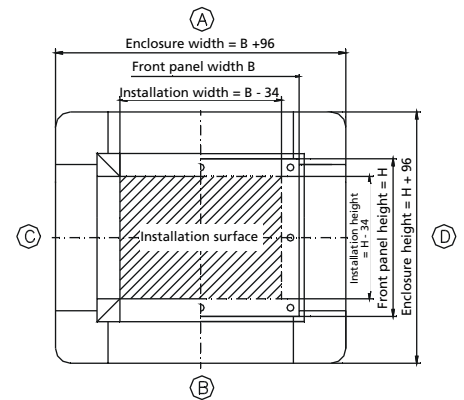
Operating enclosure

Version Door Rear wall screwed

Dimensions Profile 1 Profile 2 Profile 3
 Recessed rear panel for mm mounting depth

Please specify front panel dimensions and/or manufacturer/controller type:
 W x H (mm) _____ x _____
 and/or manufacturer/type _____
 W x H (mm) _____ x _____
 and/or manufacturer/type _____
 W x H (mm) _____ x _____
 and/or manufacturer/type _____

Front plate 3 mm, with drill holes 3 mm, without drill holes other _____ mm
 Fit in accordance with drawing (please attach)
 and/or specify manufacturer/controller type: _____



Keyboard enclosure

Version Door Rear wall screwed

Dimensions Profile 1 Profile 2

Please specify the number and dimensions of the front plate or the manufacturer and controller type.
 W x H (mm) _____ x _____ manufacturer/type _____
 W x H (mm) _____ x _____ manufacturer/type _____

Front plate 3 mm, with drill holes 3 mm, without drill holes other _____ mm
 Fit in accordance with drawing (please attach)
 and/or specify manufacturer/controller type: _____

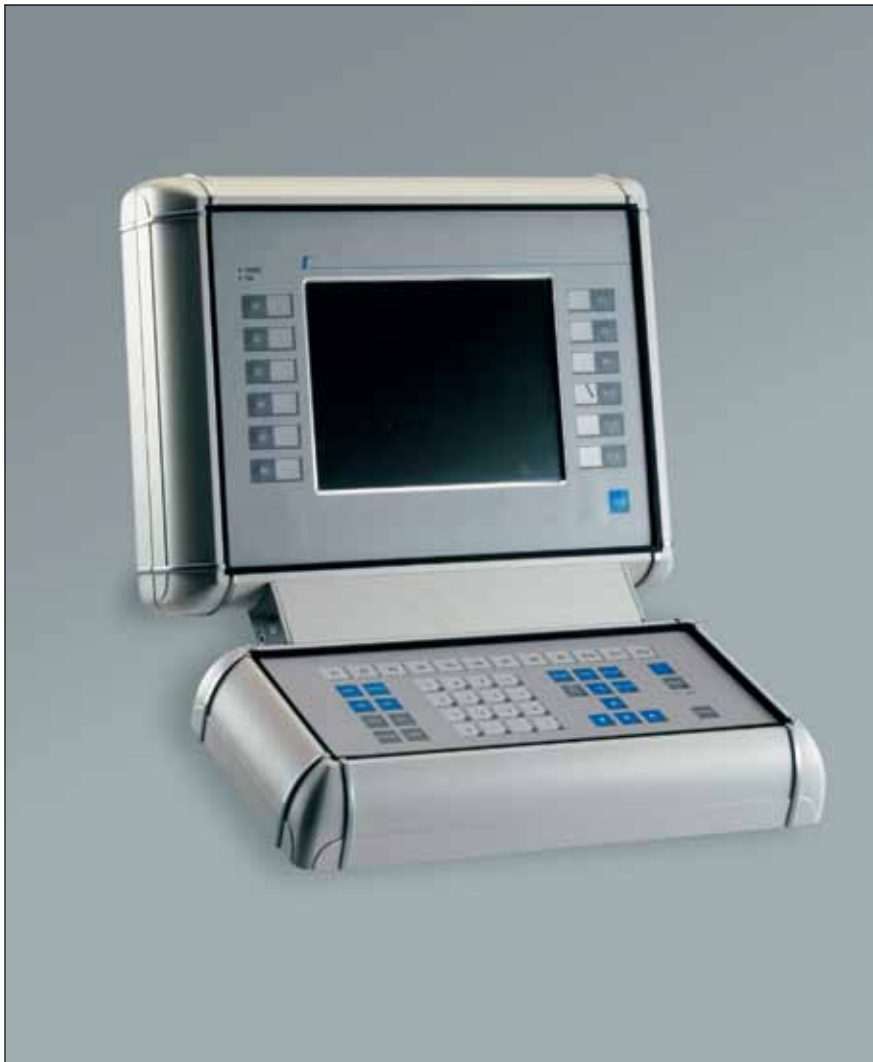
Console attachment set Standard _____ (Order No.) Special length _____ mm

Suspension system GTK electronic / GT 48/2, on side _____ GT 50/2 / GT 60/2, on side _____
 GT 80/2 / GTK 80, on side _____ GTN II on side _____
 GTS other _____ on side _____
 Moterm Operational enclosure from 236 mm front plate width,
 Console enclosure (fixed inclination) from 390 mm front plate width,
 Console enclosure (fixed inclination) from 560 mm front plate width

Handle set Standard _____ (Order No.) Mounting side _____
 Special length _____ mm Mounting side _____

Colour Standard (RAL 7035, handle red RAL 3003) Special colour (RAL) _____

Other accessories Disk mounting bay, mounting side _____ Hinge set, mounting side _____
 Keyboard holder Document holder Separation fin, qty _____
 Panel mounting set for profile 1 Panel mounting set for profile 2 Panel mounting set for profile 3
 Fixing set 12-piece Fixing set 30-piece Quick fastener set
 Spring nut set Rubber cover narrow 8 mm Rubber cover narrow 5 mm



- Universal control enclosure for automation technology
- Variable size in height, width and depth
- Hinged door profile at front and rear
- Front plate insertion from front or rear

Technical data

Material:

Profile: DIN EN 573 EN AW-ALMgSi

Cast corner: DIN EN 1706 EN AC-AISI 12 Cu 1 (Fe

Seal:

CR- and/or PU-foam

Painting:

Powder coating

Colour:

optional RAL 7035, light grey, or natural anodized

Special colour on request

Ingress protection:

IP 65 to EN 60529

Temperature range:

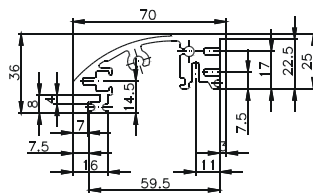
-30°C to +80°C

Included in delivery:

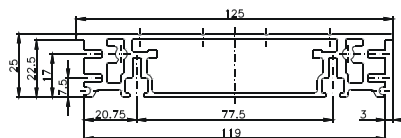
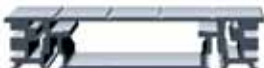
Enclosure body with rear wall, fixing elements, cover profile with corners

I. Profile for installation with front plate

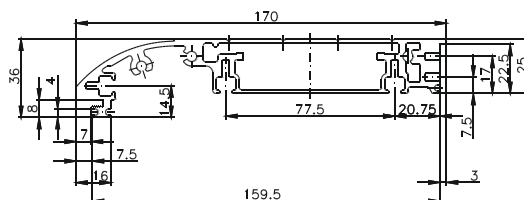
Profile 1 Hinged frame profile



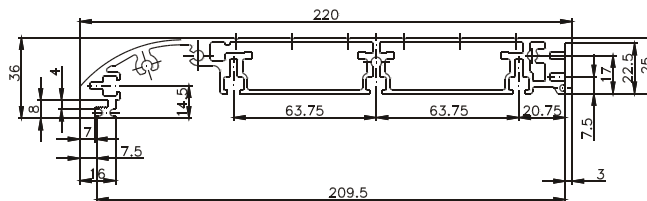
Profile 2 Intermediate frames



Profile 3 Body profile 170

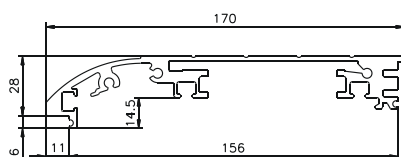


Profile 4 Body profile 220

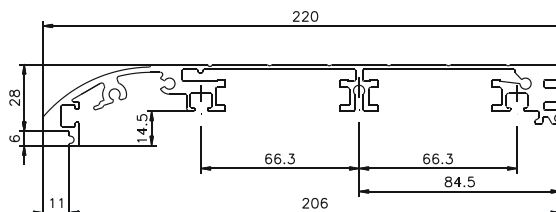


II. Profile for direct mounting of installation

Profile 3 direct mounting



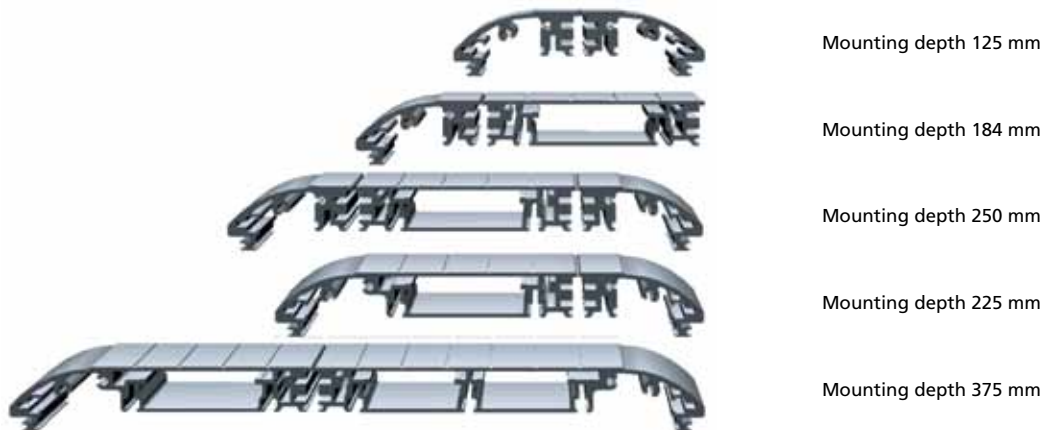
Profile 4 direct mounting



Profile info:

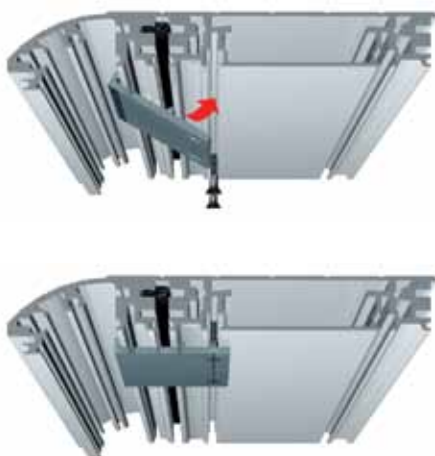
- All profiles can be combined with one another
- Profiles can be attached with fixed or hinged connections.
- If straight profile side (see example 2) the rear panel can also be designed as a door.
- The max. mounting depth in the case of operational enclosures is 675 mm (Profile 4 + 2 + 2 + 4)
- The max. mounting depth with console attached is 425 mm (Profile 4 + 4)
- The max. enclosure size is limited by the front plate to 1000 x 1000 mm

Example of profile combination options



Profile connection options

Fixed

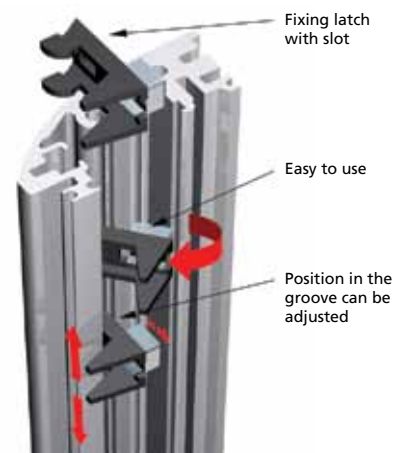


Hinged



Front plate fastening

- Zinc diecast latch with slot for insertion of M4 or M5 rack connecting nuts screwed version
- Turn the catch round to enable the front plate to be screwed in directly from the back



- Flush closure with profile
- With M4 or M5 rack connecting nut
- Concealed capping screw heads
- Latch reversed screwed into profile

SL 3000

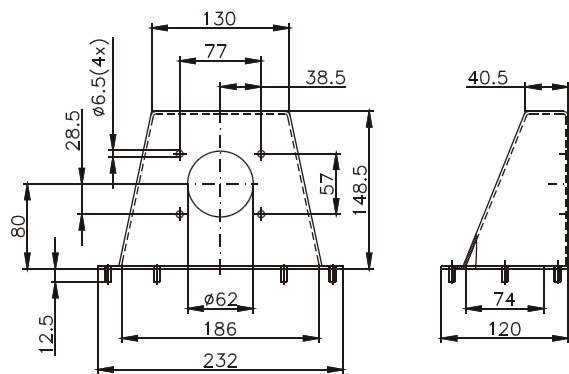
Suspension linkage

Profile	GTK electronic	GTS	GT 48/2	GTN II	GT 50/2	GT 60/2	GT 80/2	GTK 80
1	Coupling flange		Coupling flange	Adapter fitting	Adapter fitting	Adapter fitting		
1 + 1 (fixed or hinged)	Coupling flange		Coupling flange	Adapter fitting	Adapter fitting	Adapter fitting		
1 + 2 (hinged)	•	•	•	•	•	•	•	
1 + 2 (fixed)	•	•	•	•	•	•	•	•*
1 + 2 (hinged) + 1 (hinged)	•	•	•	•	•	•	•	
1 + 2 (hinged) + 1 (fixed)	•	•	•	•	•	•	•	•*
1 + 2 (fixed) + 1 (fixed)	•	•	•	•	•	•	•	•
2	•	•	•	•	•	•	•	
3	•	•	•	•	•	•	•	
3 + 1 (hinged)				•	•	•	•	
3 + 1 (fixed)				•	•	•	•	•**
3 + 2 (hinged) + 1 (hinged)				•	•	•	•	
3 + 2 (fixed) + 1 (hinged)				•	•	•	•	•
4				•	•	•	•	•

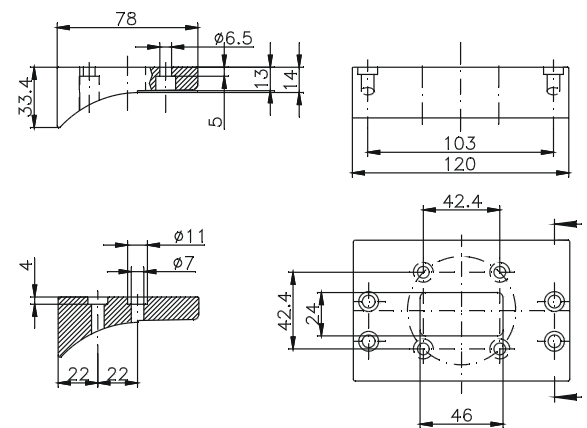
* 10 mm projection downstream of at rear

** every 5 mm projection to front and at rear

Adapter plate GT 50/2 and GT 60/2



Coupling flange for GTK electronic

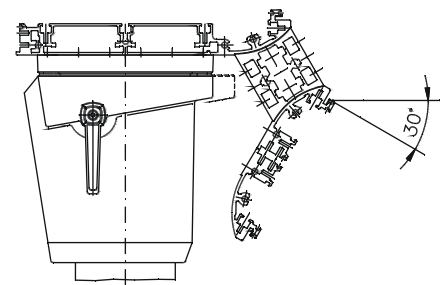


SL 3000 console enclosure (console attachment set 30°) with apparatus rack - connection from below

Suspension system	max. profile structure operating enclosure	Consol attachment
GT 50/2	Profile 3	Profiles 1 + 1
GT 50/2	Profiles 1 + 2	Profiles 1 + 2
GT 50/2	Profile 4	Profile 3
GT 60/2	Profiles 1 + 2	Profiles 1 + 1
GT 60/2	Profiles 1 + 2	Profiles 1 + 2
GT 60/2	Profile 4	Profile 3
GT 80/2	Profiles 1 + 2	Profiles 1 + 1
GT 80/2	Profile 4	Profiles 1 + 1

Example:

Operating enclosure Profile 4, console profile 1 + 1



Combination info:

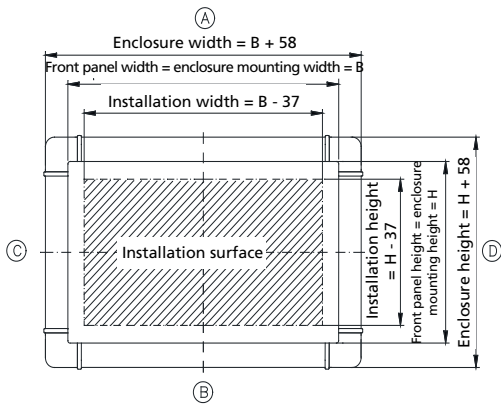
Due to the profile depth of the operating enclosure and the mounting depth of the console you must allow sufficient space for the apparatus rack system (see Example):

Dimensions

Front plate

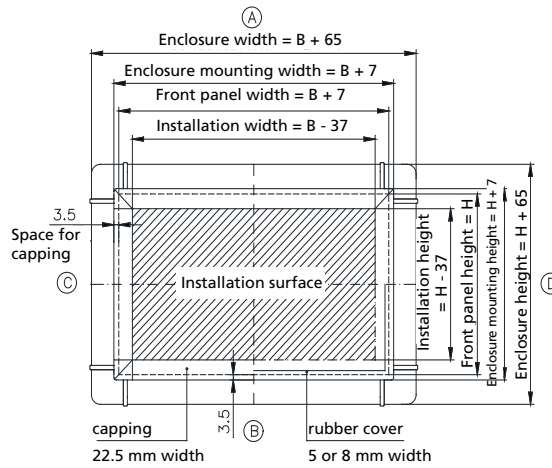
Version I

Front plate without cover profile or rubber cover



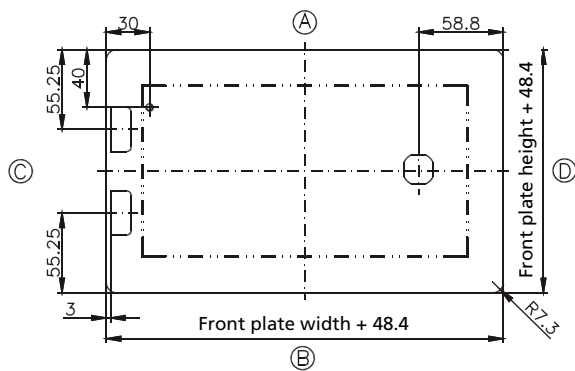
Version II

Front plate with cover profile or rubber cover surrounding

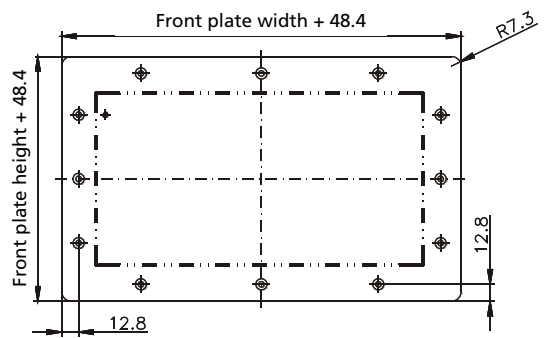


Rear wall

as door



screwed



Enclosure height (mm)	Hinge	Latch
≥ 402 to ≤ 600	3	2
> 600 to ≤ 800	4	3
> 800 to 1000	5	4

From a width of > 700 mm the door is reinforced to comply with enclosure rating.

Info:

The drill holes for the screwed rear wall is determined by the size of the front plate and are determined at the factory (spaced at between 100 and 150 mm).

Accessories



Handle set

The length of the handles is determined by the size of the front plate.

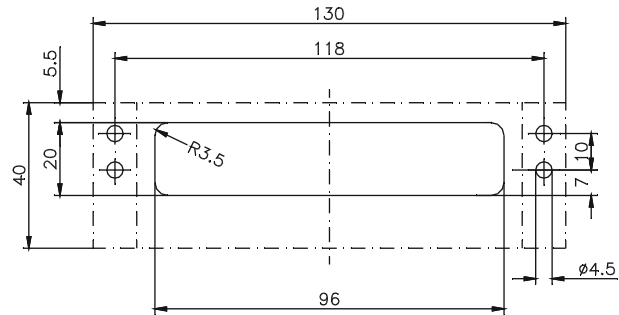
Width/height of front plate (mm)	Handle length (mm)
265-314	250
315-364	300
365-414	350
415-464	400
465-514	450
515-614	500
615-664	600
665-714	650
715-764	700
765-814	750
ab 815	800



Disc drive bay

For installation of standard disk drive from the side into the profile or the front plate. Enclosure rating IP 65 when flap is closed.

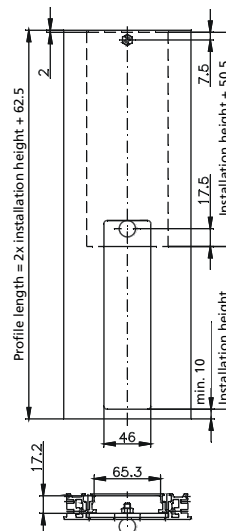
Insert space for disc drive bay



Insert bay

Available for Profiles 2, 3 and 4. The ingress protection is determined by the fitted equipment. It is possible to modify the interior enclosure panel walls individually. The size of the enclosure gives the maximum connector area.

In the case of profile combinations it is provided on the hinge side!

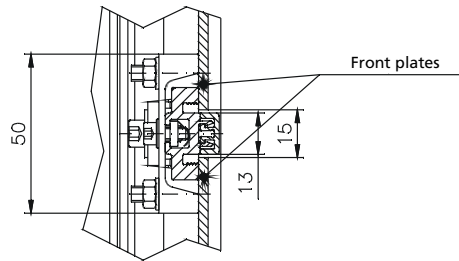


Accessories



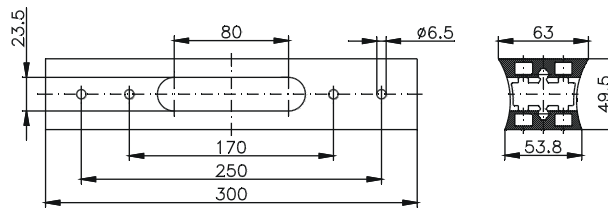
Linking bar

For installation of two or more front plates into one enclosure



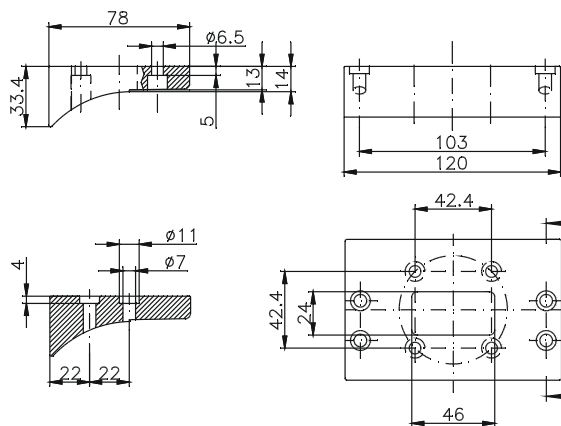
Console attachment set

30° or 50° inclination possible depending on assembly. Standard length 300 mm, larger or smaller lengths on request.



Coupling flange

20.60 10 07 Coupling flange GTK electronic / GT 48/2 / SL 3000 P1



Accessories



FCP - Foil Control Panel

Order No.	
20.60 10 50	Foil Control Panel 240/3
20.60 10 51	Foil Control Panel 335/6
20.60 10 52	Foil Control Panel 483/8

Other accessories

Locking plate, powdered GT 48/2 and GTK electronic	20.60 30 01
Locking plate, powdered GT 50/2 and GT 60/2	20.60 30 02
Locking plate, powdered GT 80/2	20.60 30 03
Locking plate, powdered GTK 80	20.60 30 04
Locking plate, powdered GTN II	20.60 30 05
Locking plate, anodized GT 48/2 and GTK electronic	20.60 30 11
Locking plate, anodized GT 50/2 and GT 60/2	20.60 30 12
Locking plate, anodized GT 80/2	20.60 30 13
Locking plate, anodized GTK 80	20.60 30 14
Locking plate, anodized for GTN II	20.60 30 15
Fastening set M4 (set = 12 pieces)	20.60 10 01
Fastening set M5 (set = 12 pieces)	20.60 10 02
Fastening set front panel (set = 12 pieces)	20.60 10 03
Document holder for handle mounting (page 77)	20.60 10 04
Document holder for direct mounting (page 77)	20.60 10 05
Mousepad rack (page 77)	20.60 10 06
Coupling flange GTK electronic / GT 48/2	20.60 10 07
Adapter plate P1/P2 on GT 80/2	20.60 10 08
Foil control panel 240/3	20.60 10 50
Foil control panel 335/6	20.60 10 51
Foil control panel 483/8	20.60 10 52
Mounting angle set	10.03 31 01
Installation rail set, rail length 80 mm	54.00 00 16
Installation rail set, rail length 160 mm	54.00 00 24
Installation rail set, rail length 240 mm	54.00 00 32
Keyboard drawer (page 74)	10.99 20 01
Mousepad rack (page 74)	10.99 20 02

Company _____
 Contact _____
 Address _____

Telephone _____
 Fax _____
 E-Mail _____

Dimensions Operating enclosure

Console versions, please also fill out the following page - „Console attachment enclosure“.

Mounting depth

T (mm) _____ of combination of profiles (please always specify from front to rear):

Profile no. _____ + Profile no. _____ + Profile no. _____ + Profile no. _____

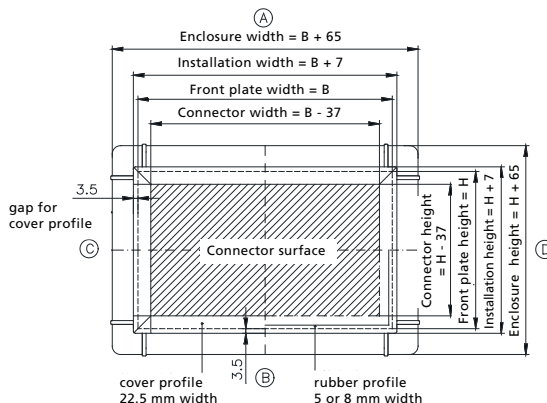
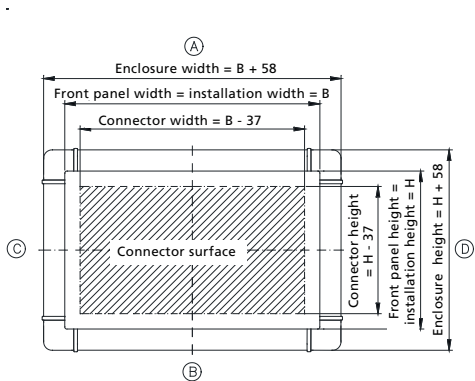
Connection: fixed hinged side _____ fixed hinged side _____ fixed hinged side _____

Dimensions

Please specify front plate dimensions W x H (mm) _____ x _____
 and/or manufacturer/type _____

Version I
 Front plate without cover profile or rubber profile

Version II
 Front plate surrounding with cover profile or rubber profile



Front plate

- without front plate (direct mounting) with M4 fixing set or with M5 fixing set
- Front plate with stud bolts (flush without cover profile, dimensions, see drawing version I)
- Front plate with stud bolts (with cover profile, dimensions, see drawing version II)
- Front plate with drill holes
- Cover profile 22.5 mm (plastic black, dimensions s. version II)
- Cover profile for front plate, 5 mm rubber (Version II)
- Cover profile for front plate, 8 mm rubber (Version II)
- other front plate _____
- Finish in accordance with drawing no.: _____ (please attach)
 and/or specify manufacturer/controller type: _____
- Separation fin quantity Position in accordance with drawing-no.: _____

Drawing no.: D-SL 3000 - _____ Bl. 1

Accessories SL 3000 for enquiry/ order

Company _____

Rear wall with straight closure screwed hinged, hinges side _____
 with rounded closure screwed, flush with stud bolts, flush
 Modified according to drawing-no. _____ (please enclose if available)

Lock types Square 8 mm (Standard)
 Square 7 mm Triangular 7 mm Triangular 8 mm
 Double ward 3 mm Other _____

Colour Standard: Profile RAL 7035, corner pieces RAL 9006, corner caps RAL 7035 powder-coated or
 Natural anodized profile, corner pieces RAL 9006, corner caps RAL 9007 powder-coated
 Special colours (please specify RAL colour for each):
 Profile RAL _____ Corner pieces RAL _____ Corner caps RAL _____

Suspension system GTK electronic, side _____ GTS, side _____ GT 48/2, side _____
 GT 50/2, side _____ GT 60/2, side _____ GT 80/2, side _____
 GTN II, side _____ GTK 80, side _____ (not Profile 1)
 Moterm Moterm with console
 Connection to console connector
 Connection to profile
 Other _____ Drawing-no.: _____ side _____
 Total weight of fittings approx. _____ kg
for profile combination: Coupling hole on profile no. _____ or optional
 specify weight distribution _____

Handle set Quantity _____ side _____ Special colour RAL _____

Other accessories Disc drive-/interface bay with flap (as for SL 2000), side _____
 Insert bay for disc drive (from 415 mm front panel height), side _____
 Insert slot for: _____ side _____
 Finish in accordance with drawing-no.: _____
 For Siemens disc drive

Other modifications/ special versions

Further modifications _____

 in accordance with drawing-no.: _____

Drawing no.: D-SL 3000 - _____ Bl. 2

stated by Rose profile length: width _____ mm height _____ mm

Dimensions**Console attachment enclosure**

Company _____

Mounting depth

T (mm) _____ of combination of profiles (please always specify from front to rear):

Profile no. _____ + Profile no. _____

Connection: fixed hinged, page _____**Dimensions**Front plate total dimensions (dimension sheet s. operational enclosure) W x H (mm) _____ x _____ Version Iand/or manufacturer/type of controller _____ Version II**Front plate** without front plate (direct mounting) with M4 fixing set or with M5 fixing set Front plate with stud bolts (flush without cover profile, dimensions, see drawing version I) Front plate with stud bolts (with cover profile, dimensions, see drawing version II) Front plate with drill holes Cover profile 22.5 mm (plastic black, dimensions s. version II) Cover profile for front panel, 5 mm rubber (Version II) Cover profile for front panel, 8 mm rubber (Version II) other front plate _____ Finish in accordance with drawing-no.: _____ (please attach)

and/or specify manufacturer/controller type: _____

 Separation fin quantity _____ Position in accordance with drawing-no.: _____**Rear wall**with straight closure screwed hinged, hinges side _____with rounded closure screwed, flush with stud bolts, flush Modified according to drawing-no. _____ (please enclose if available)**Lock types** square 8 mm (standard) square 7 mm double ward 3 mm triangular 7 mm triangular 8 mm Other _____**Colour**Standard: Profile RAL 7035, corner pieces RAL 9006, corner caps RAL 7035 powder-coated or Natural anodized profile, corner pieces RAL 9006, corner caps RAL 9007 powder-coated Custom colours (please specify RAL colour for each):

Profile RAL _____ Corner pieces RAL _____ Corner caps RAL _____

Console attachment set Standard 30° Standard 50°**Handle set** Quantity _____ side _____ Special colour RAL _____**Other accessories** Disc drive-/interface bay with flap (as for SL 2000), page _____ Insert bay for disc drive (from 415 mm front panel height), page _____ Insert slot for: _____ side _____ Finish in accordance with drawing-no.: _____ For Siemens disc drive**Other modifications/ special versions**

Further modifications _____ in accordance with drawing-no.: _____

Drawing no.:
stated by RoseD-SL 3000 - _____ Bl. 3
profile length: width _____ mm height _____ mm

Applications





- Modern enclosure system for control and display systems
- Flexible size variability in height and width, 3 enclosure depths
- Easy mounting of door hinge
- Integrated handle system

Technical data

Material:

Profile: DIN EN 573 EN AW-ALMgSi

Cast corner: DIN EN AC-AISI 12Cu 1 (Fe)

Seal:

Material: corner: PE seal

Front plate: CR seal

Painting / surface:

Powder coating or

natural anodized

Colour:

Profile: optional RAL 7035 or natural anodized

Corner element: optional RAL 7035 or RAL 9007

Special colour on request

Ingress protection:

IP 65 to EN 60529

Temperature range:

-30°C to +80°C

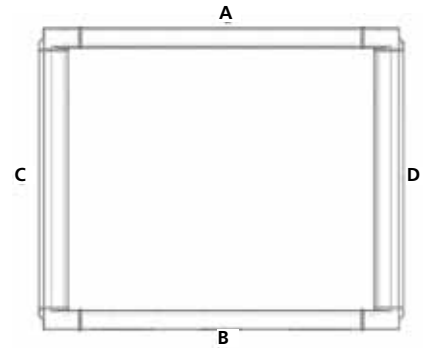
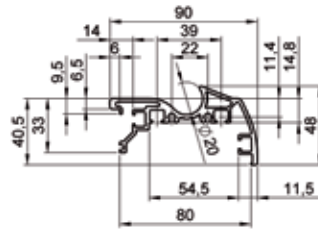
Included in delivery

Complete enclosure system incl. corners, seals, fixing elements, rear panel or door, front panel fixing set.

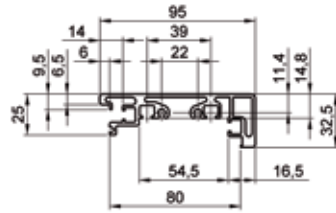
SL 4000

I. Profiles for control fitting by front plate

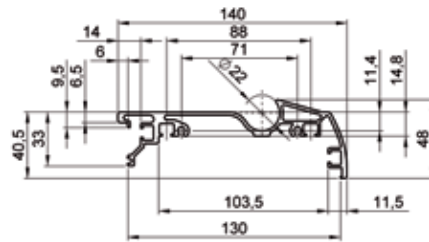
Profile 1 – Handle profile 90 side C/D



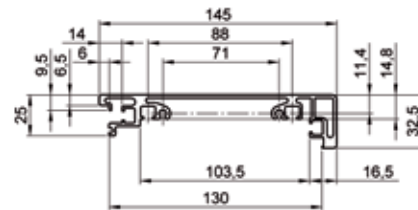
Profile 1 Body profile 90 side A/B



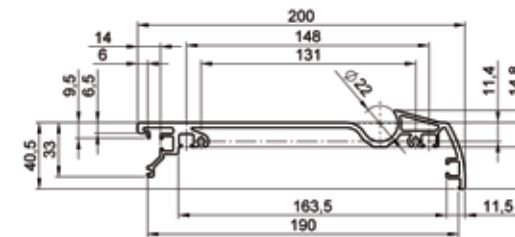
Profile 2 – Handle profile 140 side C/D



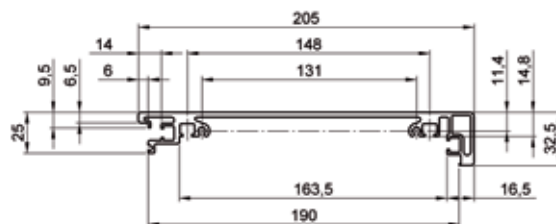
Profile 2 Body profile 140 side A/B



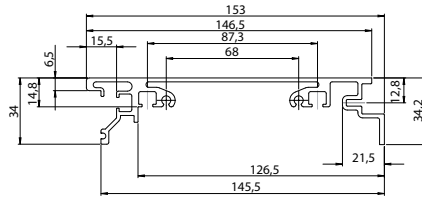
Profile 3 Body profile 200 side C/D



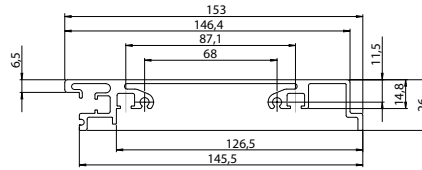
Profile 3 Body profile 200 side A/B



Profile 4 side C/D



Profile 4 side A/B

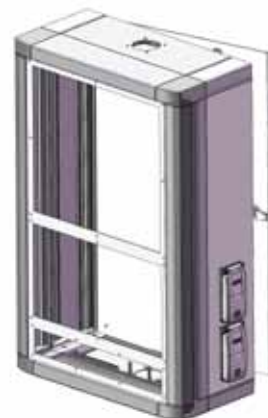
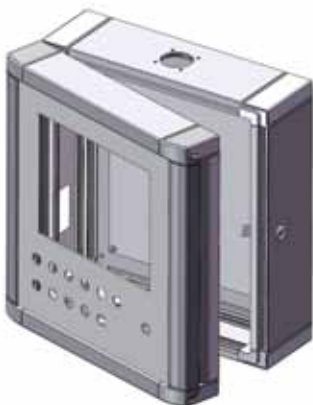


Profilverbindungsarten

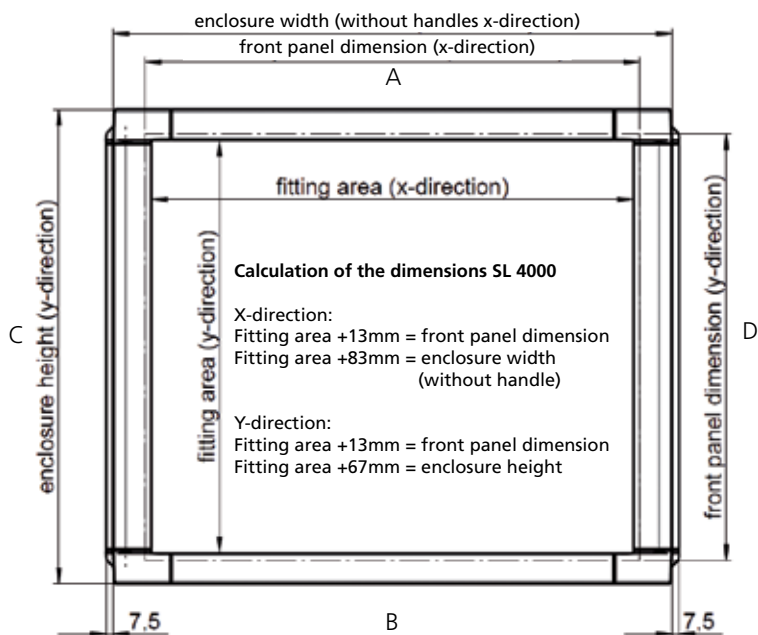
fixed



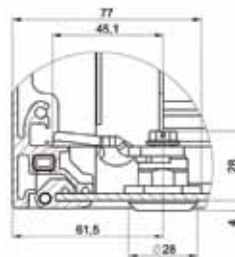
hinged



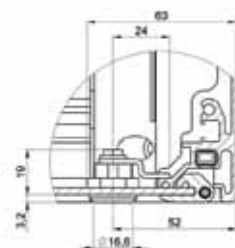
SL 4000



Position turn bolt fastener (rear wall)



Turn bolt fastener large
(mögliche Reduzierung der Einbautiefe um 25 mm)



Turn bolt fastener small
(mögliche Reduzierung der Einbautiefe um 16 mm)

Rear wall principles

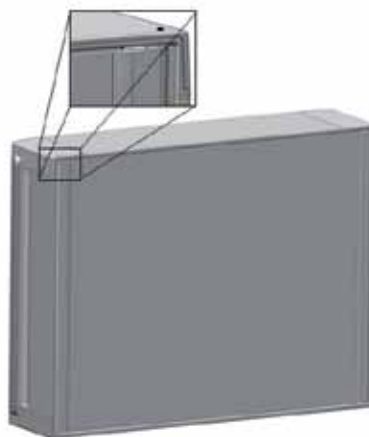
1. Standard configuration

- 2 spring elements as hinges allowing an easy way to change the hinge side
- The closing side is equipped with turn bolt fastener



2. Optional

- 2 spring elements as hinge
- 2 spring elements as snap lock
- Turn bolt fastener not applicable (Achtung: Reduzierung der Schutzart)



3. Optional

- Rear wall screwed









Front panel mounting

Front panel is mounted from inside. Quick and easy installation with four clamping bars.



Connection to suspension system

- Operating enclosure with suspension system connected from above or below
- Console enclosure connected from above

		GTS	GTKe	GT 48/2	GTN II	GT 50/2	GT 60/2	GT 80/2	GTK 80	Moterm
Profile 1 	above	•	•	•						
	below	•	•	•						•
Profile 2 	above	•	•	•	•	•	•			
	below	•	•	•	•	•	•			•
Profile 3 	above				•	•	•	•	•	
	below				•	•	•	•	•	•
Profile combination P1/P4 	above				•	•	•	•		
	below				•	•	•	•		•
Profile combination P2/P4 	above				•	•	•	•		
	below				•	•	•	•		•

- Console enclosure with suspension system connected from below
- Console enclosure Moterm, connected from below
- Profilkombination P1 + P4 bzw. P2 + P4; Geräteträgeranbindung an Profil P4

SL 4000

 Operating enclosure		 Console enclosure		GTS	GTKe	GT 48/2	GTN II	GT 50/2	GT 60/2	GT 80/2	GTK 80	Moterm
Profile 1		Profile 1		•	•	•						•
Profile 1		Profile 2		•	•	•						•
Profile 2		Profile 1		•	•	•	•	•	•			•
Profile 2		Profile 2		•	•	•	•	•	•			•
Profile 3		Profile 1					•	•	•	•		•
Profile 3		Profile 2					•	•	•	•		•
Profile 1 + 4		Profile 1					•	•	•	•		•
Profile 2 + 4		Profile 2					•	•	•	•		•

Caution: Consider minimum installation width of front panel to suspension systems:
 GTKe = 411 mm; GT 48/2 = 451 mm; GTN II = 451 mm; GT 50/2 = 501 mm; GT 60/2 = 551 mm; GT 80/2 = 569 mm

Accessories



Hinge set

Hinge for directly mounting on wall or machine. 2 hinge incl. screws, colour black

Order No.

20.10 90 50 for profile 1 and 2

20.10 90 60 for profile 3



Wall holder set

For swivelling sidewise mounting on the wall or machine, lockable in position, pivoting range 180°. colour: RAL 7035 light grey

Order No.

20.10 90 30 for profile 2 and 3



Fixing set

Spring nut set for mounting and fixing the fitting components inside into the system slots. (8 pcs.)

Order No.

10.03 60 04 M4

10.03 60 01 M5



External handles (2 pcs.)

The length of the handles depends on the size of the front plate.

Front plate width/- height (mm)	Handle length (mm)	Order No.
265-314	250	20.60 40 02
315-364	300	20.60 40 03
365-414	350	20.60 40 04
415-464	400	20.60 40 05
465-514	450	20.60 40 06
515-614	500	20.60 40 07
615-664	600	20.60 40 09
665-714	650	20.60 40 10
715-764	700	20.60 40 11
765-814	750	20.60 40 12
ab 815	800	20.60 40 13

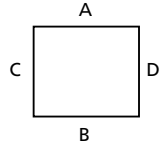
Special length on request

Company _____ Telephone _____

Contact _____ Fax _____

Address _____ E-Mail _____

Operating enclosure



Profiles Profile 1 (Mounting depth = 80 mm) Profile 2 (Mounting depth = 130 mm) Profile 3 (Mounting depth = 190 mm)

Profile combination Profile 1 + 4 (Mounting depth = 220 mm) Profile 2 + 4 (Mounting depth = 270 mm)

Connection fixed hinged side (C or D) _____ (rear wall screwed)

Lock types Square (7 mm) Triangular (7 mm) Double ward (3 mm)
 Square (8 mm) Triangular (8 mm) Special lock type _____

Front plate without front plate
 Panel direct mounting by mounting frame / control type _____
 with front plate required connector surface W x H (mm) _____ x _____
 required front panel dimension W x H (mm) _____ x _____

Colour Standard Profile RAL 7035, corner pieces RAL 7035
 Profile natural anodized, corner pieces RAL 9007
 Special colour RAL (please specify RAL colour for each) Profile RAL _____ corner RAL _____
 Profile anodized corner RAL _____

Door / Rear wall Rear wall screwed (always with hinged profile combination)
 Door left hinged (side C) right hinged (side D)
 Lock types turn bolt fastener - small turn bolt fastener - large
 Square (6 mm) Square (8 mm) Triangular (7 mm)
 Triangular (6.5 mm) Square (7 mm) Triangular (8 mm)
 Slot (1.5 mm) Double ward (3 mm)
 Special lock type _____ (note: reduction of IP rating)
 Further information of machining _____
 Modified acc. drawing no. _____ (please enclose)

Modifications Modified acc. drawing no. _____ (please enclose)

Front plate Cutting W x H (mm) _____ x _____
 and/or manufacturer/type of controller _____
 Drill holes diameter (mm) _____ number _____
 Other front plate modifications / special versions _____

Profile Modified acc. drawing no. _____ (please enclose)
 Cutting W x H (mm) _____ x _____
 Drill holes diameter (mm) _____ number _____
 Other profile modifications / special versions (position etc.) _____

Connection - Suspension system Profile 1 / 2 / 3 / 4: GTKe GT 48/2 GTS Moterm (linkage only from below)
 Profile 2 / 3 / 4: GT 50/2 GT 60/2 GTN II
 Profile 3: GT 80/2 GTK 80
 Profile 4: GT 80/2 profile in combination coupling hole on profile 4
 External system (please name drawing and manufacturer) _____
 Side A (above) Side B (below) Rear wall (on request)
 Further information _____

Accessories

Handles
(additionally)

Number _____ Side(s) _____

- Standard (Order No.): _____
- Special length (mm) _____



Hinge set
(only single profile)

Hinge side Side C (left) Side D (right)

Any further information of the position _____



Wall holder set
(only single profile)

Position (side) Side C (left) Side D (right)

Any further information of the position _____



Document holder

Position (side) C (left) D (right)

Any further information of the position _____



Fixing set

- Spring nut set M4 (8 pieces) number _____
- Spring nut set M5 (8 pieces) number _____



Single interfaces (IP 65) USB



RJ45



Any further information to front panel interfaces (requirements, position etc.) _____

Multiple interfaces

Interfaces and power supplies for optional mounting on the front plate, rear wall or side of the profile 2, 3 and 4.

Single flap

Metal

- Type 1 Type 2 Type 3

Plastic with knob

- Type 4 Type 5 Type 6

Plastic with double ward

- Type 7 Type 8 Type 9

Double flap

Metal

- Type 11 Type 12 Type 13

Plastic with knob

- Type 14 Type 15 Type 16

Plastic with double ward

- Type 17 Type 18 Type 19

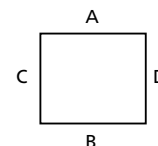
Power outlets (Screw terminals)

- USA (NEMA 5-15) Australia
- China (C C C) Denmark
- Germany (VDE) England (BS)
- France (UTE) India (IS 1293)
- Italy (CEI 23-16) Switzerland
- Germany (VDE) with cutout for circuit breaker (only with double flap, plastic)



Data interfaces

- SUB-D9 (socket) number _____
- SUB-D9 (plug) number _____
- SUB-D15 (socket) number _____
- RJ12, 6-pol. plastic number _____
- RJ45, 8-pol. Metal, CAT5e (socket/socket) number _____
- USB (socket/socket) number _____
- Combination (Specification see below)



Position

- Front plate Rear wall (door) Side profile (profile 2 / 3)

Any further information to front panel interfaces (requirements, position etc.) _____

Further accessories _____

Console attachment

Profile type Profile 1 (Mounting depth = 80 mm) Profile 2 (Mounting depth = 130 mm)

Front plate without front plate
 Panel direct mounting by frame / control type
 with front plate required connector surface W x H (mm) x
required front panel dimension W x H (mm) x

Colour
Standard Profile RAL 7035, corner pieces RAL 7035
 Profile natural anodized, corner pieces RAL 9007
 Special colours (please specify RAL colour for each)
 Profile RAL corner RAL
 Profile anodized corner RAL

Door / Rear wall
Standard screwed
 other (on request)

Modification

Front plate Modified acc. drawing no. (please enclose)
 Cutting W x H (mm) x
 and/or manufacturer/type of controller
 Drill holes diameter (mm) number
Other front plate modifications (Positionen usw.)

Profile Modified acc. drawing no. (please enclose)
 Cutting W x H (mm) x
 Drill holes diameter (mm) number
Other profile modifications (Positionen usw.)



- Keyboard drawer and keyboard tray
- Keyboard holder
- Single and multi interface flaps and flap inserts

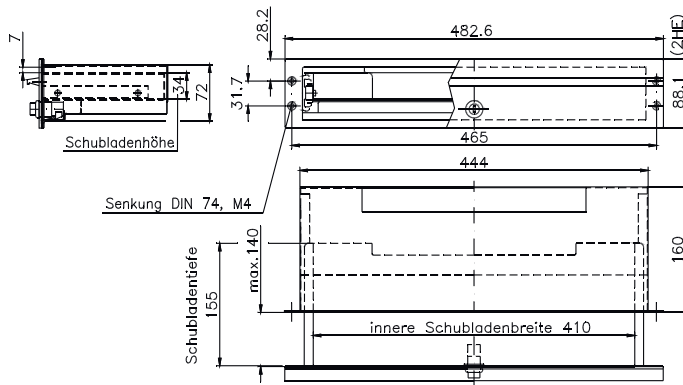
Commander system accessories



Keyboard drawer

Drawer for keyboards, IP 40 to front side.
Installation into command systems: SL 2000, Profile 3; SL 3000, Profile 3 and 4; SL 4000 Profile 3; optional with keyboard.

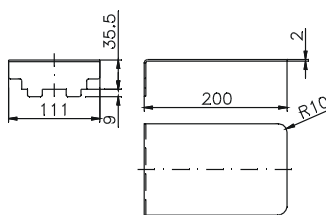
Order No. **10.99 20 01**



Mousepad rack

for keyboard drawer 10.99 20 01

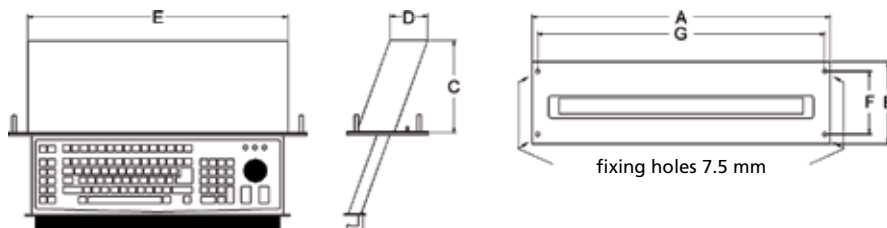
Order No. **10.99 20 02**



Keyboard drawer RTS 3 (with 20° slope)

Built-in drawer for keyboards, IP 65 for the front side
Dimensions: 483 x 132.5 x 150 mm
for keyboards with maximum dimensions 340 x 170 x 15 mm
Drawer with 20° slope with magnetic latch for installing from the front with front panel (RAL 9006, white aluminium) or for installing from the inside of the enclosure
Related keyboard on request

Order No.	Type
10.99 20 03	Keyboard drawer RTS 3-F (20° slope with front panel)
10.99 20 04	Keyboard drawer 3HE (20° slope without front panel)



Dimensions (mm)

A	B	C	D	E	F	G
483	132.5	150	61	421	101.5	465

Commander system accessories



Keyboard drawer RTS 1 (1HE)

Built-in drawer for keyboards, IP 65 for the front side

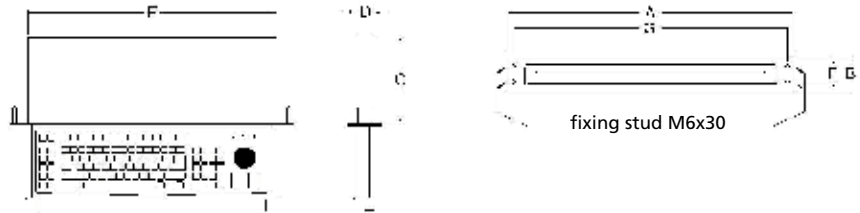
Dimensions: 483 x 44 x 160 mm

for keyboards with maximum dimensions 370 x 140 x 15 mm

Drawer without slope with magnetic latch for installing from the front with front panel (RAL 9006, white aluminium) or for installing from the inside of the enclosure

Related keyboard on request

Order No.	Type
10.99 20 11	Keyboard drawer RTS 1-F (with front panel)
10.99 20 12	Keyboard drawer RTS 1 (without front panel)



Dimensions (mm)

A	B	C	D	E	F	G
483	44	160	31	421	25	465



Keyboard drawer RTS 2 (2HE)

Built-in drawer for keyboards, IP 65 for the front side

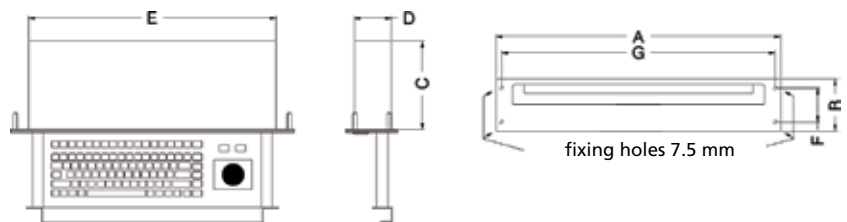
Dimensions: 483 x 88 x 150 mm

for keyboards with maximum dimensions 370 x 140 x 15 mm

Drawer without slope with magnetic latch for installing from the front with front panel (RAL 9006, white aluminium) or for installing from the inside of the enclosure

Related keyboard on request

Order No.	Type
10.99 20 13	Keyboard drawer RTS 2-F (with front panel)
10.99 20 14	Keyboard drawer RTS 2 (without front panel)



Dimensions (mm)

A	B	C	D	E	F	G
483	88	150	64	421	58	465

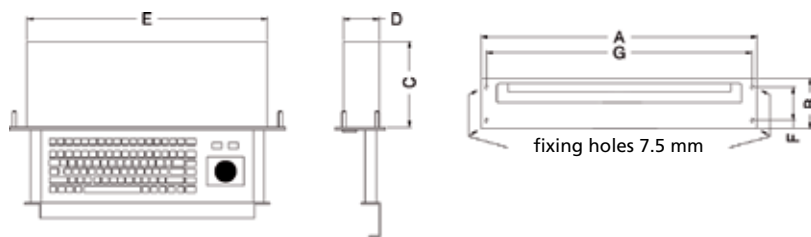
Commander system accessories



Keyboard drawer RTS 4

Built-in drawer for keyboards, IP 65 for the front side
 Dimensions: 560 x 123 x 203 mm
 for keyboards with maximum dimensions 465 x 170 x 15 mm
 Drawer with magnetic latch
 Mouse pad tray can be extended to the right or left
 for installing from the front with front panel (RAL 9006, white aluminium)
 including plastic Cherry keyboard G85-23100 DE-2 and mouse Cherry M 5450 and integrated USB port

Order No.	Type
10.99 20 08	Keyboard drawer RTS 4-F (with front panel)



Dimensions (mm)

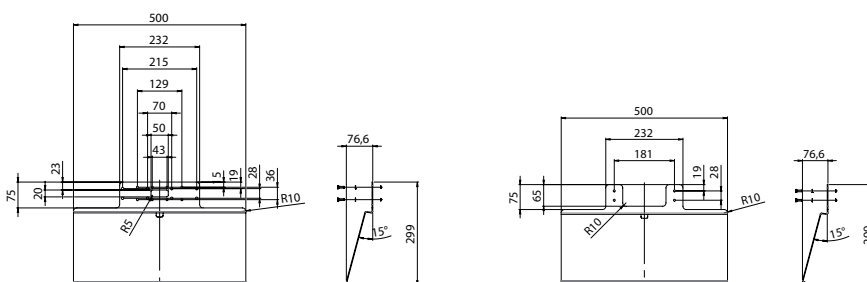
A	B	C	D	E	F	G
560	123	203	86	512	103	543



Keyboard tray, mild steel, inclination 15°

For mounting between Moterm and Commander and mounting onto commander with suspension system connection from above (Side A)
 Order No. **10.99 20 05**

For mounting between suspension system GTN II and GTS onto Commander (Side B)
 Order No. **10.99 20 06**



10.99 20 05

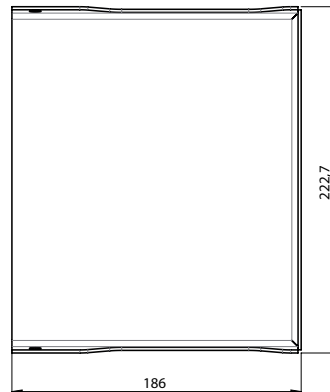
10.99 20 06

Commander system accessories



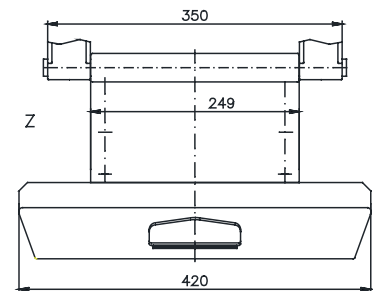
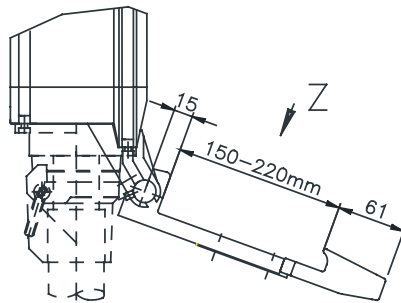
Mousepad tray, for Keyboard tray 10.99 20 xx
For side mounting onto keyboard tray (right side or left side)

Order No. 10.99 20 07



Keyboard holder SL 2000
For standard PC keyboards, consisting of mounting elements and keyboard holder

Order No. 19.60 10 04



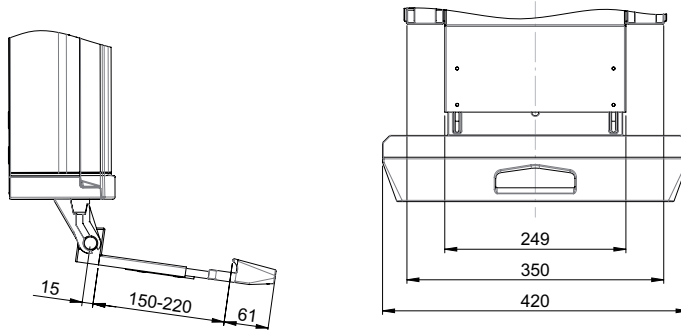
Mounting onto SL 2000 with front panel width ≥ 370 mm. With combination onto suspension system at Side B, please note profile depth and swivel range.

Commander system accessories



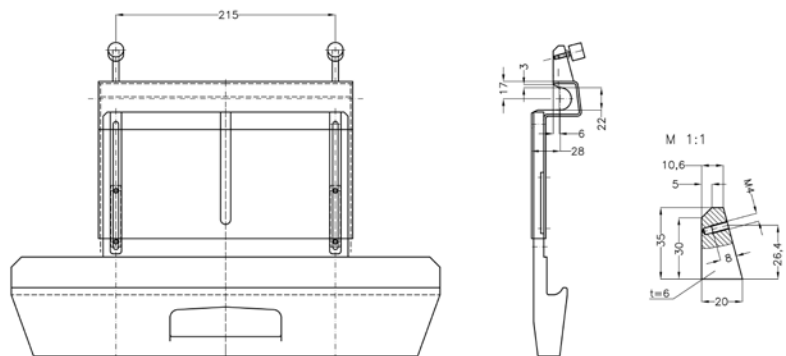
Keyboard holder SL4000
For standard PC keyboards, mounting onto SL 4000
(front plate width > 400 mm); keyboard optionally

Order No. **20.10 90 20**



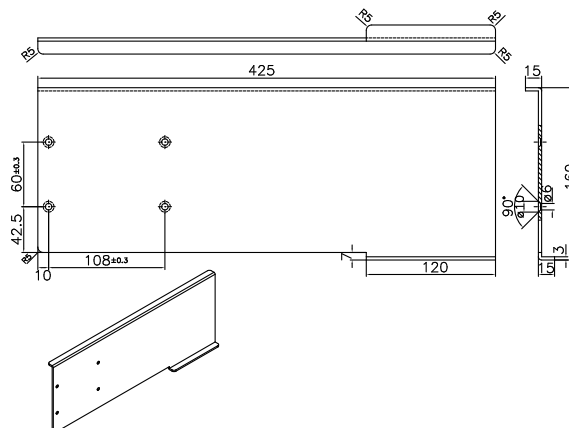
Keyboard holder SL3000
For standard PC keyboards.
Mounting onto SL 3000; Note only possible with handle mounting on side B.

Order No. **20.10 90 21**



Mousepad tray for keyboard holder
For side mounting onto keyboard holder 19.60 10 04, 20.10 90 20 and 20.10 90 21

Order No. **20.10 90 22**

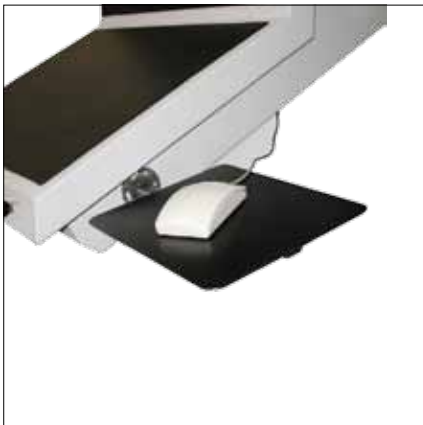
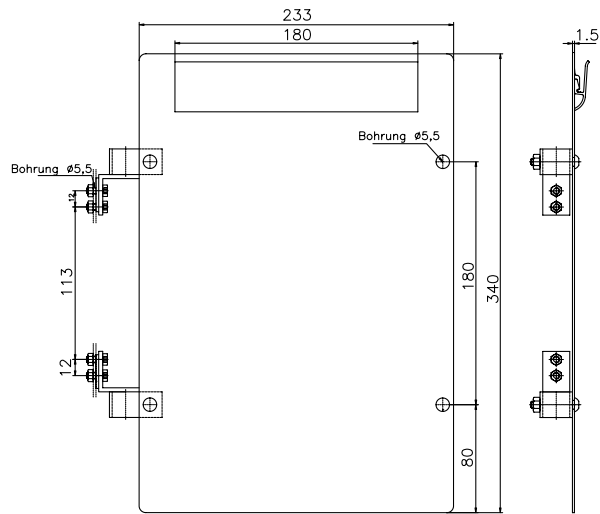




Document holder

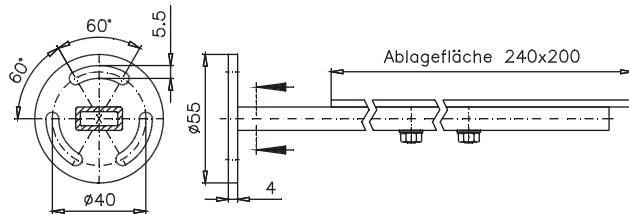
Clipboard with spring clip for sidewise mounting

Order No. **20.60 10 05** for Commander systems SL 2000, SL 3000, SL 4000, Comtronic onto side
20.60 10 04 for fixing onto tube handle at Commander systems



Mousepad rack

Order No. **20.60 10 06**



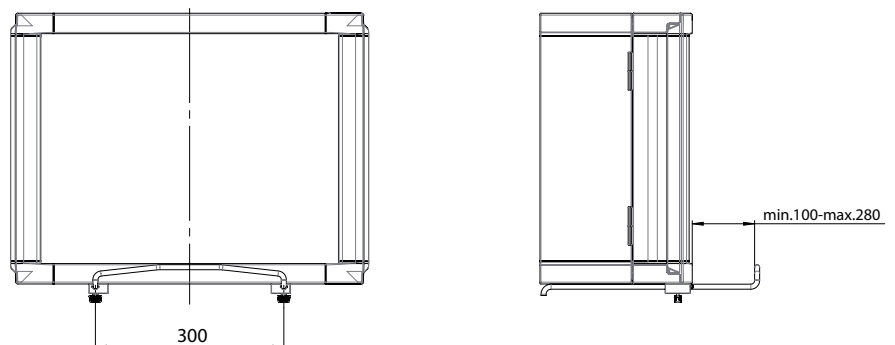
Laptop tray

for mounting to Commander systems SL 3000 and SL 4000

Retractable bracket with fastening elements

Surface width: 300 mm; maximum length when extended 280 mm

Order No. **20.99 00 10**

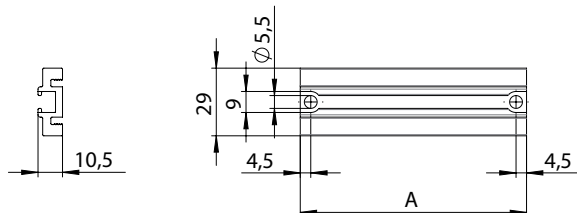


Commander system accessories



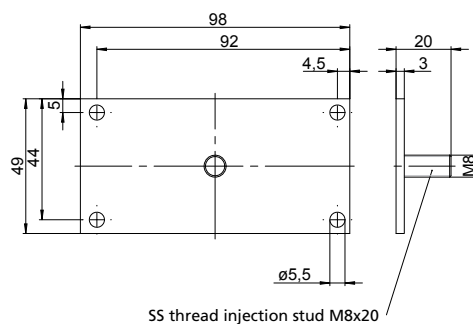
Fixing plates
for mounting components in Commander

Order No.	Type	Dimensions A
20.10 91 01	for SL 4000 profile 2	97
20.10 91 02	for SL 4000 profile 3	157
20.10 91 03	for SL 4000 profile 4	96.3
20.10 91 99	Individual length	



Commander grounding plate
Grounding plate installation in Commander SL 4000 (profiles 1 and 4)

Order No. **20.99 00 01**





Wall holder set

For swivelling sidewise mounting onto the wall or machine, lockable in position, pivoting range 180°. Colour: RAL 7035 light grey

Order No. **20.80 90 01** for Comtronic
20.10 90 30 for SL 3000 and SL 4000 profile 2, 3 and 4



Hinge set

Hinge for directly mounting onto wall or machine.
2 hinge incl. screws, colour black.

Order No.: **19.60 10 08** for Commander system SL 2000
20.10 90 50 for Commander system SL 4000 Profile 1 and 2
20.10 90 60 for Commander system SL 4000 Profile 3

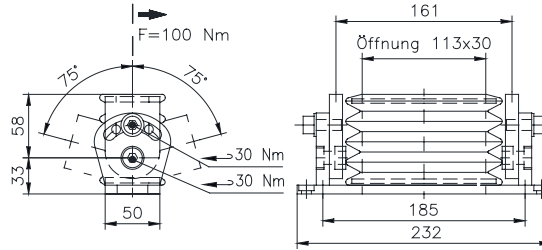
Commander system accessories



Inclining system

Continuously variable inclining system (+/- 75°) for Commander systems.
System consisting of aluminium elements with bellow.
Scope of supply: base unit without adaptation plate

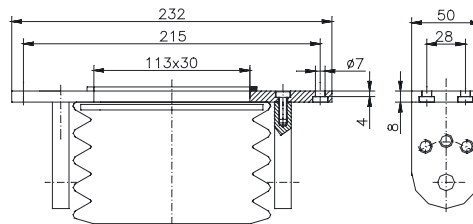
Order No. **50.02 01 01**



Adaptation plate

for connection of inclining system 50.02 01 01 onto control enclosure

Order No	Type
50.01 02 03	SL 2000 adapter plate Profile 1
50.01 02 04	SL 2000 adapter plate Profile 2
50.01 02 05	SL 2000 adapter plate Profile 3
50.01 02 06	SL 3000 adapter plate Profile 1
50.01 02 07	SL 3000 adapter plate Profile 2 - 4
50.01 02 08	SL 3000 adapter plate console version
50.01 02 09	Universal adapter plate (see drawing)
50.01 02 10	Beckhoff CP 7032 adapter plate
50.01 02 11	ComTronic adapter plate
50.01 02 12	SL 3000 adapter plate Profile 4 (direct mounting)
50.01 02 13	Flat panel adapter
50.01 02 14	Adapter plate SL 4000 Profile 1 - 3
50.01 02 15	Adapter plate SL 4000 desktop version





Single interfaces (IP 65) incl. connection cable and plug
or mounting on profile, front plate or rear wall

Order No.	Version
20.90 10 01	USB-Interface incl. Anschlusskabel und 1 Stecker
20.90 10 02	RJ45-Interface incl. Anschlusskabel und 1 Stecker
20.90 11 03	USB-Interface without cable
20.90 11 04	RJ45-Interface without cable



Single interface flaps, metal,
For data interfaces and electrical socket.
Profile 1/2/3: Rear wall or frontplate
Profile 2/3/4: Sidewise onto profile (Side C/D)

Order No.	Version
20.90 10 10	Version 1 Frame: Metal, dim nickel plated Lid: Plastic, transparent
20.90 10 11	Version 2 Frame: Metal, dim nickel plated Lid: Metal, dim nickel plated
20.90 10 12	Version 3 Frame: Metal, black coated Lid: Metal, black coated



Single interface flaps, plastic
For data interfaces and electrical socket.
Profile 1/2/3: Rear wall or frontplate
Profile 2/3/4: Sidewise onto profile (Side C/D)

Order No.	Version
20.90 10 14	Version 7 Frame: Plastic, black Lid: Plastic transparent Lock: 3 mm Double ward
20.90 10 15	Version 4 Frame: Plastic, black Lid: Plastic transparent Lock: Knob
20.90 10 16	Version 8 Frame: Plastic, black Lid: Plastic, metallic silver Lock: 3 mm Double ward
20.90 10 17	Version 5 Frame: Plastic, black Lid: Plastic, metallic silver Lock: Knob
20.90 10 18	Version 9 Frame: Plastic, black Lid: Plastic light grey Lock: 3 mm Double ward
20.90 10 19	Version 6 Frame: Plastic, black Lid: Plastic, light grey Lock: Knob

Commander system accessories



Double interface flaps, metal

For data interfaces and electrical socket.
 Profil 1/2/3: Rear wall or front panel
 Profil 2/3/4: sidewise onto profile (Side C/D)

Order No.

20.90 11 10 Version 11
 Frame: Metal, dim nickel plated
 Lid: Plastic transparent

20.90 11 11 Version 12
 Frame: Metal, dim nickel plated
 Lid: Metal, dim nickel plated

20.90 11 12 Version 13
 Frame: Metal, black
 Lid: Metal, black



Double interface flaps, plastic

For data interfaces and electrical socket.
 Profil 1/2/3: Rear wall oder front panel
 Profil 2/3/4: Sidewise onto profile (Side C/D)

Order No.

20.90 11 14 Version 17
 Frame: Plastic, black
 Lid: Plastic transparent
 Lock: 3 mm Double ward

20.90 11 15 Version 14
 Frame: Plastic, black
 Lid: Plastic transparent
 Lock: Knob

20.90 11 16 Version 18
 Frame: Plastic, black
 Lid: Plastic metallic silver
 Lock: 3 mm Double ward

20.90 11 17 Version 15
 Frame: Plastic, black
 Lid: Plastic metallic silver
 Lock: Knob

20.90 11 18 Version 19
 Frame: Plastic, black
 Lid: Plastic light grey
 Lock: 3 mm Double ward

20.90 11 19 Version 16
 Frame: Plastic, black
 Lid: Plastic light grey
 Lock: Knob



Einbaukomponenten für Schnittstellenklappen

Order No.

Schuko/Fl

20.90 11 05 Germany (VDE) with additional cut-out for earth
 leakage circuit breaker
 (can only be used onto double flaps)

Flap inserts

Data Interfaces



SUB-D9; SUB-D9
2 × SUB-D9 (socket/pin)
Order No. **20.90 10 30**



SUB-D9; SUB-D9
2 × SUB-D9 (solder connection/socket)
Order No. **20.90 10 31**



SUB-D9; SUB-D9
1 × SUB-D9 (solder connection/socket);
1 × SUB-D9 (solder connection/pin)
Order No. **20.90 10 32**



SUB-D9
1 × SUB-D9 (solder connection/socket);
1 × blank cover for SUB-D9
Order No. **20.90 10 33**



SUB-D9
1 × SUB-D9 (socket/socket)
Order No. **20.90 10 34**



SUB-D9; SUB-D9
1 × SUB-D9 (socket/socket);
1 × SUB-D9 (pin/pin)
Order No. **20.90 10 35**



SUB-D9; SUB-D9
2 × SUB-D9 (socket/socket)
Order No. **20.90 10 36**



SUB-D9; SUB-D15
1 × SUB-D9 (socket/pin);
1 × SUB-D15 (socket/pin)
Order No. **20.90 10 37**



SUB-D9; SUB-D15
1 × SUB-D9 (solder connection/socket);
1 × SUB-D15 (solder connection/socket)
Order No. **20.90 10 38**

Commander system accessories

Data Interfaces



SUB-D9; SUB-D15
1 × SUB-D9 (socket/socket);
1 × SUB-D15 (socket/socket)

Order No. **20.90 10 39**



SUB-D9; SUB-D25
1 × SUB-D9 (socket/pin);
1 × SUB-D25 (socket/pin)

Order No. **20.90 10 40**



SUB-D9; SUB-D25
1 × SUB-D9 (solder connection/socket);
1 × SUB-D25 (solder connection/socket)

Order No. **20.90 10 41**



SUB-D9; SUB-D25
1 × SUB-D9 (solder connection/pin);
1 × SUB-D25 (solder connection/socket)

Order No. **20.90 10 42**



SUB-D15; SUB-D15
2 × SUB-D15 (socket/pin)

Order No. **20.90 10 43**



SUB-D15; SUB-D15
2 × SUB-D15 (solder connection/socket)

Order No. **20.90 10 44**



SUB-D15
1 × SUB-D15 (solder connection/socket);
1 × blank cover for SUB-D9

Order No. **20.90 10 45**



SUB-D15; SUB-D25
1 × SUB-D15 (socket/pin);
1 × SUB-D25 (socket/pin)

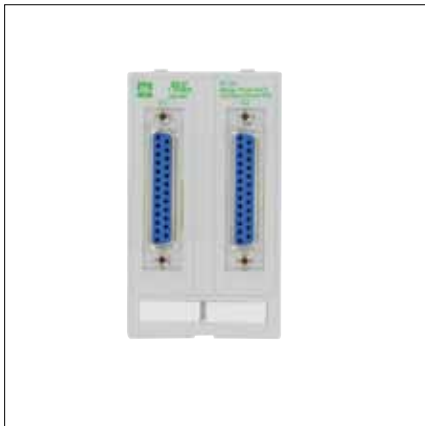
Order No. **20.90 10 46**



SUB-D15; SUB-D25
1 × SUB-D15 (solder connection/socket);
1 × SUB-D25 (solder connection/socket)

Order No. **20.90 10 47**

Data Interfaces



SUB-D25; SUB-D25
2 x SUB-D25 (socket/pin)

Order No. **20.90 10 48**



SUB-D25; SUB-D25
2 x SUB-D25 (solder connection/socket)

Order No. **20.90 10 49**



SUB-D25
1 x SUB-D25 (solder connection/socket);
1 x blank cover for SUB-D9

Order No. **20.90 10 50**



SUB-D25
1 x SUB-D25 (socket/pin);
1 x blank cover for SUB-D9

Order No. **20.90 10 51**



PS2; PS2; SUB-D15 HD
2 x PS2 (6-pole. solder connection);
1 x SUB-D15 HD (socket/pin)VGA

Order No. **20.90 10 52**



PS2; SUB-D15 HD
1 x PS2 (6-pole. solder connection);
1 x SUB-D15 HD (solder connection/socket)(VGA)

Order No. **20.90 10 53**



SUB-D15 HD; RJ45; USB; USB (type A)
1 x SUB-D15 HD (socket/pin);1 x RJ45, 8-pole.
Metal, CAT5e (socket/socket);2 x USB (socket/
socket) type A

Order No. **20.90 10 54**



RJ45; RJ12; USB; USB (type A)
1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
1 x RJ12, 6-pole. Plastic; 2 x USB (socket/socket)
type A

Order No. **20.90 10 55**



RJ45; RJ45; USB; USB (type A)
2 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
2 x USB (socket/socket/0.7 m cable) type A

Order No. **20.90 10 56**

Commander system accessories

Data Interfaces



RJ45; USB (type A); DVI
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A;
 1 x DVI (socket/socket)

Order No. **20.90 10 57**



RJ45; RJ45; USB (type A)
 2 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A

Order No. **20.90 10 58**



RJ45; USB; USB (type A)
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 2 x USB (socket/socket) Type A

Order No. **20.90 10 59**



RJ45; RJ45; USB; USB (type A)
 2 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 2 x USB (socket/socket) Type A

Order No. **20.90 10 60**



RJ45; RJ12; SUB-D25
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x RJ12, 6-pole. plastic; 1 x SUB-D25 (socket/
 pin)

Order No. **20.90 10 61**



RJ45; SUB-D9; SUB-D9
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x SUB-D9 (socket/socket); 1 x SUB-D9 (pin/pin)

Order No. **20.90 10 62**



RJ45; RJ12; SUB-D9
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x RJ12, 6-pole. plastic;
 1 x SUB-D9 (socket/socket)

Order No. **20.90 10 63**



RJ12; RJ12; SUB-D9
 2 x RJ12, 6-pole. plastic;
 1 x SUB-D9 (socket/socket)

Order No. **20.90 10 64**



RJ45; SUB-D9; SUB-D9
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 2 x SUB-D9 (socket/socket)

Order No. **20.90 10 65**

Data Interfaces



RJ45; USB; SUB-D9; SUB-D9
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A;
 2 x SUB-D9 (socket/socket)

Order No. **20.90 10 66**



RJ45; USB; SUB-D9; SUB-D9
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A; 1 x SUB-D9
 (socket/socket); 1 x SUB-D9 (pin/pin)

Order No. **20.90 10 67**



RJ45; SUB-D9; PS2; PS2 (UL)
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x SUB-D9 (pin/pin); 2 x PS2 (socket/socket)

Order No. **20.90 10 68**



RJ45; RJ45
 2 x RJ45, 8-pole. Metal, CAT5e (socket/socket)

Order No. **20.90 10 69**



RJ45
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x blank cover for SUB-D9

Order No. **20.90 10 70**



RJ45; RJ45; RJ45; RJ45
 4 x RJ45, 8-pole. Metal, CAT5e (socket/socket)

Order No. **20.90 10 71**



USB (type A); RJ45
 1 x USB (socket/socket) Type A;
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket)

Order No. **20.90 10 72**



RJ45; SUB-D9
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x SUB-D9 (socket/socket)

Order No. **20.90 10 73**



1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A;
 1 x SUB-D9 (socket/pin)

Order No. **20.90 10 74**

Commander system accessories

Data Interfaces



RJ45; USB (type A); SUB-D9
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A;
 1 x SUB-D9 (socket/socket)

Order No. **20.90 10 75**



RJ45; USB (type A); SUB-D9
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x USB (socket/socket) Type A;
 1 x SUB-D9 (solder connection/socket)

Order No. **20.90 10 76**



PS2; PS2; RJ45
 2 x PS2 (6-pole. solder connection);
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket)

Order No. **20.90 10 77**



RJ45; SUB-D9; PS2; PS2
 1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x SUB-D9 (pin/pin);
 2 x PS2 (6-pole. solder connection)

Order No. **20.90 10 78**



RJ45; RJ45; SUB-D25
 2 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
 1 x SUB-D25 (socket/pin)

Order No. **20.90 10 79**



RJ45; RJ45; SUB-D9
 2 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x SUB-D9 (socket/pin)

Order No. **20.90 10 80**



SUB-D25; SUB-D9; RJ45
 1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
 1 x SUB-D9 (socket/pin);
 1 x SUB-D25 (socket/pin)

Order No. **20.90 10 81**



BNC; SUB-D9; RJ45
 1 x BNC (socket/socket); 1 x RJ45, 8-pole. metal,
 CAT5e (socket/socket); 1 x SUB-D9 (socket/pin)

Order No. **20.90 10 82**



BNC; RJ45; SUB-D9
 1 x BNC (socket/socket); 1 x RJ45, 8-pole. metal,
 CAT5e (socket/socket);
 1 x SUB-D9 (socket/socket)

Order No. **20.90 10 83**

Data Interfaces



USB (type A)
1 x USB (socket/socket) Type A

Order No. **20.90 10 85**



USB (type A); USB (type A)
2 x USB (socket/socket) Type A

Order No. **20.90 10 86**



USB; USB; USB; USB (type A)
4 x USB (socket/socket) Type A

Order No. **20.90 10 88**



RJ45; USB; USB (type A)
1 x RJ45, 8-pole. Metal, CAT5e (socket/socket);
2 x USB (socket/socket/0.7 m Kabel) Type A

Order No. **20.90 10 89**



USB (type A); SUB-D25
1 x USB (socket/socket/0.7 m Kabel) Type A;
1 x SUB-D25 (socket/pin)

Order No. **20.90 10 91**



USB (type A); SUB-D25
1 x USB (socket/socket) Type A; 1 x SUB-D25
(socket/pin)

Order No. **20.90 10 92**



USB (type A); SUB-D9
1 x USB (socket/socket) Type A; 1 x SUB-D9
(solder connection/socket)

Order No. **20.90 10 93**



SUB-D15 HD; RJ45; USB; USB (type A)
1 x SUB-D15 HD (socket/pin);
1 x RJ45, 8-pole. metal, CAT5e (socket/socket);
2 x USB (socket/socket) Bauf. A

Order No. **20.90 10 94**



USB (type A); RJ45
1 x USB (Buchse/Buchse/0.7 m Kabel) Type A;
1 x RJ45, 8-pole. metal, CAT5e (socket/socket)

Order No. **20.90 10 95**

Commander system accessories

Data Interfaces



USB (type A); SUB-D9; RJ45
1 × USB (socket/socket/0.7 m cable) Type A;
1 × SUB-D9 (socket/pin);
1 × RJ45, 8-pole. metal, CAT5e (socket/socket)

Order No. **20.90 10 96**



USB (type A); SUB-D25; RJ45
1 × USB (socket/socket) Type A;
1 × SUB-D25 (socket/pin);
1 × RJ45, 8-pole. metal, CAT5e (socket/socket)

Order No. **20.90 11 00**



USB (type A); SUB-D25; RJ45
1 × USB (socket/socket) Type A;
1 × SUB-D25 (socket/solder connection);
1 × RJ45, 8-pole. metal, CAT5e (socket/socket)

Order No. **20.90 11 01**



USB (type A); SUB-D9; RJ12
1 × USB (socket/socket) Type A; 1 × SUB-D9
(socket/socket); 1 × RJ12, 6-pole. plastic

Order No. **20.90 11 02**

Flap insert:

Plug insert



Germany (VDE)
grey, screw clamps, LED (yellow)

Order No. **20.90 10 24**



France (UTE),
screw clamps

Order No. **20.90 10 26**



Italy (CEI 23-16),
with electric shock protection, screw clamps

Order No. **20.90 10 28**



USA (NEMA 5-15),
screw clamps

Order No. **20.90 10 20**



UK (BS),
with electric shock protection, screw clamps

Order No. **20.90 10 25**



China (CCC),
with electric shock protection, screw clamps

Order No. **20.90 10 22**



Denmark,
spring clamps

Order No. **20.90 10 23**



Switzerland,
spring clamps

Order No. **20.90 10 29**



Australia,
screw clamps

Order No. **20.90 10 21**

Commander system accessories

Schutzkontaktschnittstelle



India (IS 1293),
with electric shock protection, screw clamps

Order No. **20.90 10 27**





- Cabinet system for individual installations of control components, fieldbus modules and other electronics
- Can be combined with control enclosures and industrial PCs
- By default, door at the front, bolted rear panel, other versions optional

Included in delivery

Standard version with door at the front, screwed rear panel, 2 fixed shelves;
Special version customized according to requirements

Technical Data

Enclosure body:

Steel cabinet with door at the front and screwed rear panel

Dimensions: 600 x 1100 x 600 mm (W x H x D)

Paintwork:

Powder coating

Colour:

Body: RAL 7035, light grey

Base, worktop and design elements:

RAL 7043, traffic grey B

Protection class:

IP 65 for door

Industrial Workstation RIW

Base cabinet

RIW 2 Standard version

Order No. **38.03 02 01**



Worktop



Door at the front



Base



Locking system



2 fixed shelves

Base cabinet design variations

RIW 2 Special version according to specification

Order No. 38.03 99 99 8



Door at the front, door at the back



Individual dimensions



Base:
Base with height of 100mm
4 steerable wheels



Mounting plate



Pull-out tray



Locking systems:
Triangular
Square
Double ward
Lock cylinder

Industrial Workstation RIW

Construction

Commander



ComTronic



SL 2000



SL 3000



SL 4000

Connection



GTK electronic / GTN II / GT 48/2:
Base with connecting tube and
coupling



Foot stand turnable



Inclining adapter



Moterm inclining adapter



Foot stand turnable
with adapter plate

Base cabinet



Company _____ Phone _____

Contact _____ Fax _____

Address _____ E-mail _____

Base cabinet

Standard version

Special version

Dimensions (L x W x H) _____ x _____ x _____ mm

Colour

Standard: Middle section RAL 7035, side strips / worktop RAL 7043

Special colours (please specify individually as RAL colours)

Middle section: RAL _____ Side strips: RAL _____ Work plate: RAL _____

Door

Door at the front, door at the back

Door at the front, screwed rear panel

Base

Base, 100 mm in height

Base, individual height _____ mm

Lock types

Triangular

Double ward

Square

Lock cylinder with key

Others _____

Accessories

A3 Wiring diagram pocket

Fixed shelf

Pull-out shelf

Mounting plate

Flange plate with sealing membrane

Interior light with door switch

Filter fan

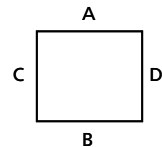
Outlet filter

Number _____

Number _____

Side C Side D

Side C Side D



Commander systems

ComTronic

SL 2000

SL 3000

SL 4000

Connection systems

GTK electronic: foot stand, tube, coupling tube length _____ mm

GT 48/2: foot stand, tube, flange coupling tube length _____ mm

GTN II: foot stand, tube, coupling tube length _____ mm

GTN II: foot stand turnable

GTN II: foot stand turnable with adapter plate

Moterm inclining adjustment

GTN II inclining adapter

GT 48/2 and GTK electronic inclining adapter

Industrial Workstation RIW

Applications





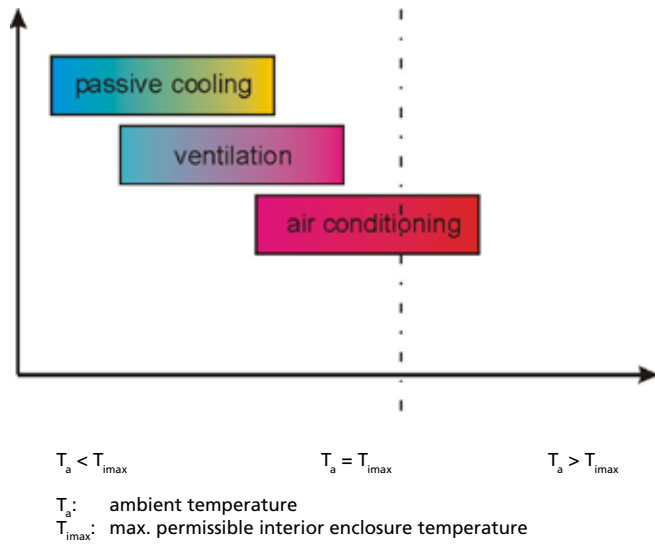
- Climatic systems for ROSE Commander systems, co-ordinated with the application
- Filter ventilators upto 25 m³/h discharge flow
- Compressor cooling systems upto 430 W cooling capacity
- Peltier cooling elements upto 150 W cooling capacity

Included in delivery:

Climatic system depending upon execution completely Commander system

Heat management

Operating and control systems need an enclosure system, which makes an optimal handling possible for the accommodation at the machine in the production process. ROSE offers for this special commander systems. These operating and control systems, usually realized on PC basis, produce a thermal power loss. For the avoidance of the loss of the devices or components and for the securing of the production process air conditioning is necessary. Rose offers here a complete aligned cooling system. With additional heat sinks up to the modern Peltier cooling systems - all options are possible.



For all our Commander systems we offer particularly devised cooling systems to you:



Passive cooling with heat sink rear walls



Active cooling with filter ventilator systems



Active cooling with compressor cooling systems



Active cooling with peltier cooling elements



Filter ventilators with snatching assembly

Application and function

for the ventilation of cabinets, operating and control enclosures.
Two versions: for the electrical connection at 24 V DC and to 230 V AC.
The simple assembly takes place by cutout in door, side wall, rear wall or roof of the enclosure.

Advantages

Generally high protection classification (IP 54) by fin mounting.
Short assembly time by simple snatching assembly.
The ventilator used has UL-, CSA-, VDE- and CE-approvals.

Technical data

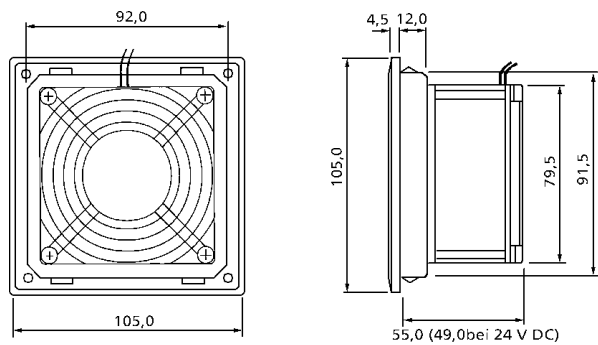
Material	Enclosure: plastic
Ingress protection	IP 54
Nominal voltage	24 V DC / 230 V AC

Product range

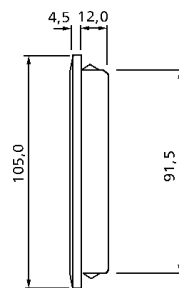
Order No.	Type	Name	Nominal voltage	Discharge flow
83.10 01 01	RLV 100 230 D	Filter ventilator	230 V AC	25 m ³ /h
83.10 01 02	RLV 100 24 D	Filter ventilator	24 V DC	25 m ³ /h
83.10 01 11	RGV 100 D	Exhaust filter		15 m ³ /h

Dimensions

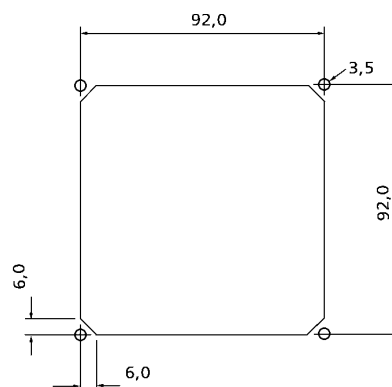
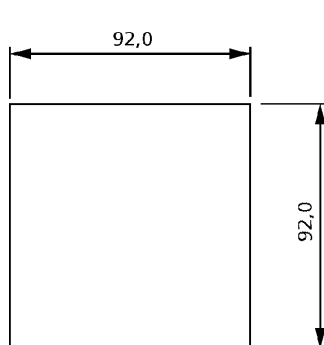
RLV 100 230 D / RLV 100 24 D



RGV 100 D



Mounting cutout



Octagonal cutout and drillings only by screw fastener

Heat management



Mini cooling systems in compressor technology

Application an function

for the active cooling of cabinets, operating and control enclosures.
The simple assembly takes place by cutout in rear wall of the enclosure.

Advantages

This new generation of mini cooling systems provides maximum cooling with minimal space requirements. The maintenance-free cooling systems with 200 to 450 W are designed to operate without filters.

The heat exchanger condenser profile has been optimized using wide aluminium fins and improved air in- and outlets. Collectively, they provide an increased cooling output of 20 %, thus guaranteeing performance for demanding industrial environments.

These mini cooling units can be operated through mini controllers according to operational requirements.

With a depth of only 110 mm the mini cooling units are currently the smallest and most compact built-in mount and side mount units on the market.

Due to the environment there is used the safe refrigerant R134a.

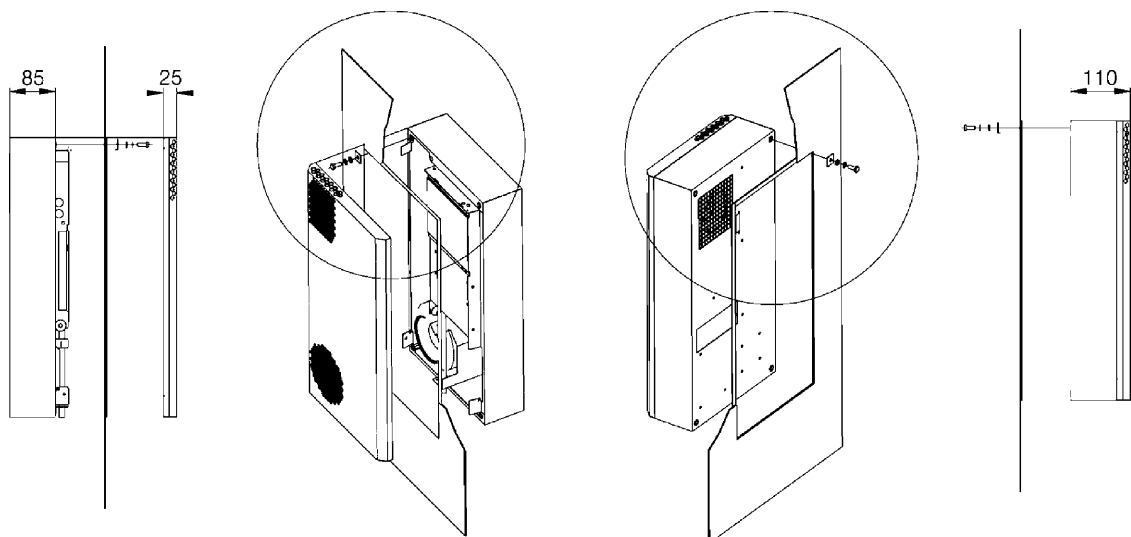
Technical data

Material	Enclosure: sheet steel powdered RAL 7035 optional stainless steel
Ingress protection inside / outside	IP 54 / IP 24
Operating temperature	+20°C to +50°C
Compressor	Cattail compressor
Nominal voltage	230 V AC 50/60 Hz

Product range

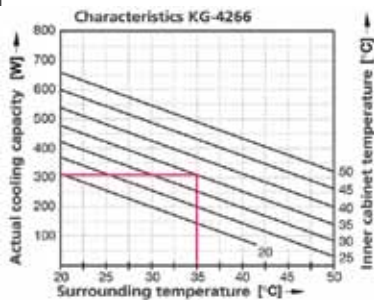
Order No.	Type	Cooling capacity	Dimensions H x W x D (mm)	Nominal voltage	Nominal currenty	Weight (g)
83.10 02 01	RKG-4266	320 W	520 x 270 x 110	230 V AC	1,4 A	13300
83.10 02 02	RKG-4267	400 W	340 x 520 x 110	230 V AC	1,5 A	14800
83.10 02 03	RKG-4268	400 W	520 x 320 x 110	230 V AC	1,5 A	14200
83.10 02 04	RKG-4269	430 W	600 x 320 x 110	230 V AC	1,5 A	16000

Kind of assembly

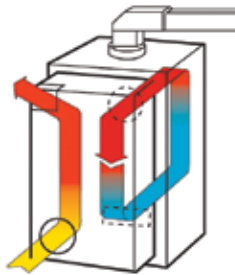


Cooling system RKG-4266

Characteristics



Cooling circuit



Technical data

Cooling capacity DIN 3168:

Cooling capacity L35L35	320 W
Cooling capacity L35L50	140 W

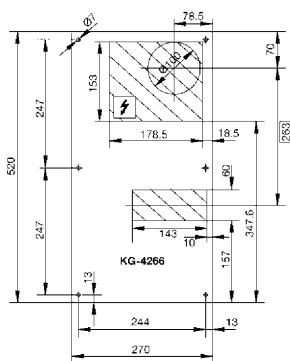
Max. air volume flow:

Ambient air circuit	170 m³/h
Cabinet air circuit	125 m³/h

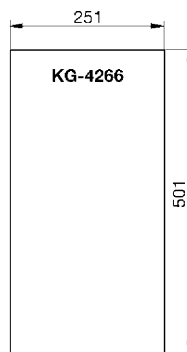
Electrical data:

Nominal voltage	230 V AC
Nominal power	280 W
Nominal current	1,4 A
Rated current	3,2 A
Fuse rating	6 A
Connection	Terminals

Dimensions

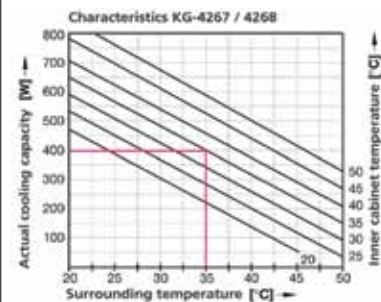


Panel cutout

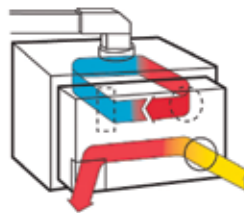


Cooling system RKG-4267

Characteristics



Cooling circuit



Technical data

Cooling capacity DIN 3168:

Cooling capacity L35L35	400 W
Cooling capacity L35L50	150 W

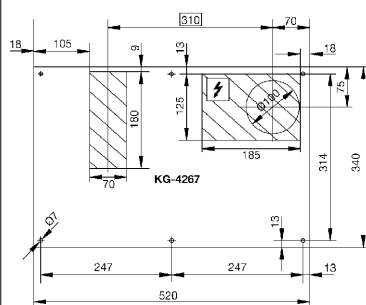
Max. air volume flow:

Ambient air circuit	200 m³/h
Cabinet air circuit	125 m³/h

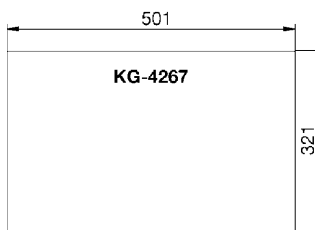
Electrical data:

Nominal voltage	230 V AC
Nominal power	300 W
Nominal current	1,4 A
Rated current	3,2 A
Fuse rating	6 A
Connection	Terminals

Dimensions



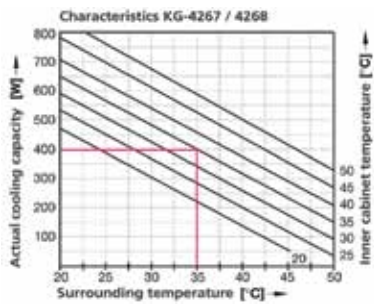
Panel cutout



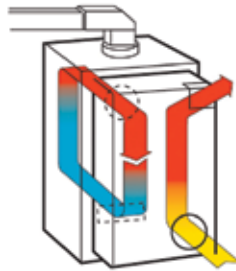
Heat management

Cooling system RKG-4268

Characteristics



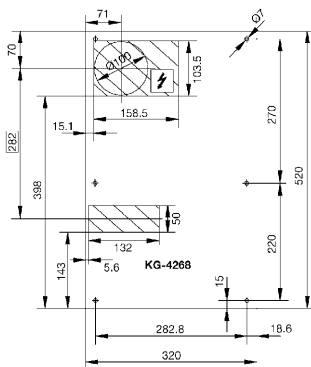
Cooling circuit



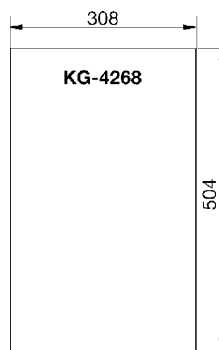
Technical data

Cooling capacity DIN 3168:	
Cooling capacity L35L35	320 W
Cooling capacity L35L50	140 W
Max. air volume flow:	
Ambient air circuit	170 m³/h
Cabinet air circuit	125 m³/h
Electrical data:	
Nominal voltage	230 V AC
Nominal power	280 W
Nominal current	1,4 A
Rated current	3,2 A
Fuse rating	6 A
Connection	Terminals

Dimensions

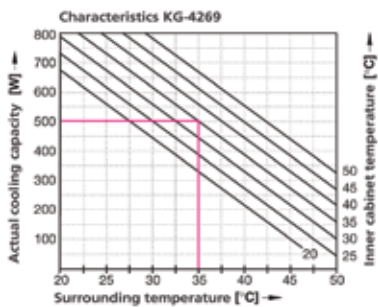


Panel cutout

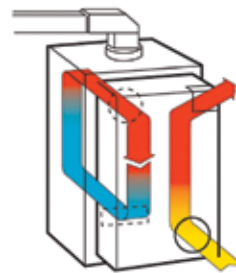


Cooling system RKG-4269

Characteristics



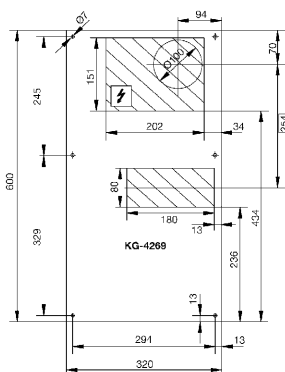
Cooling circuit



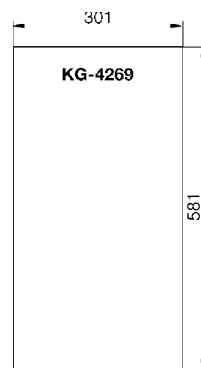
Technical data

Cooling capacity DIN 3168:	
Cooling capacity L35L35	430 W
Cooling capacity L35L50	160 W
Max. air volume flow:	
Ambient air circuit	200 m³/h
Cabinet air circuit	125 m³/h
Electrical data:	
Nominal voltage	230 V AC
Nominal power	280 W
Nominal current	1,4 A
Rated current	3,2 A
Fuse rating	6 A
Connection	Terminals

Dimensions



Panel cutout





Mini cooling systems in Peltier technology

Application and function:

for the active cooling of cabinets, operating and control enclosures, industrial PC's, monitor and flat screen monitor.

3 types in 50, 100 and 150 W cooling capacity are available.

For the electrical connection at 24 V DC. The simple assembly takes place by cutout in door, side wall, rear wall or roof of the enclosure.

Advantages of

Peltier cooling units:

- compact design
- assembly in each position, because the units work without refrigerants
- high efficiency

The Peltier effect

The Peltier effect is a thermoelectrical procedure, where a semiconductor material is used which is caused with appropriate doting by current guidance the change of the energy state by charge carriers and thus used to the transport of heat.

Technical data

Operating temperature	-10°C to +60°C
Nominal current	24 V +6%/-10%
Ingress protection inside / outside	IP 54

Product range

Order No.	Type	Cooling capacity	Nominal voltage	Nominal current	Weight (g)
83.10 03 01	RPK 50	50 W	24 V DC	2,5 A	3900
83.10 03 02	RPK 100	100 W	24 V DC	4,8 A	7200
83.10 03 03	RPK 150	150 W	24 V DC	6,5 A	7300

Computation of the necessary cooling performance:

$$P_k = P_v - k \times A \times T$$

$P_k =$ Necessary cooling performance (W)

$P_v =$ Dissipation loss of built in devices (W)

$k \times A \times T =$ Inner convection of device

$k =$ Thermal transmission coefficient (eg: sheet metal = 5.5 W / m² K)

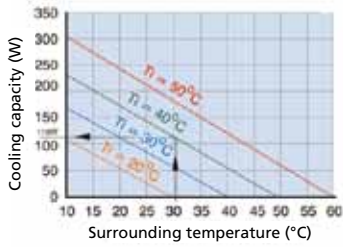
$A =$ Usable enclosure area (m²)

$\Delta T = T_i - T_a =$ Temperature difference between inner and surrounding temperature

Heat management

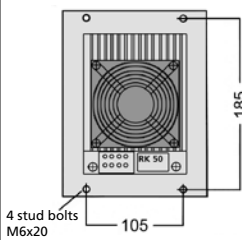
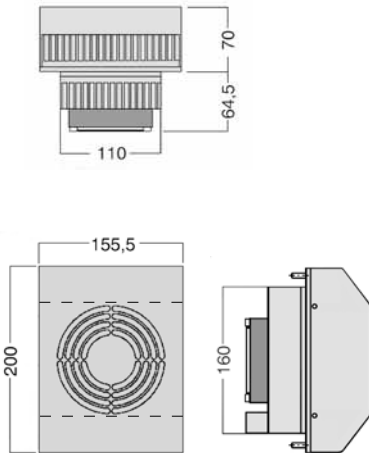
RPK 50

Diagram

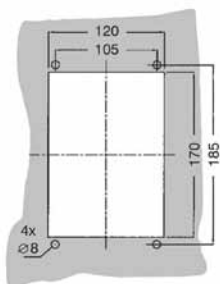


Chose: $P_K = 6 \text{ W/K} \times \Delta T + 50 \text{ W}$
 Example: $T_a = 30^\circ\text{C}$, $T_i = 40^\circ\text{C}$ i.e.: $P_K = 110 \text{ W}$

Dimensions

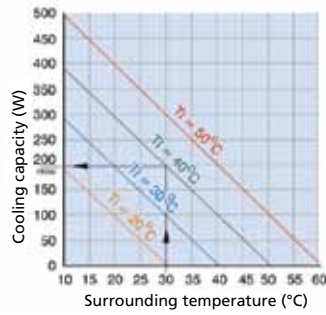


Panel cutout



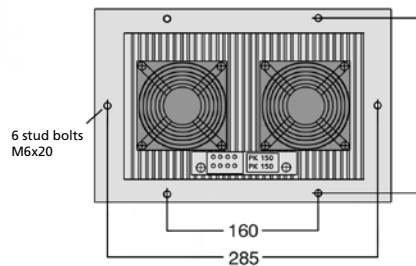
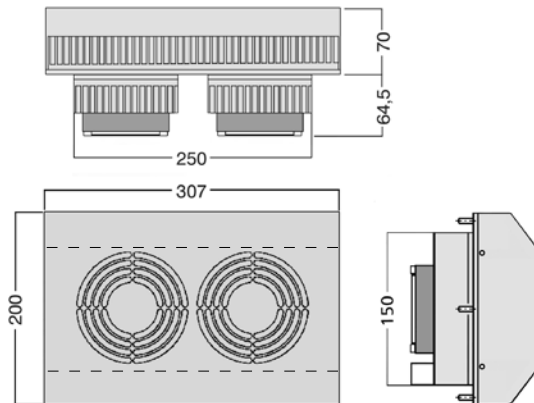
RPK 100

Diagram

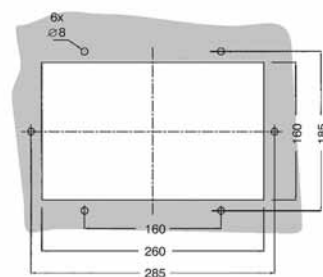


Chose: $P_K = 9,5 \text{ W/K} \times \Delta T + 100 \text{ W}$
 Example: $T_a = 30^\circ\text{C}$, $T_i = 40^\circ\text{C}$ i.e.: $P_K = 195 \text{ W}$

Dimensions

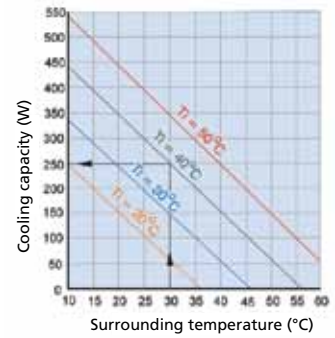


Panel cutout



RPK 150

Diagram



Chose: $P_K = 9,5 \text{ W/K} \times \Delta T + 150 \text{ W}$
 Example: $T_a = 30^\circ\text{C}$, $T_i = 40^\circ\text{C}$ i.e.: $P_K = 245 \text{ W}$



- Industrial suspension system for control enclosures
- Modular construction with free accessible cable channel
- Wall, top-mounting or floor fixing

Technical data

Material:

Connecting tube: DIN EN 573 EN AW-ALMgSi

Components: DIN EN 1706 EN AC-ALSi12 (Fe)

Cover profile: TPE

Seal:

CR and/or PU seal

Painting:

Powder coating

Colour:

Aluminium parts: RAL 7035, light grey

Cover profile: RAL 9005, jet black

Ingress protection:

IP 54 to EN 60529

Free cable passage:

Connecting tube: 18 mm opening












System components: 53 mm

Included in delivery:

Individual system components incl. cable channel covering and assembly materials

GTK electronic

Product range

		Order No.	Weight (g)
Top mounted joint		49.45 66 00	2350
Foot stand		49.45 72 00	800
Wall hinge W		49.45 70 00	3250
Angle		49.45 71 00	720
Coupling		49.45 73 00	1100
Coupling GTKe-PRO		49.45 73 02	1300
Flange coupling		49.45 77 00	1500
Angle coupling		49.45 75 00	1140
Angle coupling GTKe-PRO		49.45 75 02	1300
Flange angle coupling		49.45 78 00	1330
Spar cover profile 2,5 m		49.45 69 00	600
Flat panel adapter		49.45 90 01	1400
Adapter plate GTKe-PRO		49.45 00 01	200

Aluminium profile, max. outreach 1.5 m

	Order No.	Weight (g)
Connecting tube		
Standard length: 0.5 m	49.45 10 01	1650
Standard length: 1 m	49.45 10 02	3250
Standard length: 2 m*	49.45 10 03	7000
Variable length (please specify)		

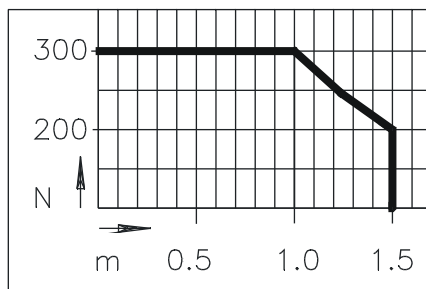
* without threaded hole

Can be adapted to elements from the GT 48/2 range*

	Order No.	Weight (g)
Console flange 30°	49.49 76 00	400
Adapter flange	49.49 79 00	1500
Inclination adapter	49.49 80 00	800

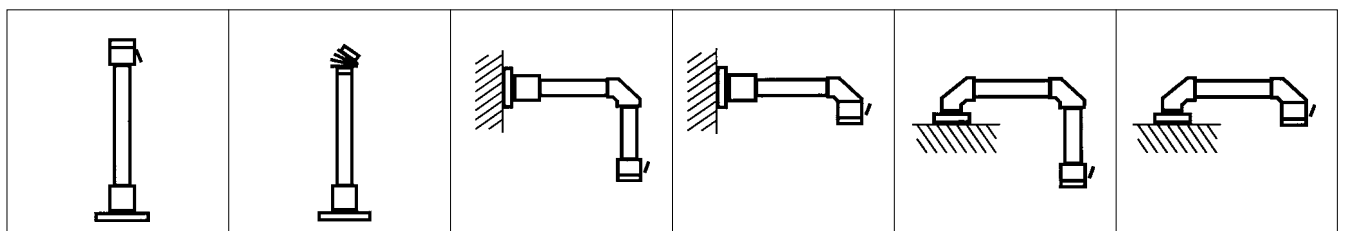
* Special colour RAL 7035, please specify when ordering.

Load diagram



Note: the vertical length of the profile is responsible for the load of the complete suspension system (lever arm!). Further information for this on request. The values in the above load diagram are guilty to an execution hanging or standing. The declarations of weight are a summary from installation weight, Commander and all components and tubes between Commander and angle.

Added system elements

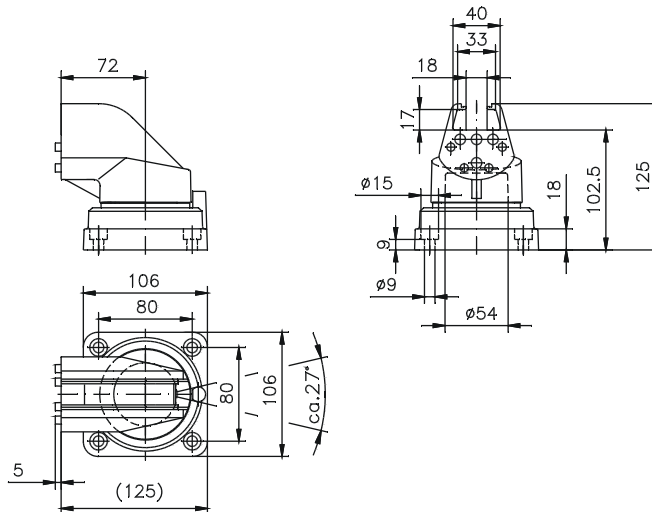




Top-mounted joint

Cast aluminium with steel inner tube and flange mounting.
Swivelling range 330° (cannot be limited or stopped)

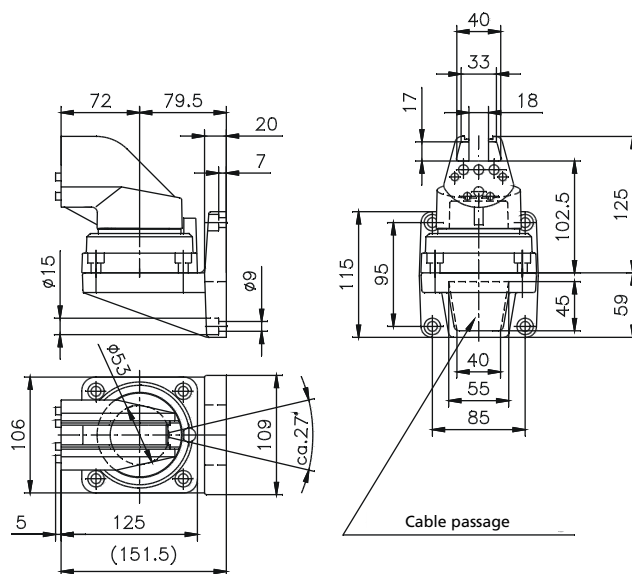
Order No. **49.45 66 00**



Wall hinge

Cast aluminium with steel inner tube and plain bearing
Swivelling range 330° (cannot be limited or stopped)

Order No. **49.45 70 00**

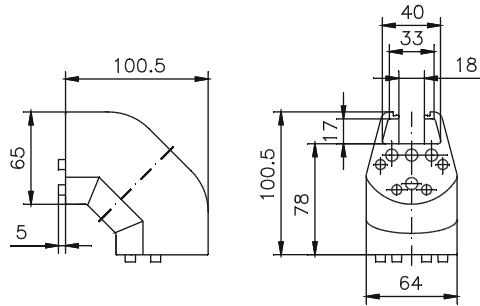




Angle

Cast aluminium, angle 90°, for GT system, can be used from above

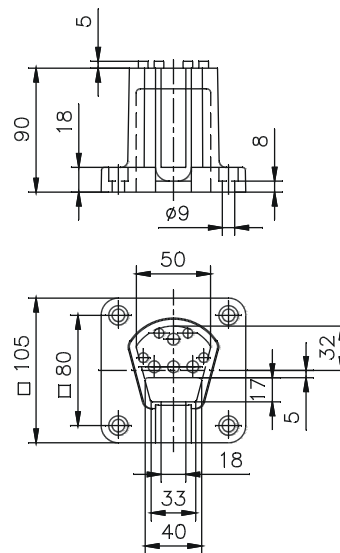
Order No. **49.45 71 00**



Foot stand

Cast aluminium, fixed version

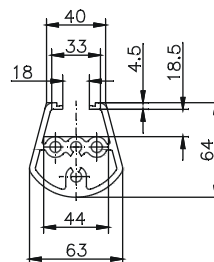
Order No. **49.45 72 00**



Connecting tube

Aluminium extruded profile each with 2.5 m long plastic cover profile.

Order No.	Length	Weight (g)
49.45 10 01	0,5 m	1650
49.45 10 02	1 m	3250
49.45 10 03	2 m	7000

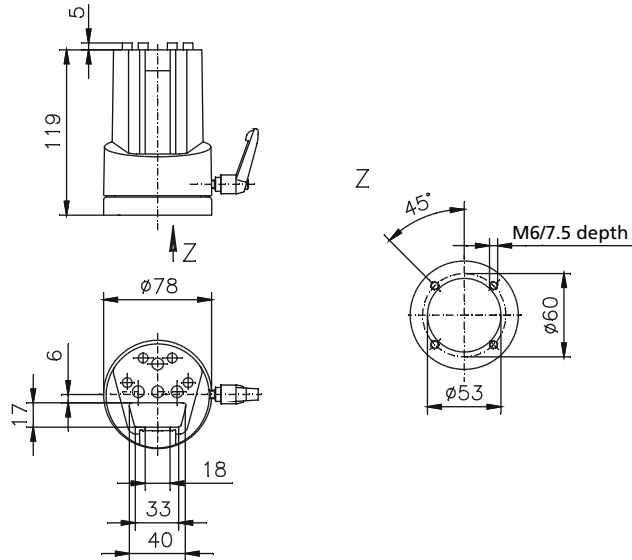




Coupling

Cast aluminium with steel inner tube. Coupling assembled from inside of enclosure, connection not visible from the outside.
Swivelling range 290° can be stopped at any point via clamping lever (swivelling range cannot be limited)

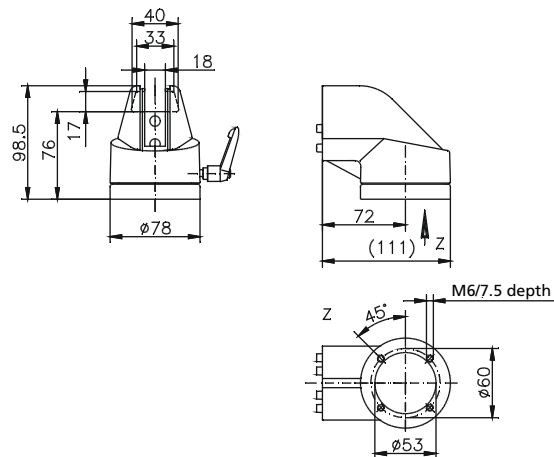
Order No. **49.45 73 00**



Angle coupling

Combination of angle and coupling for horizontal tube exit. Cast aluminium with steel inner tube.
Coupling assembled from inside of enclosure, connection not visible from the outside.
Swivelling range 290° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.45 75 00**





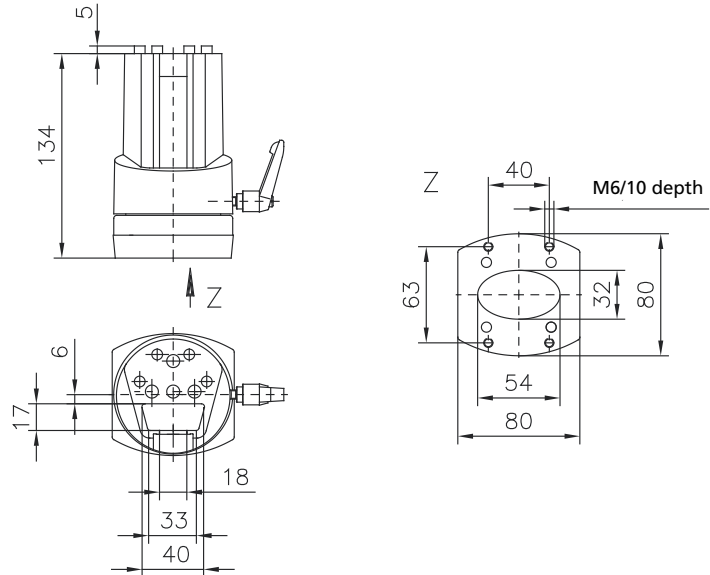
Coupling for Siemens Pro

für Direktanbindung an Siemens Pro-Geräte

Cast aluminium with steel inner tube. Coupling assembled from inside of enclosure, connection not visible from the outside.

Swivelling range 290° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.45 73 02**



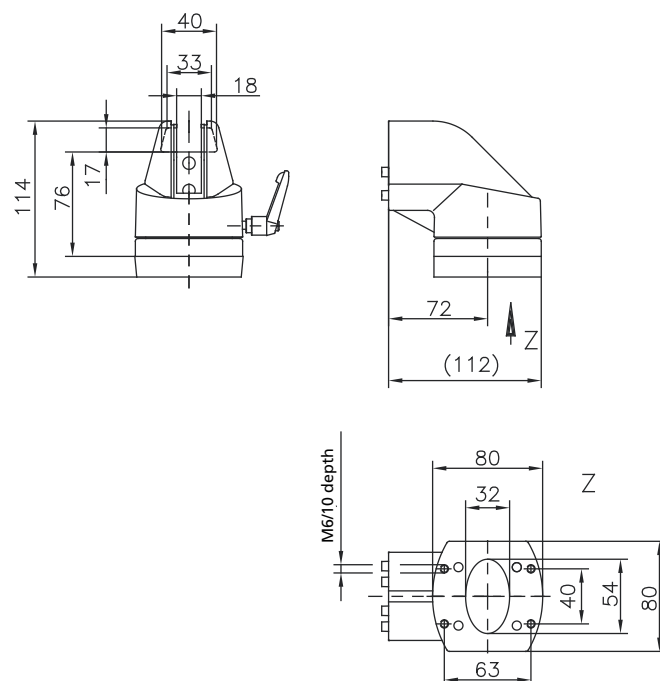
Angle coupling Siemens Pro

für Direktanbindung an Siemens Pro-Geräte

Combination of angle and coupling for horizontal tube exit. Cast aluminium with steel inner tube. Coupling assembled from inside of enclosure, connection not visible from the outside.

Swivelling range 290° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.45 75 02**

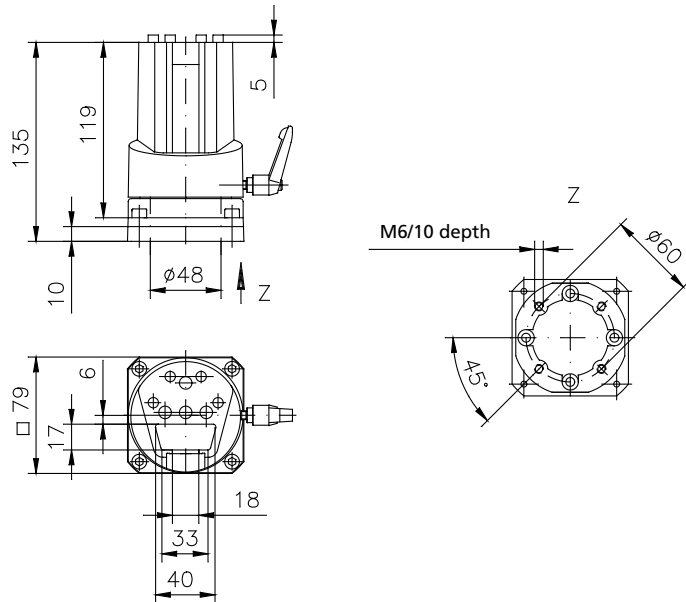




Flange coupling

Cast aluminium with steel inner tube. Coupling assembled from outside with flange, connection visible from the outside. Swivelling range 290° can be stopped at any point via clamping lever (swivelling range cannot be limited)

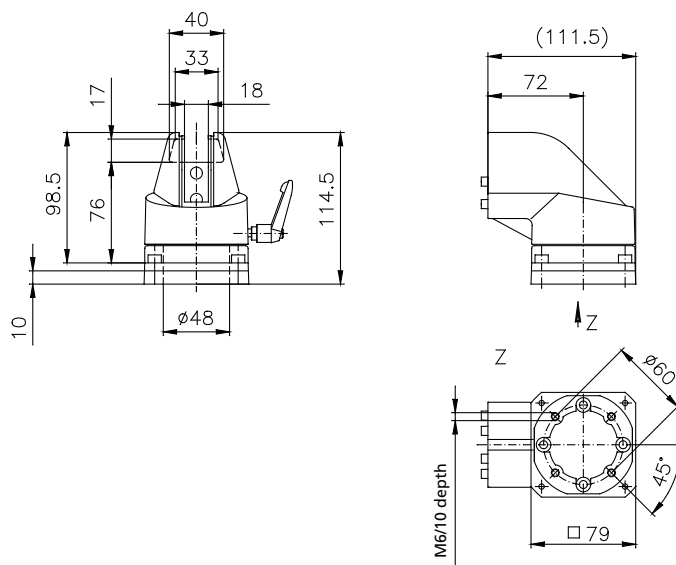
Order No. **49.45 77 00**



Angle flange coupling

Combination of angle and coupling for horizontal tube exit. Cast aluminium with steel inner tube. Coupling assembled from outside with flange, connection visible from the outside. Swivelling range 290° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.45 78 00**

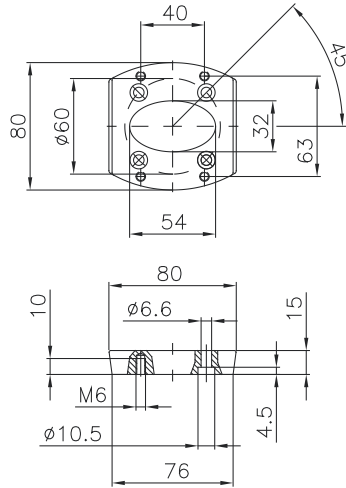




Adapter plate GTKe-Pro

Adapter plate for connecting GTK electronic components with Siemens Pro command units (not necessary for coupling GTKe Pro and angle coupling GTKe Pro)

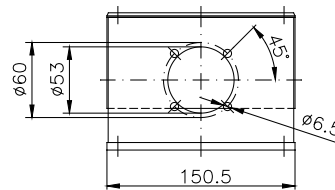
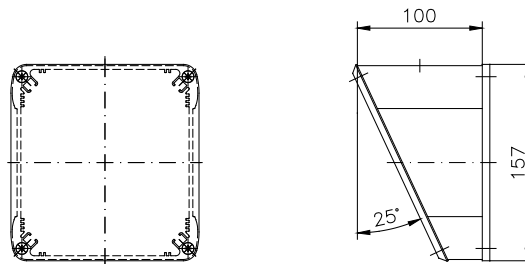
Order No. **49.45 00 01**



Flat panel adapter

Aluminium profile system for rear connection of GT 48/2 / GTK electronic to flat panels. RAL 7035, light grey

Order No. **49.45 90 01**





- Aluminium profile suspension system for light/medium loads up to 30 kg
- Combined with all Commander systems
- Standardly adjustable solution for individual loads

Included delivery:

System individual components incl. cable duct cover and assembly material.

Technical data

Material:

Connecting tube: DIN EN 573 EN AW-ALMgSi

Components: DIN EN 1706 EN AC-AISI 12 (Fe)

Seal:

CR- and/or PU-foam

Painting:

Powder coating

Colour:

Tube, components: RAL 7035, light grey

Ingress protection:

IP 54 to EN 60529













Free cable passage:

Connecting tube: 53 x 19 mm

System components: 53 x 19 mm

GTS

Product range

		Order No.	Weight (g)
GTS Top mounted joint		49.44 66 00	1300
GTS Foot stand		49.44 72 00	820
GTS Wall hinge W		49.44 70 00	2160
GTS Angle		49.44 71 00	800
GTS Angle GTN II / GTS		49.47 71 44	
GTS Coupling		49.44 73 00	560
GTS Flange coupling		49.44 77 00	800
GTS Angle coupling		49.44 75 00	1240
GTS Flat panel adapter		49.44 90 01	1400
GTS Foot stand turnable		49.44 72 21	800
GTS Inclining adapter		49.44 80 00	800
GTS Coupling Siemens PRO		49.44 73 02	800
GTS Angle coupling Siemens PRO		49.44 75 02	1500
GTS Adaption plate Siemens Pro		49.44 00 01	200

Aluminium profile, maximum outreach 1.5 m

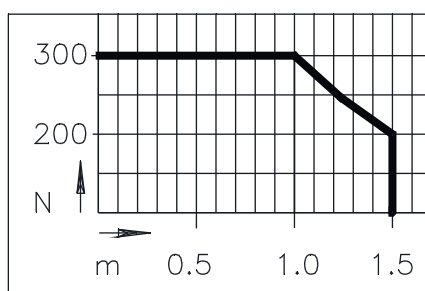
Connecting tube, RAL 7035	Order No.	Weight (g)
GTS profile 0.5 m	49.44 10 01	1550
GTS profile 1 m	49.44 10 02	3100
GTS profile 2 m*	49.44 10 03	6200
Variable length (please specify)	49.44 10 99	

Aluminium profile, maximum outreach 1.5 m

GTS profile anodized 0.5 m	49.44 11 01	1550
GTS profile anodized 1 m	49.44 11 02	3100
GTS profile anodized 2 m*	49.44 11 03	6200
GTS profile anodized variable length (please specify)	49.44 99 99	

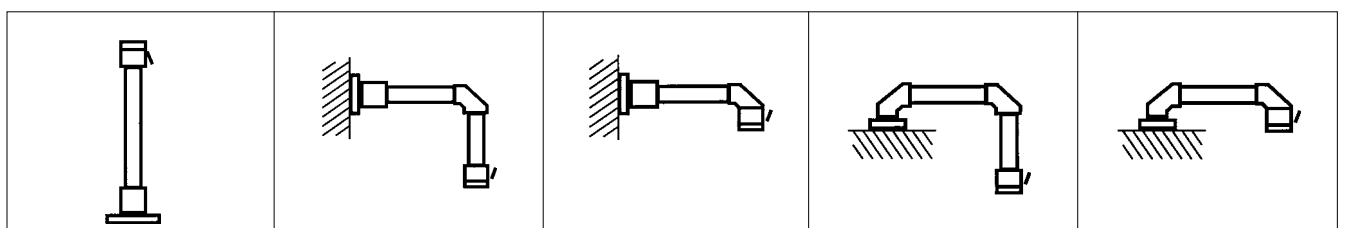
* without threaded hole

Load diagram



Note: the vertical length of the profile is responsible for the load of the complete suspension system (lever arm!). Further information for this on request. The values in the above load diagram are guilty to an execution hanging or standing. The declarations of weight are a summary from installation weight, Commander and all components and tubes between Commander and angle.

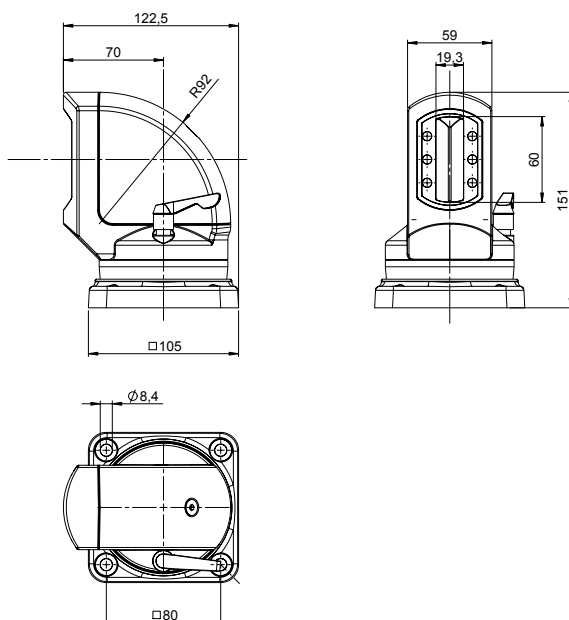
Added system elements





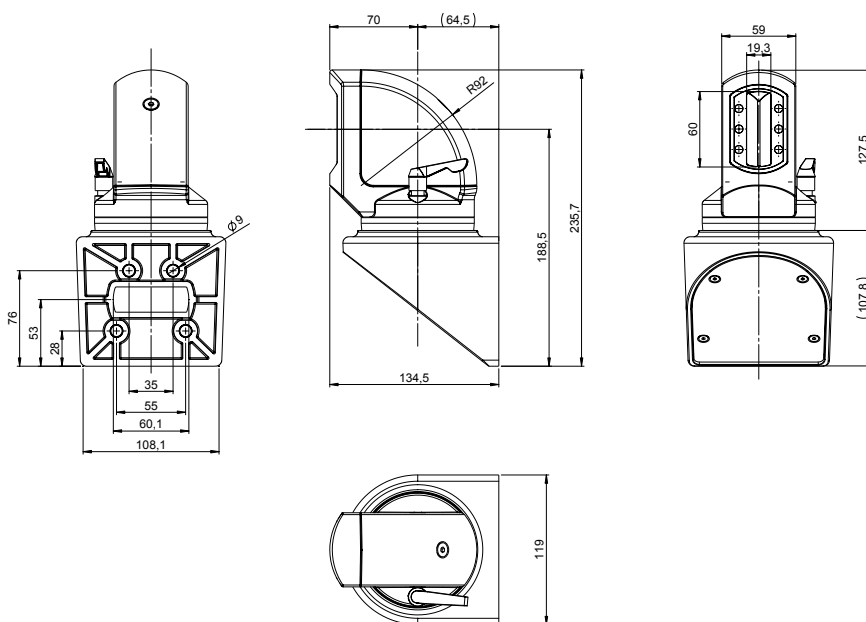
GTS Top-mounted joint
Cast aluminium with flange mounting.
Swivelling range 330°

Order No. **49.44 66 00**



GTS Wall hinge
Cast aluminium with plain bearing
Swivelling range 330°

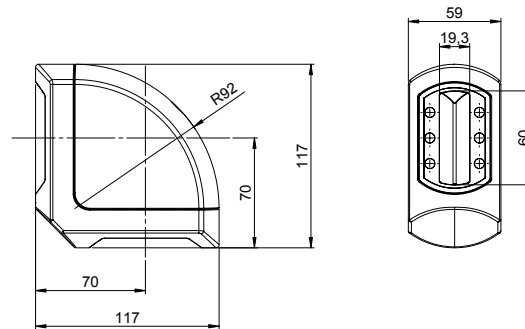
Order No. **49.44 70 00**





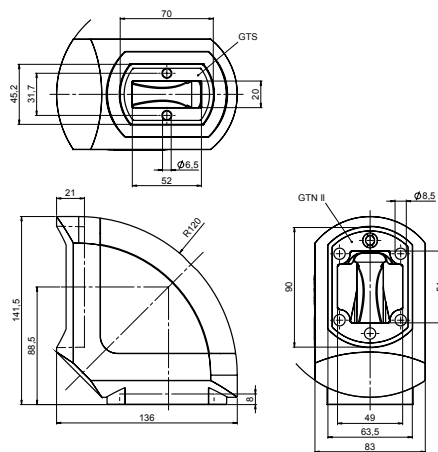
GTS Angle
Cast aluminium, angle 90°

Order No. **49.44 71 00**



GTS Angel GTN II / GTS
for combination GTN II and GTS

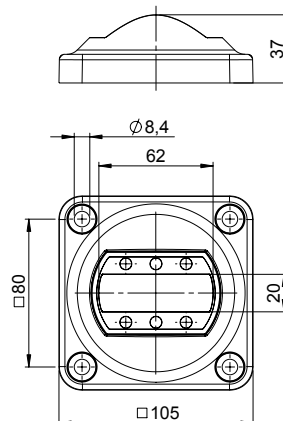
Order No. **49.47 71 44**



GTS Foot stand

Cast aluminium, fixed version, zur Bodenbefestigung oder Wandbefestigung mit starrem Abgang

Order No. **49.44 72 00**

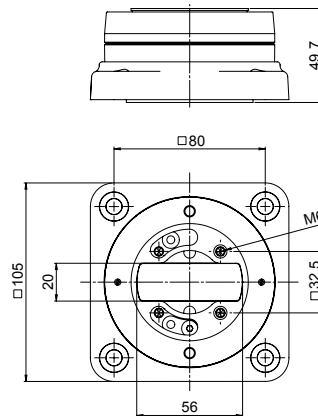




GTS Foot stand pivotable

Diecast aluminium with adjustable stop for direct connection onto machine and command unit

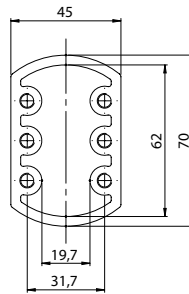
Order No. **49.44 72 21**



GTS Profile, RAL 7035

Aluminium extrusion profile

Order No.	Length
49.44 10 01	0.5 m
49.44 10 02	1 m
49.44 10 03	2 m
49.44 10 99	variable length (please specify)

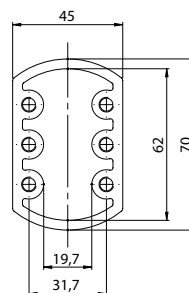


GTS Profile anodized

Aluminium extrusion profile

Suggestion: Order components (Coupling, angle, etc.) in RAL 9007

Order No.	Length
49.44 11 01	0.5 m
49.44 11 02	1 m
49.44 11 03	2 m
49.44 99 99	variable length (please specify)



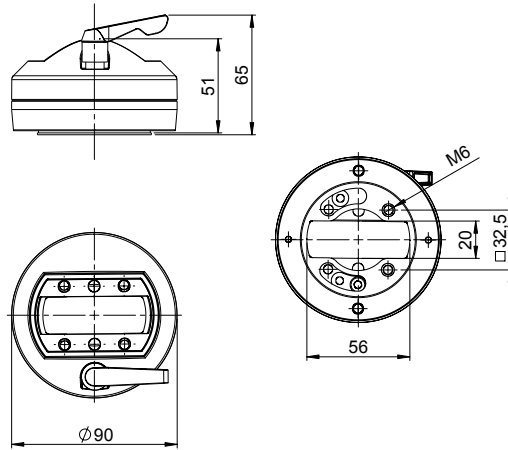


GTS Coupling

Cast aluminium. Coupling assembled from inside of enclosure, connection not visible from the outside.

Swivelling range until 330° adjustable via clamping lever (swivelling range cannot be adjusted)

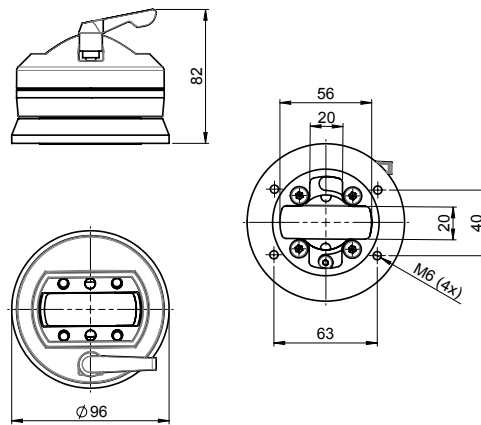
Order No. **49.44 73 00**



GTS Coupling Siemens PRO

For direct connecting of Siemens PRO command units. Diecast aluminium, coupling mounting onto Siemens base adaption, swivel range 330°, infinitely lockable by clamping lever.

Order No. **49.44 73 02**

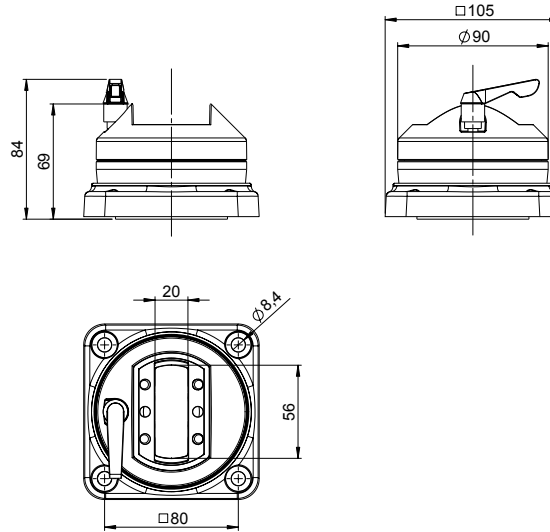




GTS Flange coupling

Cast aluminium. Coupling assembled from outside with flange, connection visible from the outside. Swivelling range until 330° adjustable via clamping lever (swivelling range cannot be adjusted)

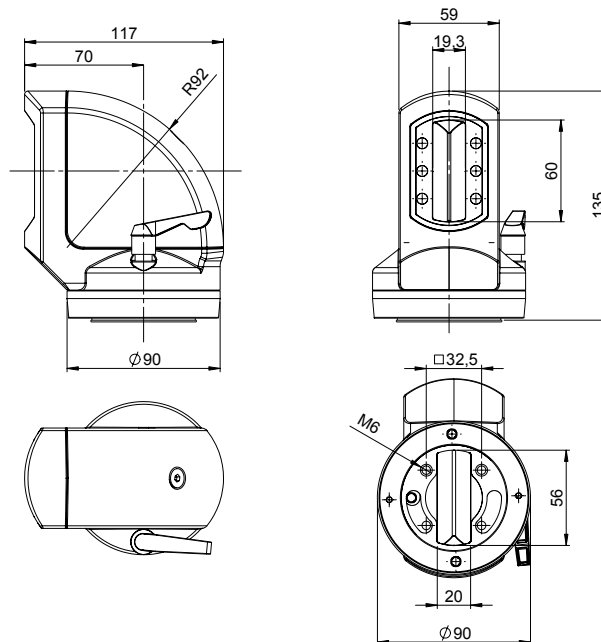
Order No. **49.44 77 00**



GTS Angle coupling

Combination of angle and coupling for horizontal tube exit. Cast aluminium. Coupling assembled from inside of enclosure, connection not visible from the outside. Swivelling range until 330° adjustable via clamping lever (swivelling range cannot be adjusted)

Order No. **49.44 75 00**

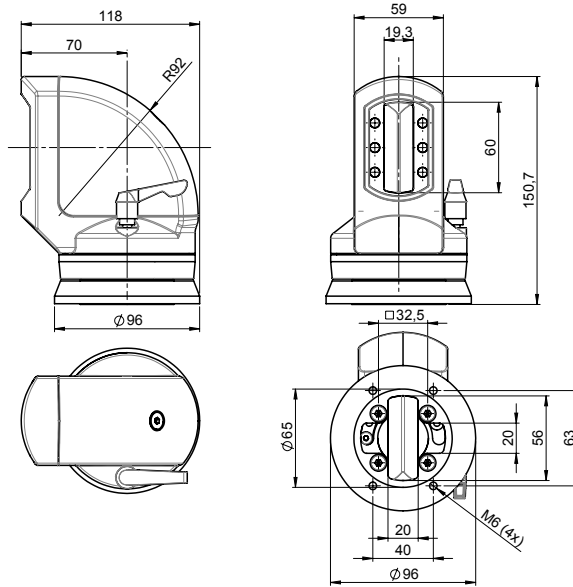




GTS angle coupling Siemens PRO

For direct connecting of Siemens PRO command units. Diecast aluminium, coupling mounting onto Siemens baseadaption, swivel range 330°, infinitely lockable by clamping lever.

Order No. **49.44 75 02**



GTS adapter plate Siemens PRO

For connecting GTS system components (e.g. inclining adapter) with Siemens PRO command units. With GTS coupling Siemens PRO and GTS angle coupling Siemens Pro not necessary (included in delivery)

Order No. **49.44 00 01**



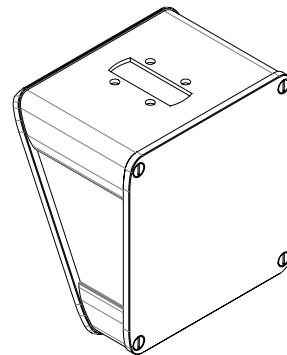
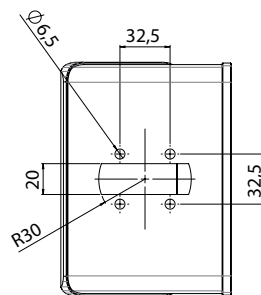
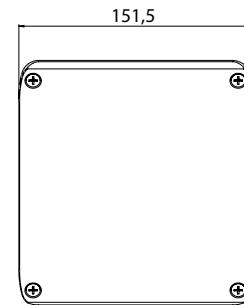
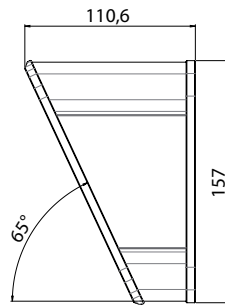
Inclining adapter GTS

Aluminium diecast element with bellows and gasket. Inclining range from 0° to 45° continuously adjustable. Fixing with screws between enclosure and coupling.

Order No. **49.44 80 00**

**Flat panel adapter**

Aluminium profile system for rear connection of GTS to flat panels. RAL 7035, light grey

Order No. **49.44 90 01**

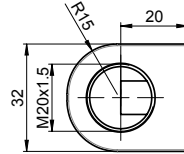
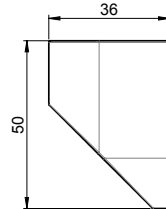
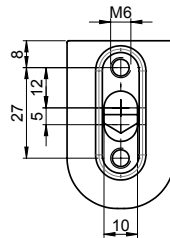
Signal light adaptation



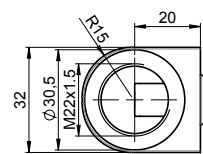
Base connection element for suspension systems, command units and cabinets

Signal light adaptation with thread M20x1.5 mm
Order No. **49.00 01 01**

Signal light adaptation with thread M22x1.5 mm
Order No. **49.00 01 02**



49.00 01 01



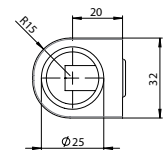
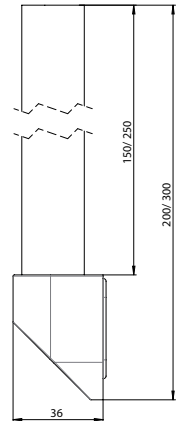
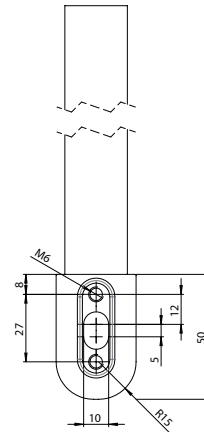
49.00 01 02



Base connection element for suspension systems, command units and cabinets

Signal light adaption with tube \varnothing 25 mm

Order No. **49.00 01 03** (L = 250 mm)
49.00 01 04 (L = 150 mm)





- Design aluminium suspension system
- Closed profile system / profile with free accessible cable duct
- Can be combined with all control enclosures

Included delivery:

System individual components incl. cable duct cover and assembly material.

Technical data

Material:

Connecting tube: DIN EN 573 EN AW-AlMgSi
 Components: DIN EN 1706 EN AC-AISI 12 (Fe)
 Cover profile: plastic TPE

Seal:

CR and/or PU foam

Painting:

Powder coating

Colour:

Tube, components: RAL 7035, light grey
 Cover profile: RAL 9005, jet black

Ingress protection:






















IP 54 to EN 60529

Free cable passage:

Connecting tube:
 open 27 x 32 mm
 closed 51 mm diameter
 System components: 51 mm diameter

GTN II

Product range

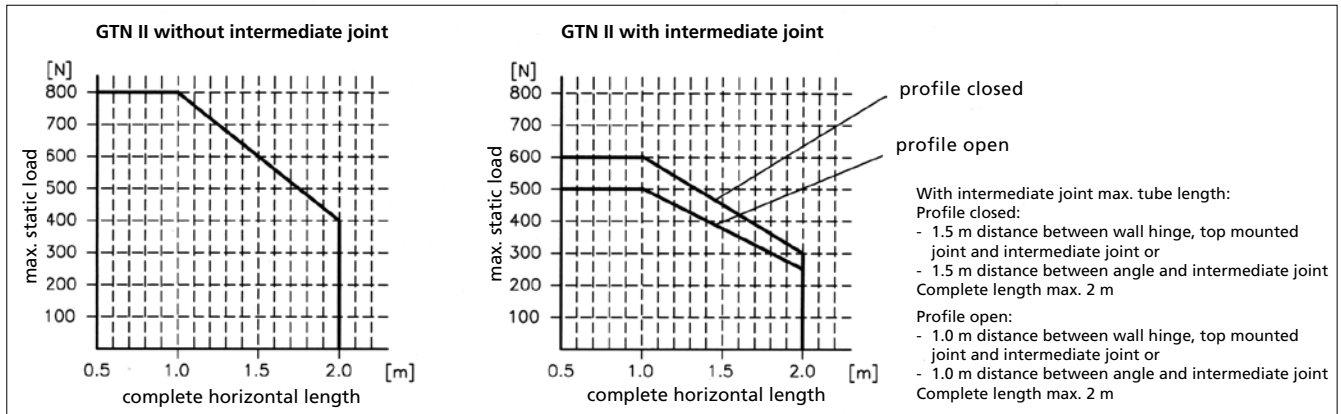
		Order No.	Weight (g)
Top mounted joint		49.47 66 00	3900
Top mounted joint light*		49.47 66 01	3900
Top mounted joint (ceiling mounting)		49.47 66 20	3900
Wall hinge		49.47 70 00	4200
Wall hinge light*		49.47 70 01	4200
Wall hinge, hanging		49.47 70 20	4200
Angle		49.47 71 00	900
Angle GTN II / GTK electronic		49.47 71 45	900
Angle GTN II / GTS		49.47 71 44	900
Coupling		49.47 73 00	1500
Coupling GTN II-PRO		49.47 73 02	2400
Coupling fixed		49.47 73 03	
Angle coupling		49.47 75 00	2500
Angle coupling GTN II-PRO		49.47 75 02	2900
Intermediate joint "Z"		49.47 67 00	3800
Intermediate joint "Z" light*		49.47 67 01	3800
Intermediate joint "S"		49.47 67 02	6000
Intermediate joint "S" light*		49.47 67 03	3800
Foot stand fixed		49.47 72 00	1000
Turnable foot stand with adapter plate		49.47 72 20	3300
Turnable foot stand		49.47 72 21	1700
Turnable foot stand light*		49.47 72 22	3400
Console flange 15°		49.47 76 00	1100
Column, length max. 2.0 m (please specify individual length)		49.47 00 04	individual length
Flat panel adapter		49.47 90 01	3000
Spare cover profile 2.5 m		49.45 69 00	600
Adjustment set		49.47 00 06	100
Inclining adapter		49.47 80 00	1800
Adapter plate GTN II-PRO		49.47 00 01	400

* light: can be used for control units with low load (up to 30 kg/2 m) with lower swivel force.

Aluminium profile	Profile open	Weight (g)	Profile closed	Weight (g)
Standard length: 0.5 m	49.47 10 01	3000	49.47 20 01	2850
Standard length: 1 m	49.47 10 02	6000	49.47 20 02	5700
Standard length: 2 m	49.47 10 03	12000	49.47 20 03	11400
Variable length (please specify)	49.47 10 99		49.47 20 99	

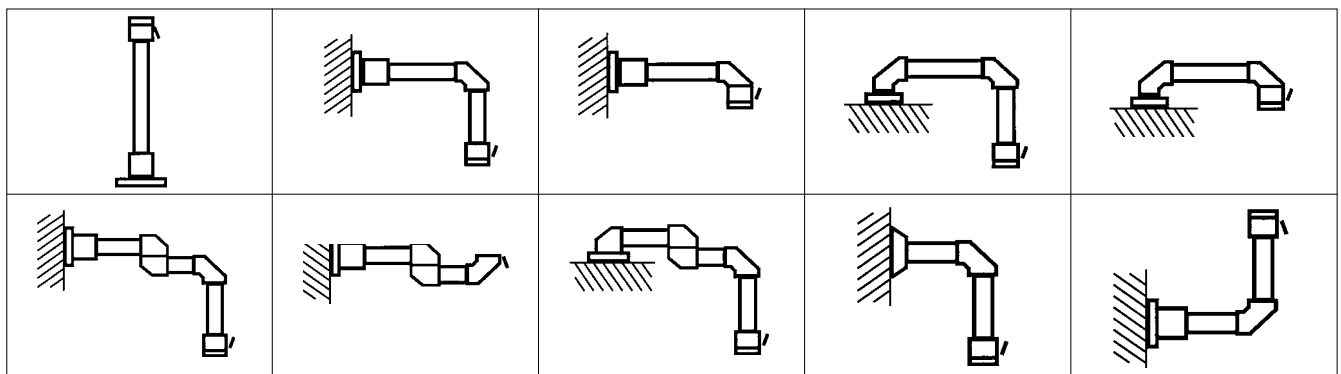
Profile anodized		
Standard length: 0.5 m	49.47 11 01	49.47 21 01
Standard length: 1 m	49.47 11 02	49.47 21 02
Standard length: 2 m	49.47 11 03	49.47 21 03
Variable length (please specify)	49.47 11 99	49.47 21 99

Load diagram



Note: the vertical length of the profile is responsible for the load of the complete suspension system (lever arm!).
 Further information for this on request. The values in the above load diagram are guilty to an execution hanging or standing.
 The declarations of weight are a summary from installation weight, Commander and all components and tubes between Commander and angle.

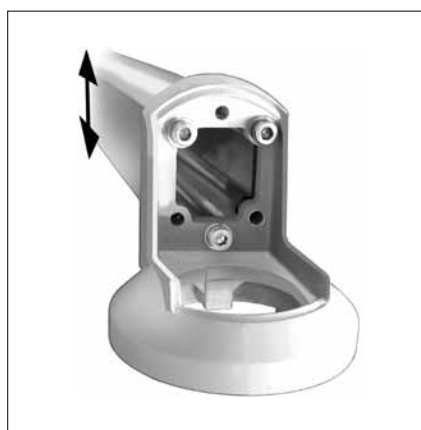
System assembly



Highlights



Fastening bar „Red Bar“



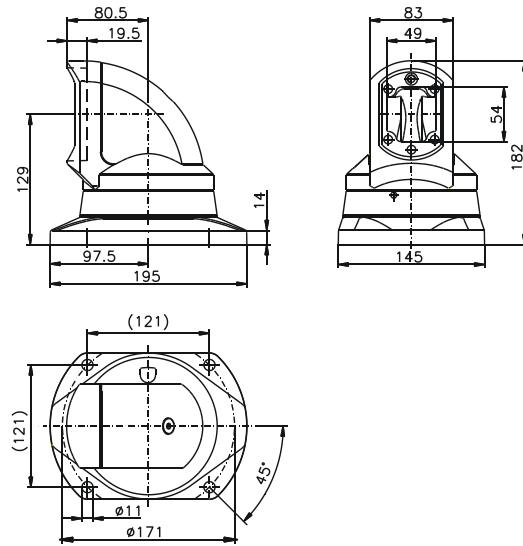
Adjustment possibility with different loads

GTN II



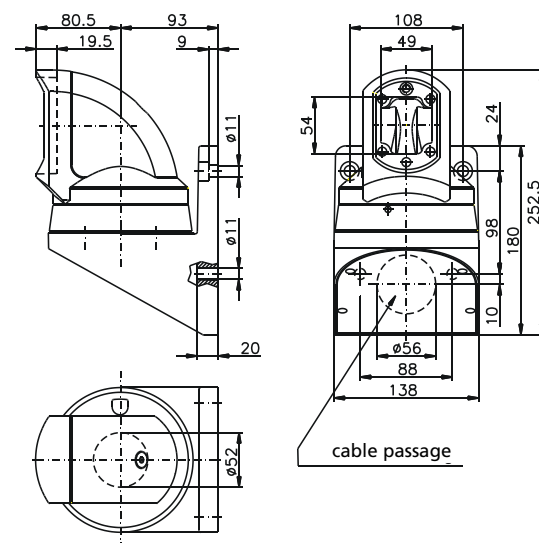
Top mounted joint
Diecast aluminium, swivel range 310°

Order No.	
49.47 66 00	GTN II
49.47 66 01	GTN II light



Wall hinge
Swivel range 230°

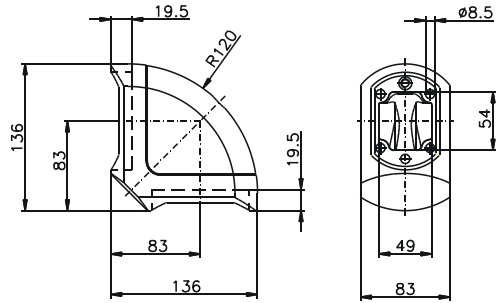
Order No.	
49.47 70 00	GTN II
49.47 70 01	GTN II light
49.47 70 20	GTN II hinged





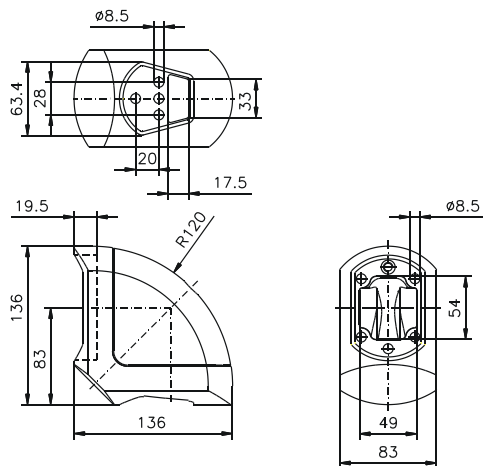
Angle GTN II
Diecast aluminium, angle 90°, incl. lid

Order No. **49.47 71 00**



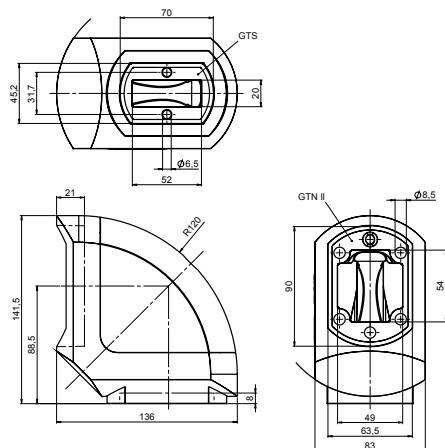
Angle GTN II / GTK electronic
To combine GTN II and GTK electronic

Order No. **49.47 71 45**



GTS Angle GTN II / GTS
To combine GTN II and GTS

Order No. **49.47 71 44**

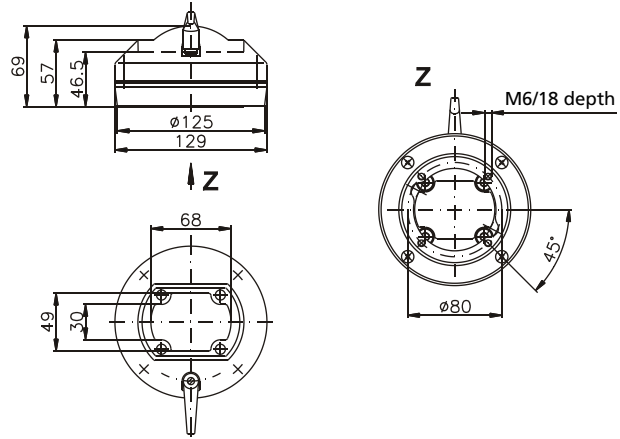




Coupling

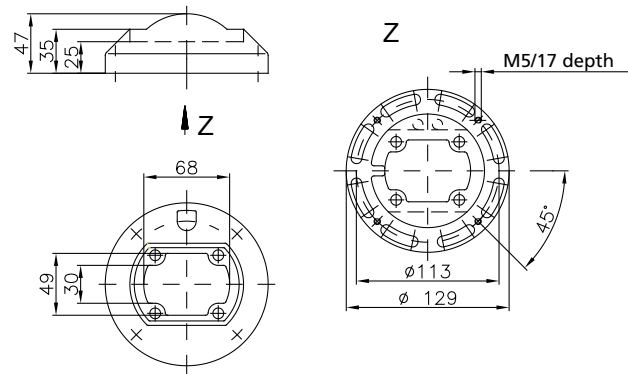
Diecast aluminium, coupling mounting from inner side of enclosure, screws outside not viewable, swivel range 330°, continuously variable by release handle.

Order No. **49.47 73 00**



Coupling fixed

Order No. **49.47 73 03**

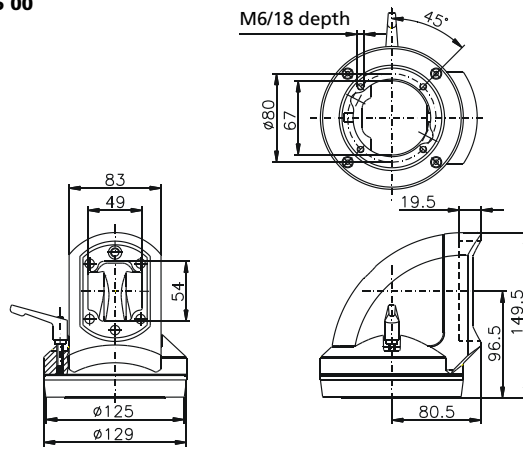




Angle coupling

Diecast aluminium, coupling mounting from inner side of enclosure, swivel range 320°, continuously variable by release handle

Order No. **49.47 75 00**



Intermediate joint

Diecast aluminium, swivel range 310°

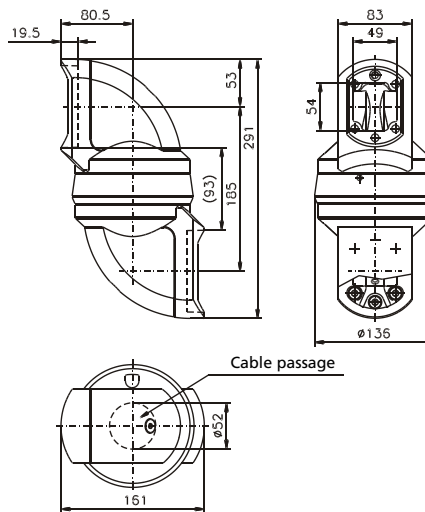
Order No.

49.47 67 00 GTN II "Z"

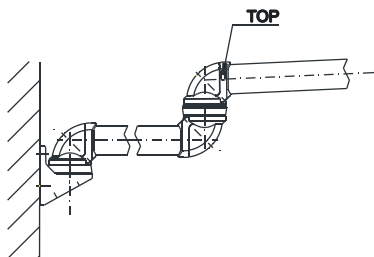
49.47 67 01 GTN II "Z" light

49.47 67 02 GTN II "S"

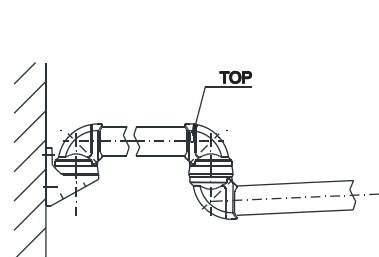
49.47 67 03 GTN II "S" light



Intermediate joint S-Type



Intermediate joint Z-Type

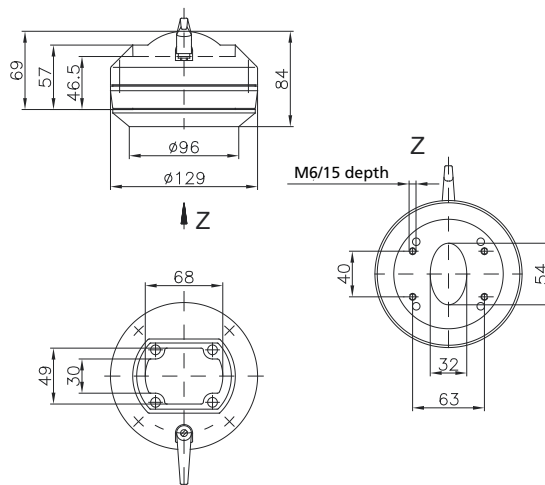




Coupling GTN II-PRO

for direct connecting of Siemens Pro command units
 Diecast aluminium, coupling mounting from inner side of enclosure, screws outside not viewable, swivel range 330°, continuously variable by release handle.

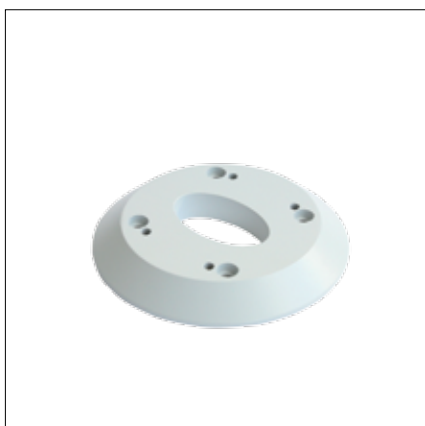
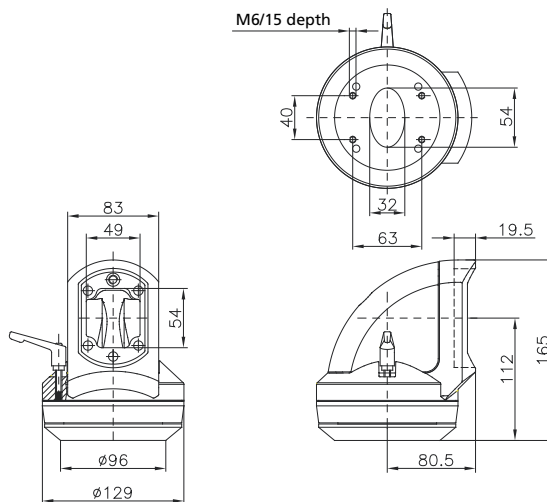
Order No. **49.47 73 02**



Angle coupling GTN II-PRO

for direct connecting of Siemens Pro command units
 Diecast aluminium, coupling mounting from inner side of enclosure, swivel range 320°, continuously variable by release handle

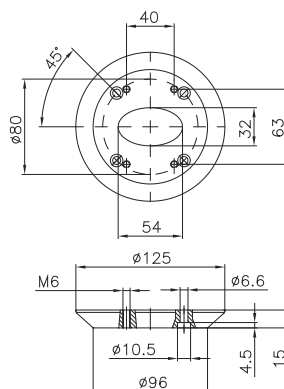
Order No. **49.47 75 02**



Adapter plate GTN II-PRO

for connecting GTN II elements with Siemens Pro command units
 (not relevant for coupling GTN II Pro and angle coupling GTN II Pro)

Bestell-Nr. **49.47 00 01**

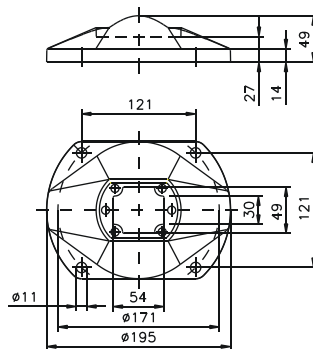




Foot stand fixed

Diecast aluminium, fix version for ground mounting or wall mounting

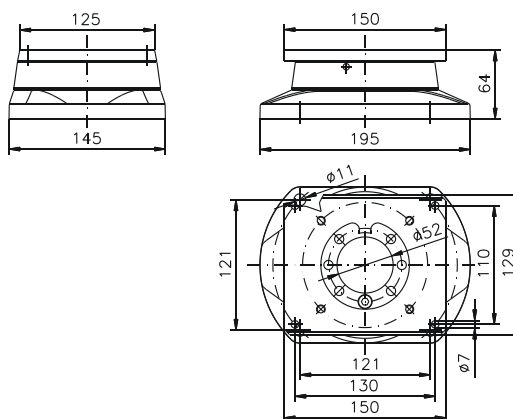
Order No. **49.47 72 00**



Turnable foot stand with adapter plate

Diecast aluminium with adjustable stop position between machine and control panel

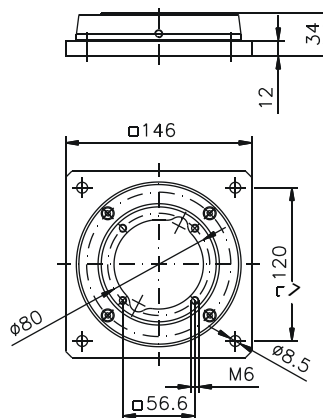
Order No. **49.47 72 20**



Turnable foot stand

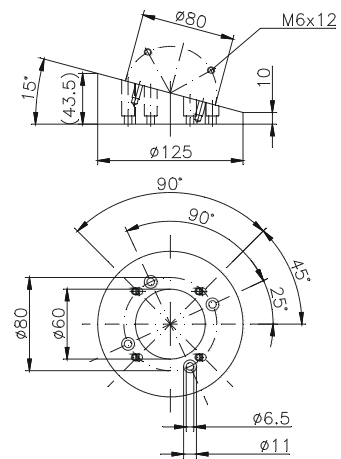
Diecast aluminium with adjustable stop position between machine and control panel

Order No. **49.47 72 21**

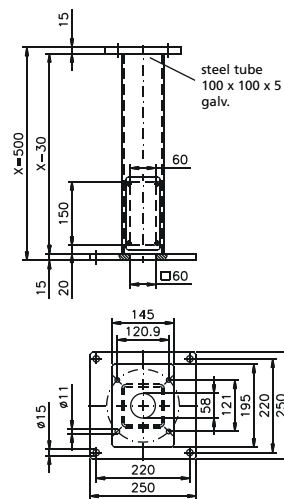




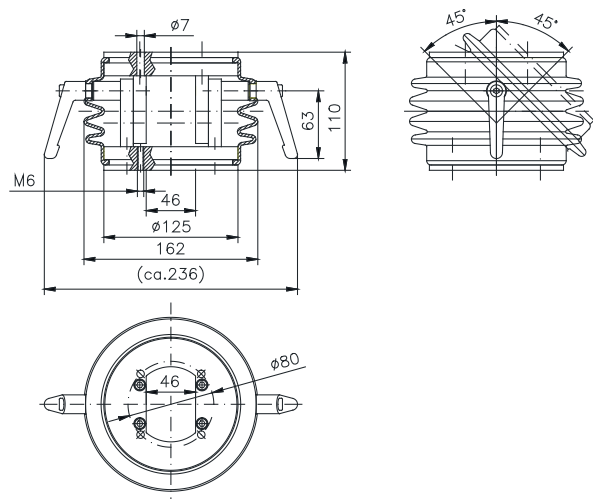
Console flange 15°
Aluminium
Order No. **49.47 76 00**



Column
Steel, painted, length individually up to 2 m, including adapter plate for GTN II top mounted joint, at bottom side flange outlet
Order No. **49.47 00 04 8** (specify total length)



Inclining adapter GTN II
Order No. **49.47 80 00**

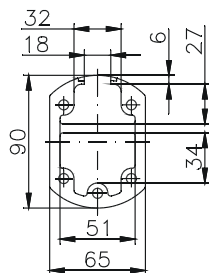




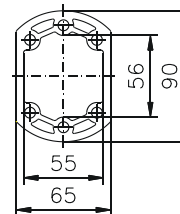
Aluminium profile tube

Extruded aluminium sheath, open version with integrated cable channel with black rubber cover

Order No. and length see page 126



Profile open



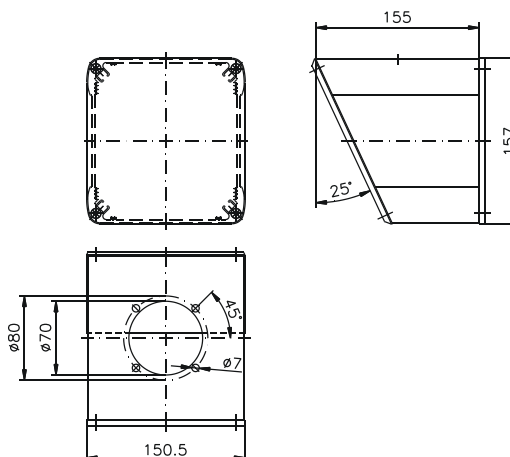
Profile closed



Flat panel adapter

Aluminium profile for rear connection of GTN II to flat panels

Order No. **49.47 90 01**



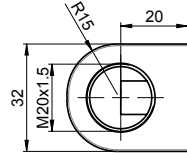
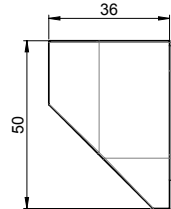
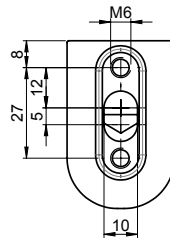
Signal light adaptation



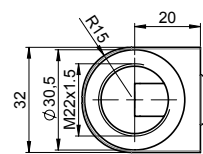
Base connection element for suspension systems, command units and cabinets

Signal light adaptation with thread M20x1.5 mm
Order No. **49.00 01 01**

Signal light adaptation with thread M22x1.5 mm
Order No. **49.00 01 02**



49.00 01 01



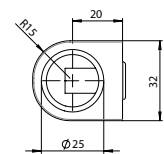
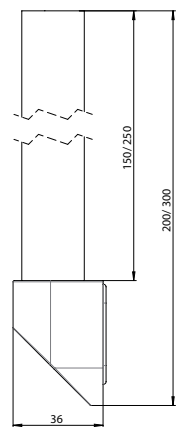
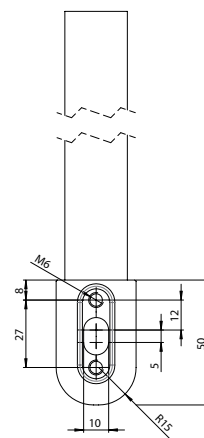
49.00 01 02



Base connection element for suspension systems, command units and cabinets

Signal light adaption with tube \varnothing 25 mm

Order No. **49.00 01 03** (L = 250 mm)
49.00 01 04 (L = 150 mm)





- Industrial round tube system for suspension system
- Modular construction for individual components
- Protected internal cable routing

Technical data

Material:

Connecting tube: steel 48 x 4 mm
DIN 2393-St.37

Components: DIN EN 1706 EN AC-AISI 12 (Fe)

Seal:

CR and/or NBR

Painting:

Powder coating

Colour:

Tube: galvanized

Components: RAL 7043, traffic grey B

Special colour on request

Ingress protection:

IP 54 to EN 60529

Free cable passage:

Connecting tube: Ø 40 mm

System elements: Ø 40 mm

Included in delivery:

Individual system components incl. assembly materials

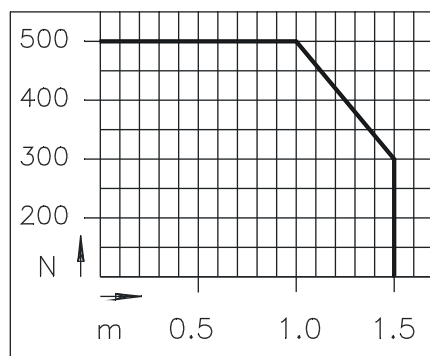
GT 48/2

Product range

		Order No.	Weight (g)
Top-mounted joint		49.49 66 00	2000
Foot stand fixed		49.49 72 00	1000
Foot stand turnable		49.49 68 00	1800
Wall hinge W		49.49 70 00	3000
Wall hinge S		49.49 62 00	2700
Angle		49.49 71 00	1200
Coupling		49.49 73 00	1100
Flange coupling		49.49 77 00	1100
Flange coupling GT 48/2-PRO		49.49 77 02	1300
Angle coupling		49.49 75 00	1300
Flange angle coupling		49.49 78 00	1300
Flange angle coupling GT 48/2-PRO		49.49 78 02	1500
Console flange 30°		49.49 76 00	400
Adapter flange		49.49 79 00	1500
Inclining adapter		49.49 80 00	800
Flat panel adapter		49.45 90 01	1400
Adapter plate GT 48/2-PRO		49.45 00 01	200

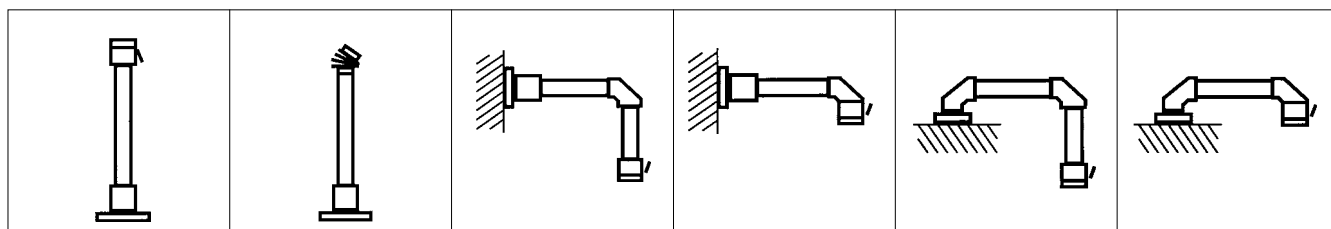
Connecting tube	Order No.	Weight (g)
Standard length: 0.5 m	10.09 42 16	2500
Standard length: 1 m	10.09 42 17	4500
Standard length: 2 m	10.09 42 18	9000
Standard length: 3 m	10.09 42 19	12900
Variable length (please specify)	10.09 41 58	

Load diagram



Note: the vertical length of the profile is responsible for the load of the complete suspension system (lever arm!). Further information for this on request. The values in the above load diagram are guilty to an execution hanging or standing. The declarations of weight are a summary from installation weight, Commander and all components and tubes between Commander and angle.

Added system elements



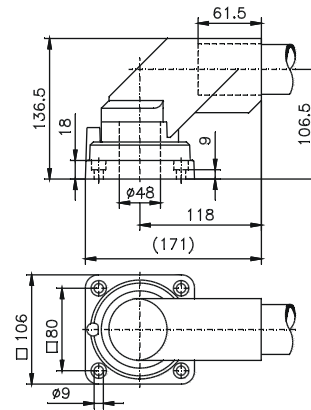
System components



Top-mounted joint

Cast aluminium with steel inner tube and flange mounting.
Swivelling range 250° (cannot be limited or stopped)

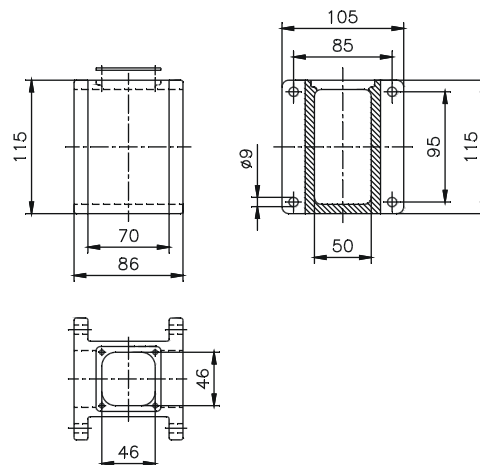
Order No. **49.49 66 00**



Adapter flange

Cast steel part for mounting between wall and wall hinge for free cable routing, cable opening top or bottom as required.

Order No. **49.49 79 00**



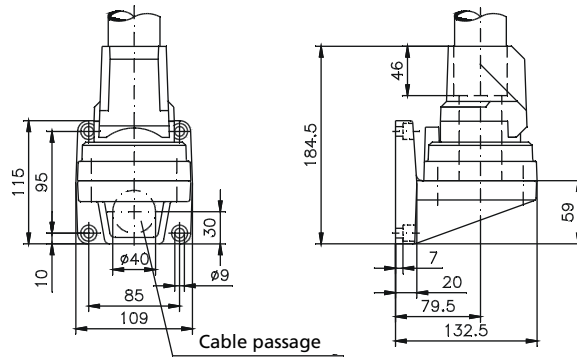
System components



Wall hinge S (vertical)

Cast aluminium with steel inner tube and flange mounting.
Swivelling range 250° (cannot be limited or stopped)

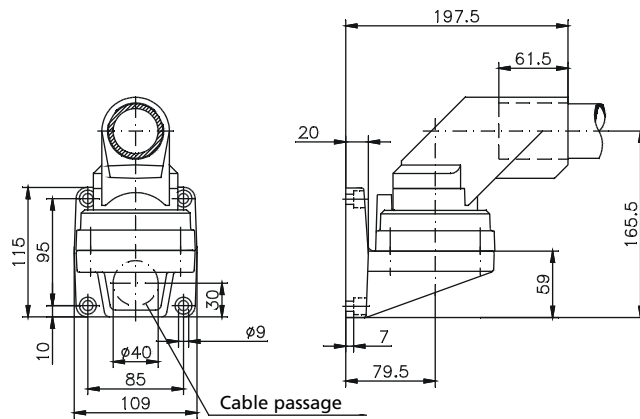
Order No. **49.49 62 00**



Wall hinge W (horizontal)

Cast aluminium with steel inner tube and flange mounting.
Swivelling range 250° (cannot be limited or stopped)

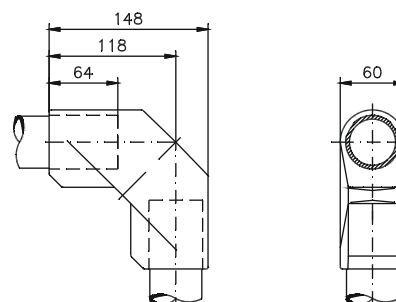
Order No. **49.49 70 00**



Angle

Cast aluminium, angle 90°.

Order No. **49.49 71 00**

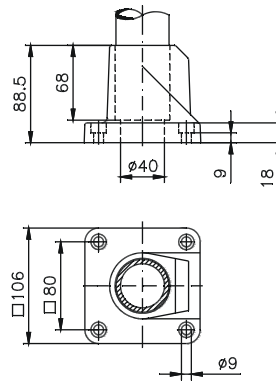


System components



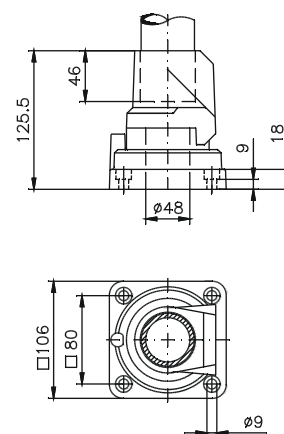
Foot stand, fixed
Cast aluminium, fixed version

Order No. **49.49 72 00**



Foot stand, turnable
Cast aluminium with steel inner tube and flange mounting.
Swivelling range 250° (cannot be limited or stopped)

Order No. **49.49 68 00**



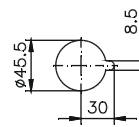
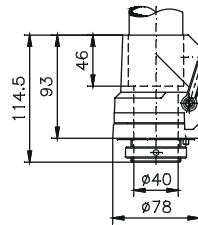
System components



Coupling

Cast aluminium with steel inner tube. Coupling through-fitted. Fastened with locknut on the inside of the enclosure, screw connection not visible from the outside. Swivelling range 270° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.49 73 00**



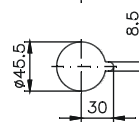
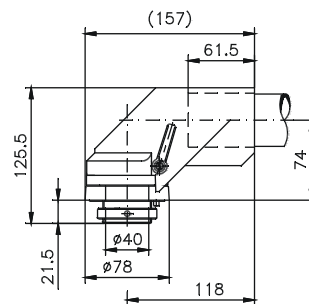
Assembly drill hole



Angle coupling

Combination of angle and coupling for horizontal tube exit. Cast aluminium with steel inner tube. Coupling through-fitted. Fastened with locknut on the inside of the enclosure, screw connection not visible from the outside. Swivelling range 270° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.49 75 00**



Assembly drill hole

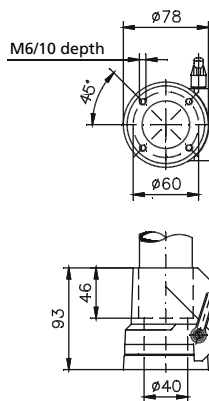
System components



Flange coupling

Cast aluminium with steel inner tube. Coupling mounted from inside. Swivelling range 270° can be stopped at any point via clamping lever (swivelling range cannot be limited)

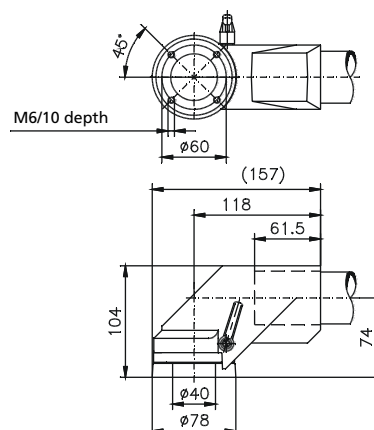
Order No. **49.49 77 00**



Flange angle coupling

Combination of angle and coupling for horizontal tube exit. Cast aluminium with steel inner tube. Coupling mounted from inside. Swivelling range 270° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.49 78 00**

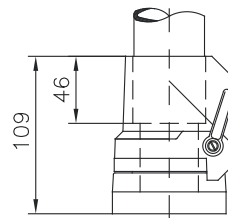
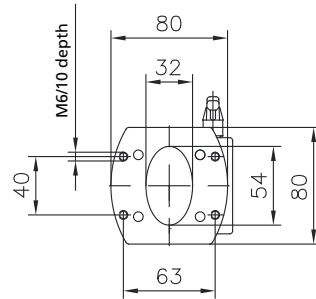


System components



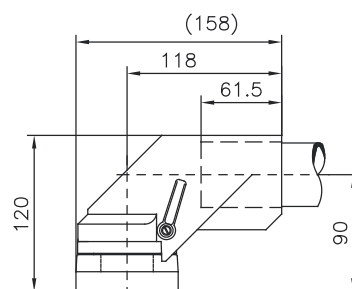
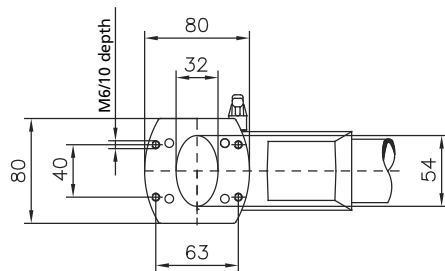
Flange coupling GT 48/2 Pro
 for direct mounting of Siemens Pro command units
 Cast aluminium with steel inner tube. Coupling mounted from inside.
 Swivelling range 270° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.49 77 02**



Flange angle coupling GT 48/2 Pro
 for direct mounting of Siemens Pro command units
 Combination of angle and coupling for horizontal tube exit. Cast aluminium with steel inner tube.
 Coupling mounted from inside.
 Swivelling range 270° can be stopped at any point via clamping lever (swivelling range cannot be limited)

Order No. **49.49 78 02**

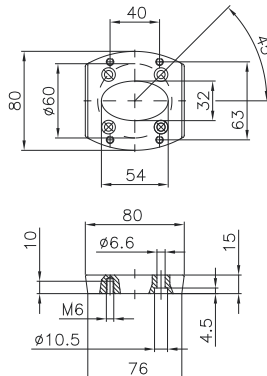


System components



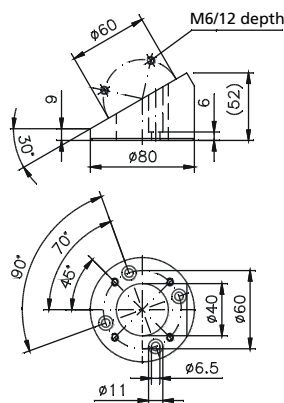
Adapter plate GT 48/2 Pro
for connecting GT 48/2 elements with Siemens Pro command units
(not relevant for flange coupling GT 48/2 Pro and flange angle coupling GT 48/2 Pro)

Order No. **49.45 00 01**



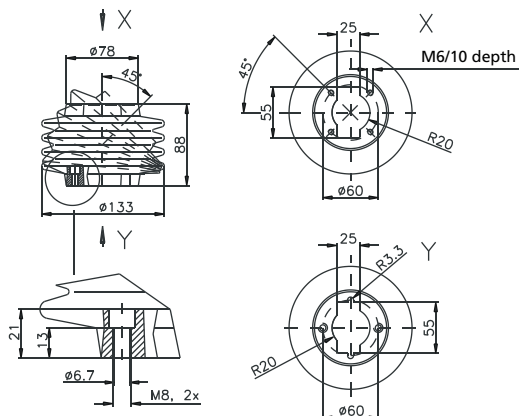
Console flange
Aluminium incl. screws and seal, fixed inclination 30°.
Screw-mounted between enclosure and coupling.

Order No. **49.49 76 00**



Inclining adapter
Cast aluminium part with bellow and seal, inclination can be adjusted to any angle between 0° and 45°. Screw-mounted between enclosure and coupling.

Order No. **49.49 80 00**



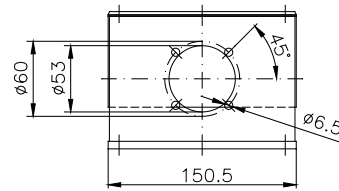
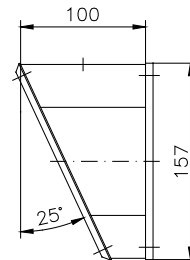
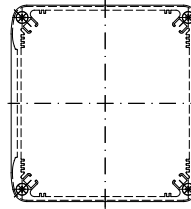
System components



Flat panel adapter

Aluminium profile for rear connection of GT 48/2 / GTK electronic to flat panels. RAL 7035, light grey

Order No. **49.45 90 01**





- Robust industrial square tube suspension system
- Modular construction for individual components
- High loading capacity, large extension

Technical data

Material:

Connecting tube: square steel tube
similar DIN EN 10305-5, wall thickness 5 mm

Components: DIN EN 1706 EN AC-AISI 12 (Fe)

Seal:

CR and/or NBR

Painting:

Powder coating

Colour:

Tube: galvanized

Components: RAL 7043, traffic grey B

Special colour on request

Ingress protection:

IP 65 to EN 60529

Free cable passage:

GT 50/2 16 cm² (40 x 40 mm)

GT 60/2 25 cm² (50 x 50 mm)















GT 80/2 49 cm² (70 x 70 mm)

Included in delivery:

Individual system components incl. assembly material

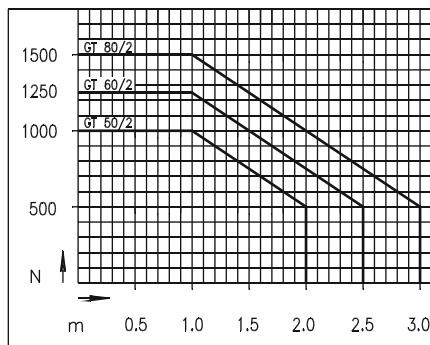
GT50/2; GT 60/2; GT 80/2

Product range

		GT 50/2		GT 60/2		GT 80/2	
		Order No.	Weight (g)	Order No.	Weight (g)	Order No.	Weight (g)
Top-mounted joint		49.51 66 00	13500	49.61 66 00	17300	49.81 66 00	23300
Foot stand, cast steel		49.51 74 00	3160	49.61 74 00	4300	49.81 74 00	6200
Wall hinge		49.51 70 00	6700	49.61 70 00	9100	49.81 70 00	12880
Adapter flange		49.51 79 00	3200	49.61 79 00	3660	49.81 79 00	5680
Intermediate joint		49.51 67 00	6900	49.61 67 00	9600	49.81 67 00	13000
Angle, cast steel		49.51 80 00	4720	49.61 80 00	6200	49.81 80 00	9000
Angel coupling		49.51 75 00	2200	49.61 75 00	3020	49.81 75 00	5360
Flange angle coupling		49.51 78 00	2800	49.61 78 00	3900	49.81 78 00	5600
Coupling		49.51 73 00	1450	49.61 73 00	2400	49.81 73 00	4100
Flange coupling		49.51 77 00	2170	49.61 77 00	3200	49.81 77 00	5200
Console coupling DN		49.51 62 00	2200	49.61 62 00	3700	49.81 62 00	5860
Console adapter 30°		49.51 76 00	1160	49.61 76 00	1280	49.81 76 00	2120
Signal fitting		49.51 80 10	300	49.61 80 10	360	49.81 80 10	400
Adapter plate GTK on GT 80/2; GT 60/2						49.81 10 00	1100
Column stand		49.51 00 04		49.61 00 04		auf Anfrage	

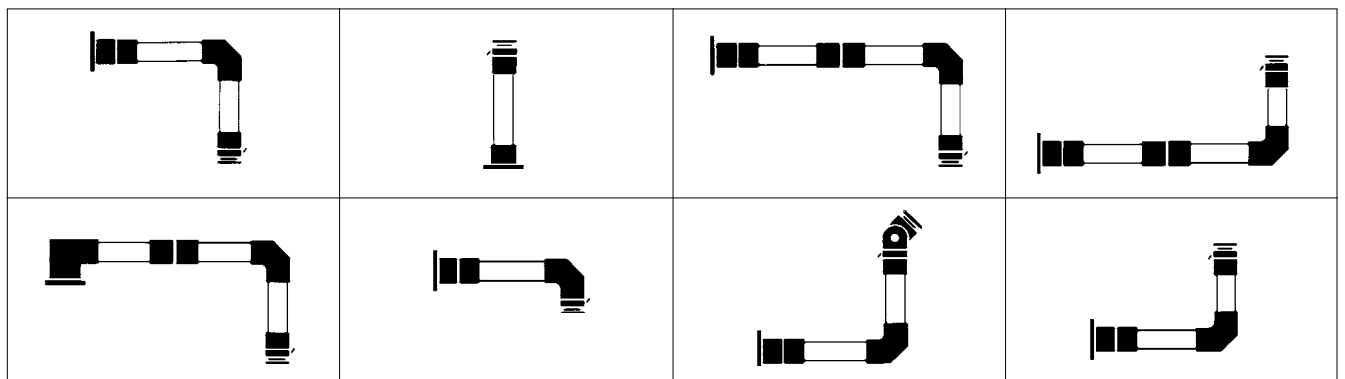
Connecting tube	GT 50/2		GT 60/2		GT 80/2	
	Order No.	Weight (g)	Order No.	Weight (g)	Order No.	Weight (g)
Standard length: 0.5 m	10.09 42 20	3320	10.09 42 23	4250	10.09 42 27	5800
Standard length: 1 m	10.09 42 21	6300	10.09 42 24	7800	10.09 42 28	11000
Standard length: 2 m	10.09 42 22	13000	10.09 42 25	17000	10.09 42 29	21000
Standard length: 3 m	10.09 42 42	20000	10.09 42 26	25000	10.09 42 30	34000
Variable length (please specify)	10.09 41 56		10.09 41 57		10.09 41 59	

Load diagram



Note: the vertical length of the profile is responsible for the load of the complete suspension system (lever arm!). Further information for this on request. The values in the above load diagram are guilty to an execution hanging or standing. The declarations of weight are a summary from installation weight, Commander and all components and tubes between Commander and angle.

Added system elements

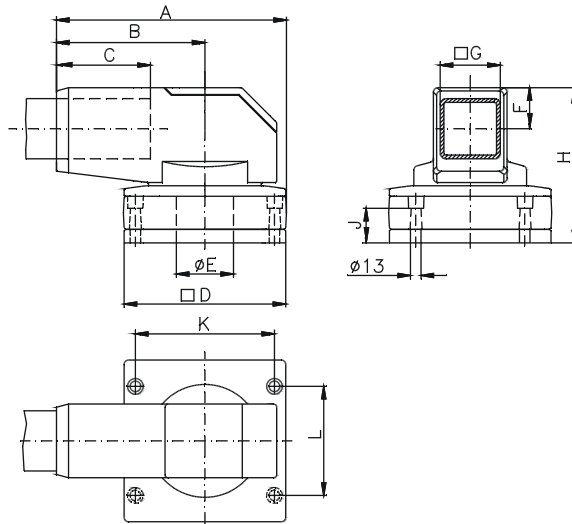


System components



Top-mounted joint

Cast steel swivel member for mounting onto assembly surfaces or for suspension (ceiling mounting). Assembly cover to ease cable installation. Tube clamping and alignment via olive rings. Swivelling range 310°, can be limited from between 0° to 270° (plain bearing), swivel force can be adjusted via bearing screw.

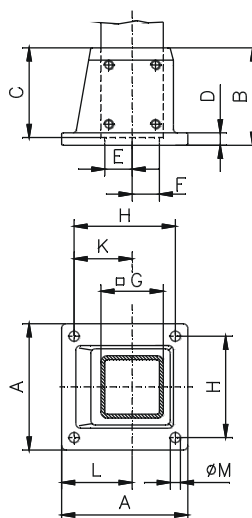


Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	J	K	L
50/2	49.51 66 00	13500	251	160	95	180	50	39,5	50	151	35	150	116
60/2	49.61 66 00	17300	278	179,5	110	195	58	44,5	60	171	38	165	125
80/2	49.81 66 00	23300	306	197,5	125	215	76	54,5	80	206	46	185	145



Foot stand

Cast steel element for floor mounting. Tube clamping and alignment via olive rings.



Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	K	L	M
50/2	49.51 74 00	3160	128	90	80	12	20,5	19,5	40	100	57	71	12
60/2	49.61 74 00	4300	138	100	90	14	25,5	24,5	50	110	63	77	12
80/2	49.81 74 00	6200	162	115	105	16	35,5	34,5	80	130	74,5	90,5	14

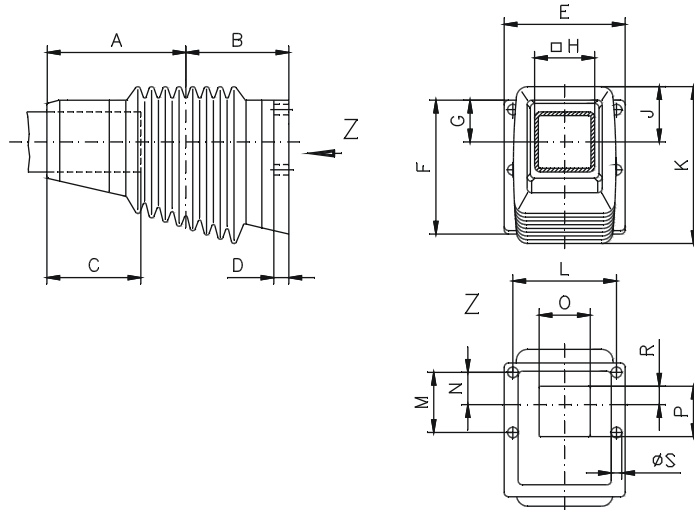
GT50/2; GT 60/2; GT 80/2

System components



Wall hinge

Steel elements with plain bearing. Tube clamping and alignment via olive rings. Dust and damp protection via PVC bellow. Swivelling range 180°, can be limited to stepped degrees with stops, swivel force can be adjusted via bearing screw.

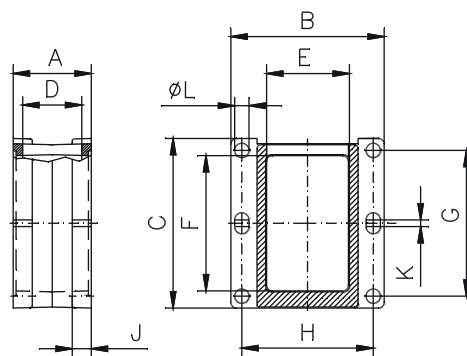


Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S
50/2	49.51 70 00	6700	140	90	95	12	132	125	40	50	58	164	107	50	27,5	48	35	11	12
60/2	49.61 70 00	9100	162	102	110	15	140	145	45	60	62	176	115	60	32,5	57	44,5	15	12
80/2	49.81 70 00	12880	185	137	125	20	161	178	56	80	75	210	138	80	43,5	68	67	25	14



Adapter flange for wall hinge

Cast steel adapter for mounting between wall hinge and mounting surface. Removable intake plate allows cable entry from below.



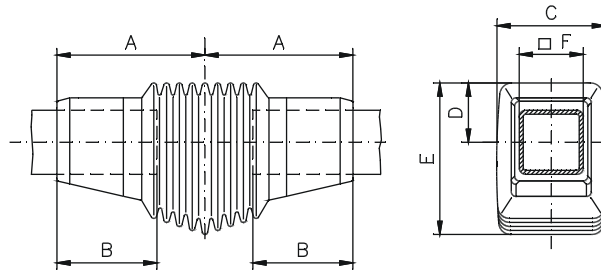
Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	J	K	L
50/2	49.51 79 00	3200	66	132	125	46	57	89	100	107	12	0	12
60/2	49.61 79 00	3660	72	140	145	52	65	109	120	115	15	0	12
80/2	49.81 79 00	5680	82	161	178	62	86	142	153	138	20	7	15

System components



Intermediate joint

Cast steel swivel member with plain bearing. Tube clamping and alignment via olive rings. Dust and damp protection via PVC corrugated duct. Swivelling range 180°, can be limited to stepped degrees with stops, swivel force can be adjusted via bearing screw.

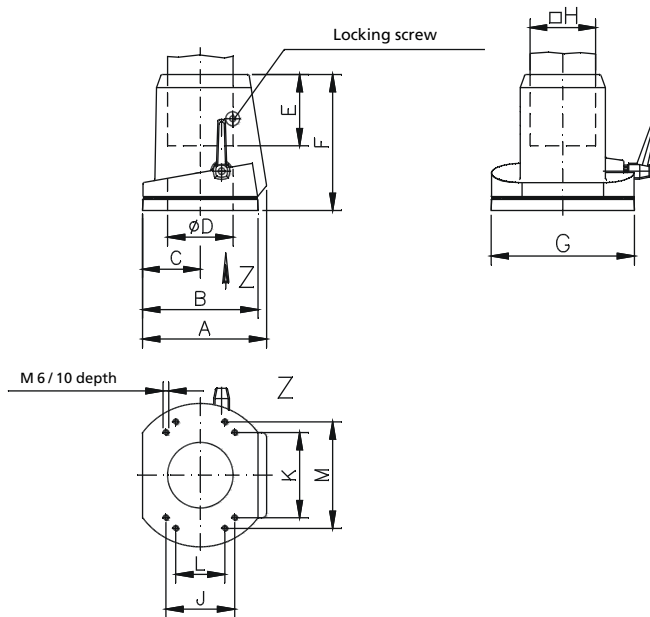


Type	Order No.	Weight (g)	A	B	C	D	E	F
50/2	49.51 67 00	6900	140	95	107	58	152	50
60/2	49.61 67 00	9600	162	110	114	62	162	60
80/2	49.81 67 00	13000	185	125	136	75	190	80



Flange coupling

Cast aluminium with steel inner tube. Fastened to connecting tube with olive rings. Additional safety screws for large loads. Permanent plain bearing with PA-bearing, adjustable swivel friction force. Swivelling range 325° can be stopped at any point with clamping lever, stops can limit movement in 25° steps. Elbow flange coupling cannot be used as top-mounted joint!



Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	J	K	L	M
50/2	49.51 77 00	2170	110	107	53,5	48	55	116	131	50	57	77	-	-
60/2	49.61 77 00	3200	124	117	59,5	58	65	136,5	141	60	57	77	-	-
80/2	49.81 77 00	5200	151	141	70,5	80	87	166	175	80	84	104	60	130

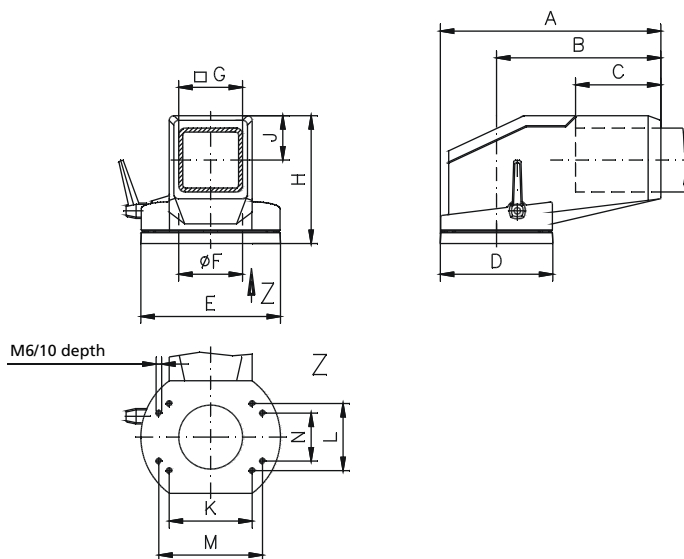
GT50/2; GT 60/2; GT 80/2

System components



Flange angle coupling

Combination of coupling and angle, swivel joint in cast aluminium. Fastened to connecting tube with olive rings. Permanent plain bearing with PA-bearing, adjustable swivel friction force. Swivelling range 325° can be stopped at any point with clamping lever, stops can limit movement in 25° steps. Angle flange coupling cannot be used as top-mounted joint!

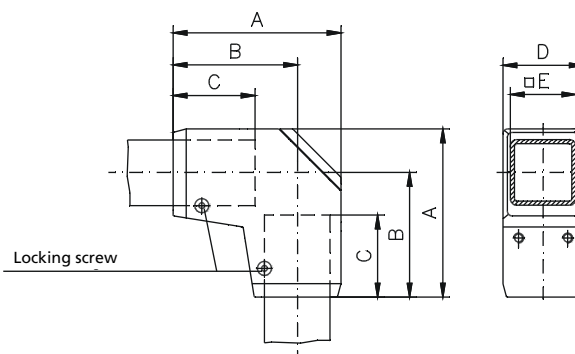


Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	J	K	L	M	N
50/2	49.51 78 00	2800	187,5	134	80	107	131	48	50	117,5	39,5	77	57	-	-
60/2	49.61 78 00	3900	216,5	158	90	117	141	58	60	130,5	42,5	77	57	-	-
80/2	49.81 78 00	5600	276,5	206	107	141	175	80	80	160	55,5	104	84	130	60



Angle

Cast steel angle joint 90°. Tube clamping and alignment via olive rings. Additional safety screws, particularly for vibration protection. Assembly cover eases cable installation.



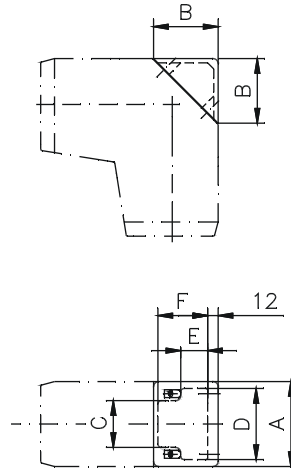
Type	Order No.	Weight (g)	A	B	C	D	E
50/2	49.51 80 00	4720	154	115	80	74	50
60/2	49.61 80 00	6200	172	128	90	84	60
80/2	49.81 80 00	9000	210	157	105	98	80

System components



Signal fitting

Cast aluminium part for mounting indicator lights on the angle.

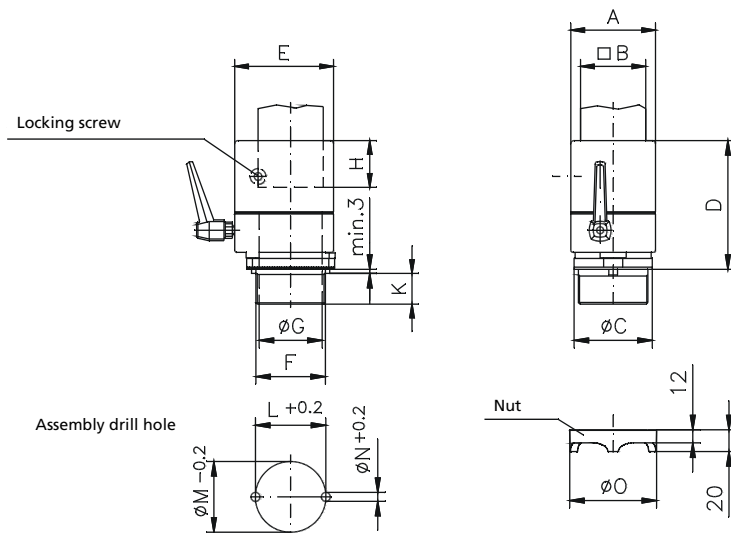


Type	Order No.	Weight (g)	A	B	C	D	E	F
50/2	49.51 80 10	300	74	60	36	54	29	38
60/2	49.61 80 10	360	84	65	40	62	32	43
80/2	49.81 80 10	400	98	76	54	82	42	54



Coupling

Cast aluminium with steel inner tube. Fitting through enclosure hole. Fastened to connecting tube with olive rings. Additional safety screws for large loads. Permanent plain bearing with PA-bearing. Friction force of swivel movement is adjustable. Swivelling range 300° can be stopped at any point with clamping lever.



Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	K	L	M	N	O
50/2	49.51 73 00	1450	66	50	62	99,5	82	M50 x 2	44,5	32	31	50,8	51	8,2	65
60/2	49.61 73 00	2400	78	60	72	118,5	91	M64 x 2	56	45	31	64,8	65	8,2	80
80/2	49.81 73 00	4100	104	80	104	145,5	115	M90 x 2	80	49	34	90,8	91	10,2	111

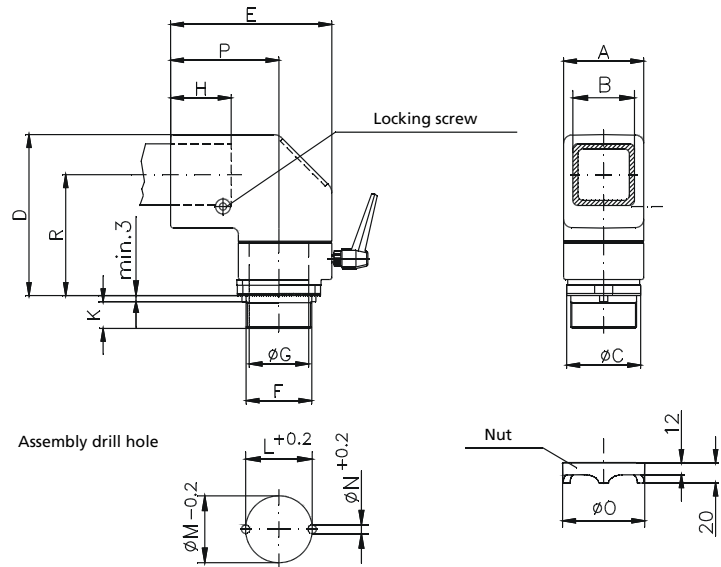
GT50/2; GT 60/2; GT 80/2

System components



Angle coupling

Combination of coupling and angle, cast aluminium. Fitting through enclosure hole. Fastened to connecting tube with olive rings. Additional safety screws for large loads. Permanent plain bearing with PA-bearing. Friction force of swivel movement is adjustable. Swivelling range 300° can be stopped at any point with clamping lever.

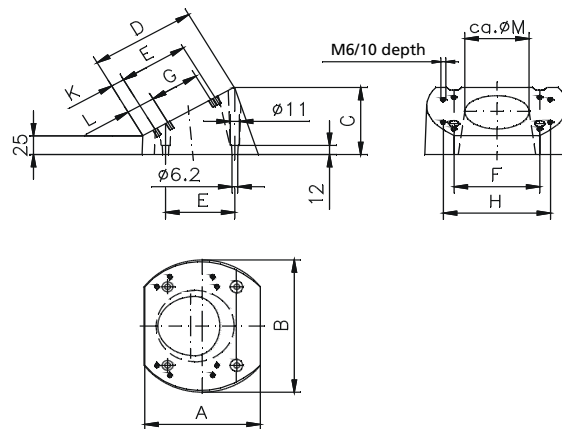


Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	K	L	M	N	O	P	R
50/2	49.51 75 00	2200	66	50	62	140	140	M50 x 2	44,5	47	31	50,8	51	8,2	65	95	104
60/2	49.61 75 00	3020	78	60	72	157	157	M64 x 2	56	61	31	64,8	65	8,2	80	105,5	118
80/2	49.81 75 00	5360	104	80	104	199	200	M90 x 2	80	72	34	90,8	91	10,2	111	137	149



Console adapter

Cast aluminium part with fixed 30° inclination for assembly between enclosure and flange coupling GT 50/2, GT 60/2 and GT 80/2.



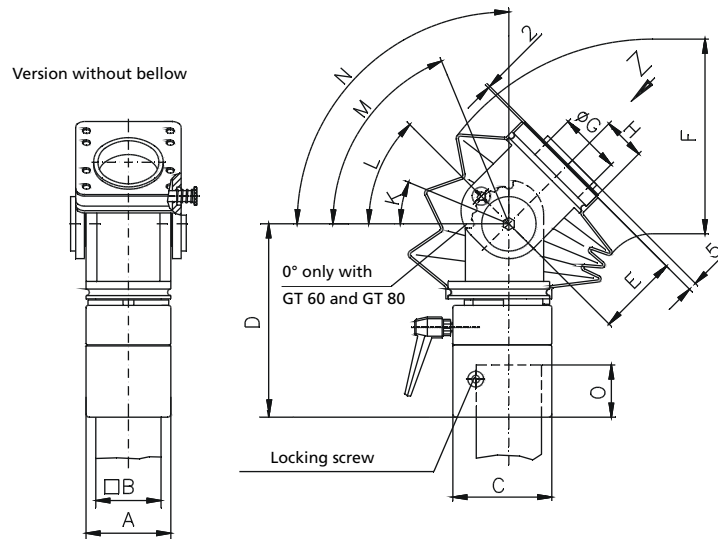
Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	K	L	M
50/2	49.51 76 00	1160	107	131	71	92	57	77	-	-	14	-	50
60/2	49.61 76 00	1280	117	141	76	102	57	77	-	-	18	-	60
80/2	49.81 76 00	2120	141	175	89	128	84	104	60	130	17	35	80

System components



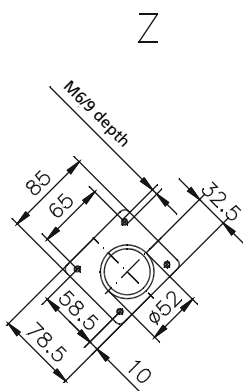
Console coupling

Cast aluminium with steel inner tube. Fastened to connecting tube with olive rings, and to enclosure with flange. Dust and damp protection via PVC bellow. Additional safety screws for large loads. Permanent plain bearing with PA-bearing, adjustable swivel friction force. Swivelling range 300° can be stopped at any point with clamping lever.

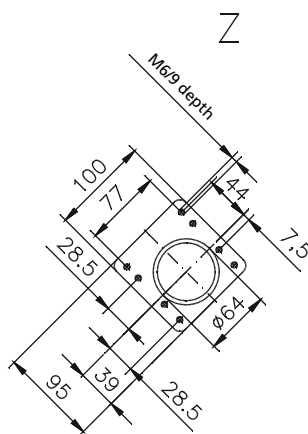


Type	Order No.	Weight (g)	A	B	C	D	E	F	G	H	K	L	M	N	O
50/2	49.51 62 00	2200	66	50	82	142	44	115 x 103	44,5	32,5	15°	32,5°	50°	-	32
60/2	49.61 62 00	3700	78	60	91	178	75	180 x 160	56	39	22,5°	45°	67,5°	90°	45
80/2	49.81 62 00	5860	104	80	115	212	84	210 x 180	80	55	22,5°	45°	67,5°	90°	49

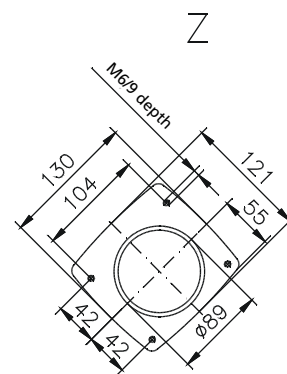
Flange dimensions for GT 50/2 console coupling



Flange dimensions for GT 60/2 console coupling



Flange dimensions for GT 80/2 console coupling



GT50/2; GT 60/2; GT 80/2



Column

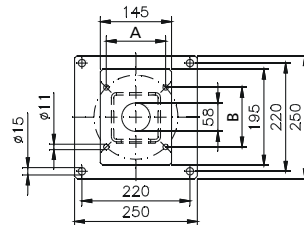
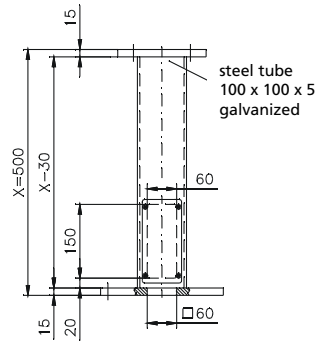
Sheet steel, painted, individual length including adapter plate for top mounted joint. At the base flange outlet max. length 2 m.

Order No.

49.51 00 04 8 GT 50/2 (specify total length)

49.61 00 04 8 GT 60/2 (specify total length)

on request GT 80/2

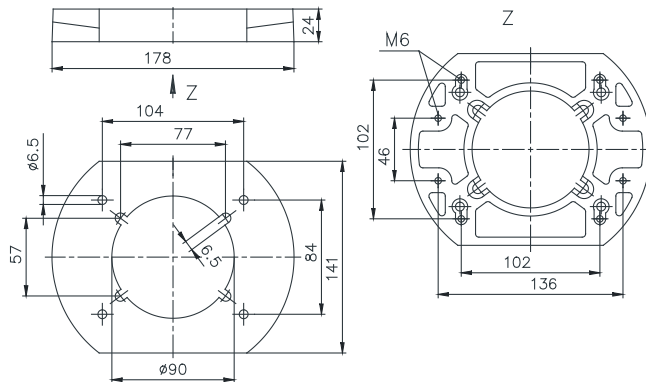


Type	A	B
50/2	116	150
60/2	125	165



Adapter GTK on GT 80/2; GT 60/2

Order No. **49.81 10 00**





- Industrial square suspension system with free accessible cable channel
- Modular construction with free accessible cable duct
- Floor, top-mounting or wall exit options

Technical data

Material:

Connecting tube: square ST 37 similar to
DIN EN 10305-5, wall thickness 5 mm or 8 mm
Components: spheroidal graphite cast iron and/
or cast aluminium
Cable duct / cover: aluminium extruded profile
Bearing: ball bearing
Bellow: textile fabric

Seal:

CR or NBR

Painting:

Powder coating

Colour:

Cable duct / cover: RAL 7035, light grey
Components: RAL 7043, traffic grey B
Special colours on request

Ingress protection:

IP 65 to EN 60529
on with connection of top-mounted flange /
enclosure

Free cable passage:











57 cm²

Included in delivery:

Individual system components incl. cable
duct covering and assembly materials

GTK 80

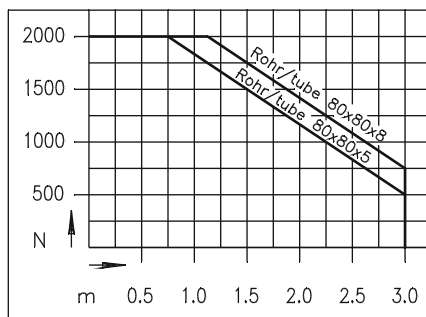
Product range

		Order No.	Weight (g)
Top-mounted joint		49.90 66 01	20000
Foot stand / wall flange		49.90 74 01	6755
Wall hinge		49.90 70 01	18900
Intermediate joint		49.90 67 01	15200
Angle (FH) cast iron		49.90 71 11	12020
Angle (AS) aluminium		49.90 71 20	3600
Angle coupling		49.90 75 01	5521
Coupling		49.90 73 01	5290
Top-mounted flange type A		49.90 00 30	1100
Top-mounted flange type B		49.90 00 20	1100

	Cable duct (standard length to fit relevant suspension tube)	Weight (g)	Suspension tube 80 x 80 x 5 mm Weight (g)	Suspension tube 80 x 80 x 8 mm Weight (g)
Standard length: 0.5 m	10.09 42 35	1450	10.09 42 27 5800	10.09 42 31 9000
Standard length: 1 m	10.09 42 36	2900	10.09 42 28 11600	10.09 42 32 18000
Standard length: 2 m	10.09 42 37	5800	10.09 42 29 23200	10.09 42 33 36000
Standard length: 3 m	10.09 42 38	8700	10.09 42 30 34800	10.09 42 34 54000
Variable length (please specify)	10.09 41 65*		10.09 41 59	10.09 41 68

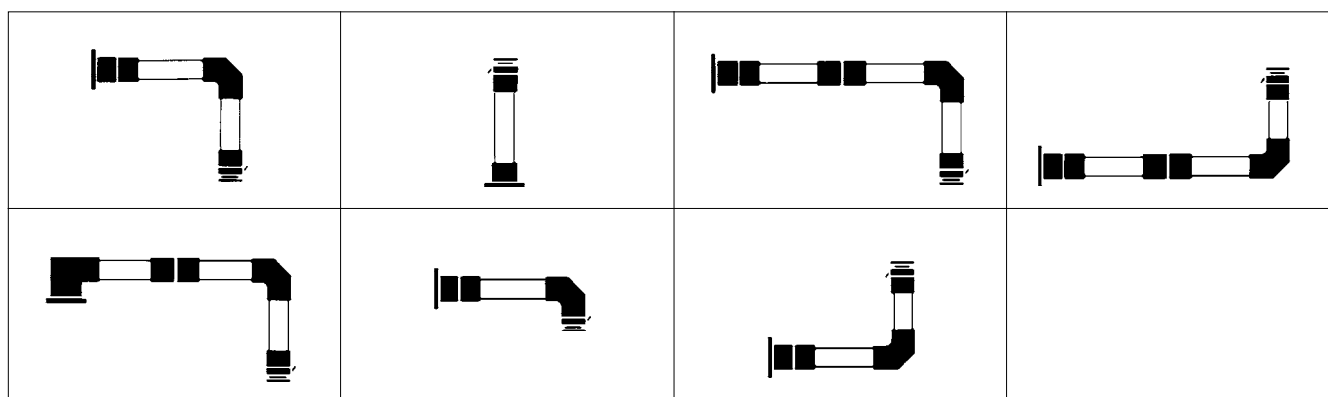
* The cable duct needs to be 175 mm shorter than the suspension tube length!

Load diagram



Note: the vertical length of the profile is responsible for the load of the complete suspension system (lever arm!). Further information for this on request. The values in the above load diagram are guilty to an execution hanging or standing. The declarations of weight are a summary from installation weight, Commander and all components and tubes between Commander and angle.

Added system elements



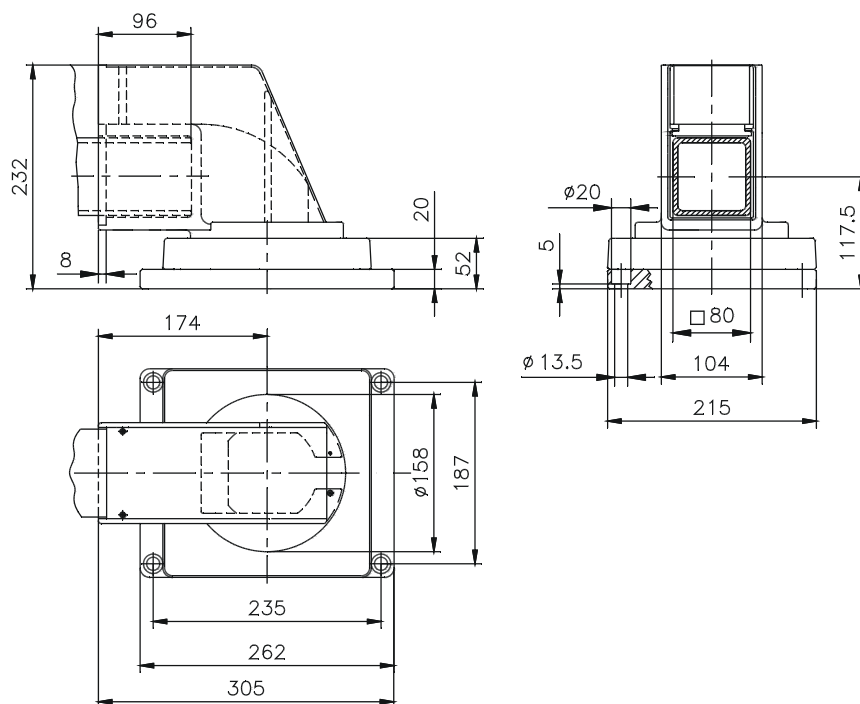
System components



Top-mounted joint

Cast iron. Fastening and adjustment on suspension tube with olive rings. Permanent easy-running ball bearing. Friction force of swivel movement is adjustable. Easy cable routing thanks to open cable duct. Swivelling range approx. 360°

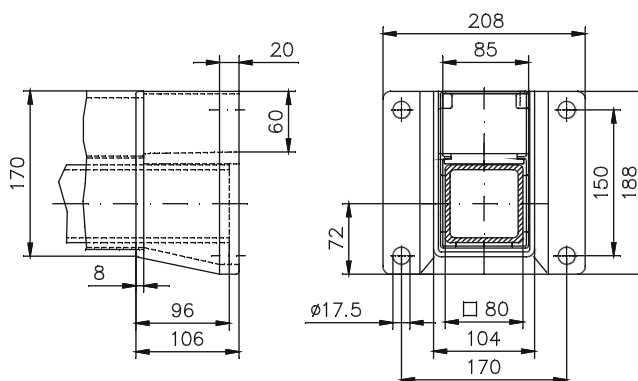
Order No. **49.90 66 01**



Foot stand/wall flange

Cast iron. Fastening and adjustment on suspension tube with olive rings. Mounting options: Vertical (foot stand), horizontal (fixed wall mounting) or hanging (ceiling mounted). Easy cable routing thanks to open cable duct.

Order No. **49.90 74 01**



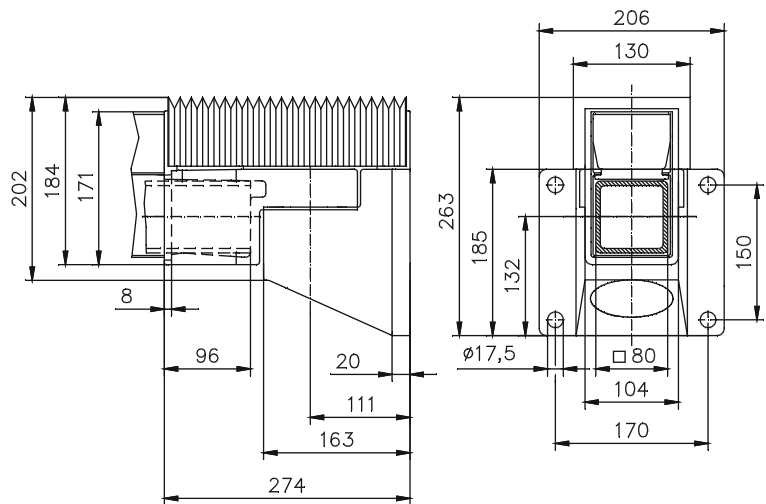
System components



Wall hinge

Cast iron. Fastening and adjustment on suspension tube with olive rings. Permanent easy-running ball bearing. Friction force of swivel movement is adjustable. Easy cable routing thanks to open cable duct. Dust protection with woven bellow. Swivelling range approx. 180°

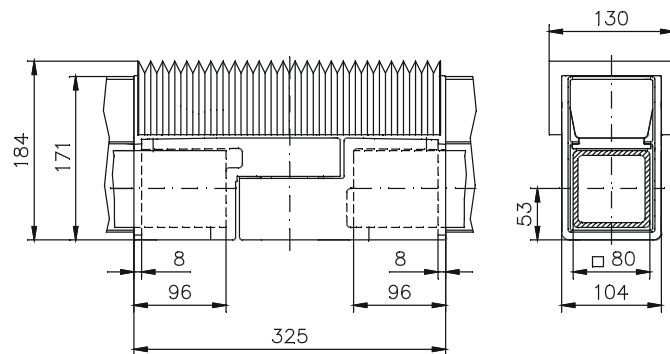
Order No. **49.90 70 01**



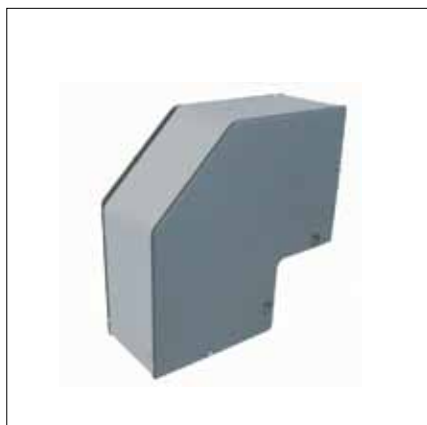
Intermediate joint

Cast iron. Fastening and adjustment on suspension tube with olive rings. Permanent easy-running ball bearing. Friction force of swivel movement is adjustable. Easy cable routing thanks to open cable duct. Dust protection with woven bellow. Swivelling range approx. 180°

Order No. **49.90 67 01**



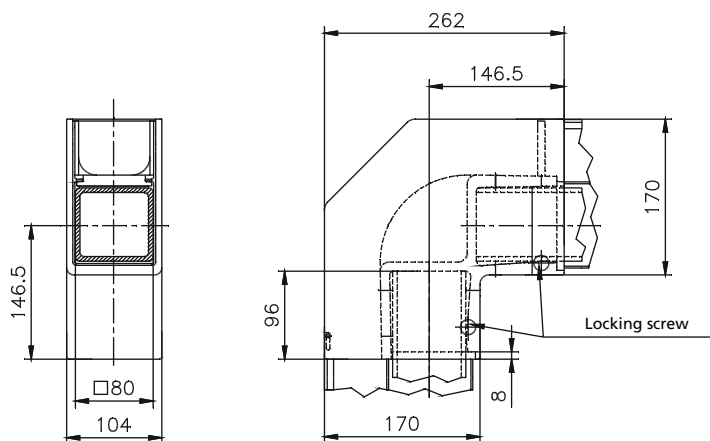
System components



Angle (FH)

Cast iron. 90° angle for use with high bending loads. Fastening and adjustment on suspension tube with olive rings. Additional safety screws for high vertical tensile loads. Easy cable routing thanks to open cable duct.

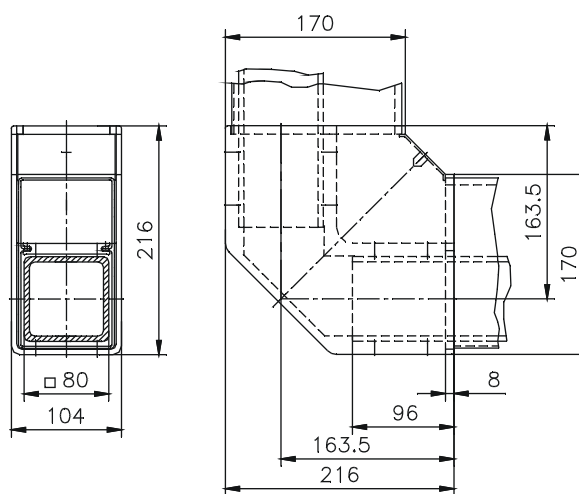
Order No. **49.90 71 11**



Angle (AS)

Cast aluminium 90° angle for vertical construction from the bottom up with minimal bending load. Fastening and adjustment on suspension tube with olive rings. Easy cable routing thanks to open cable duct.

Order No. **49.90 71 20**



System components

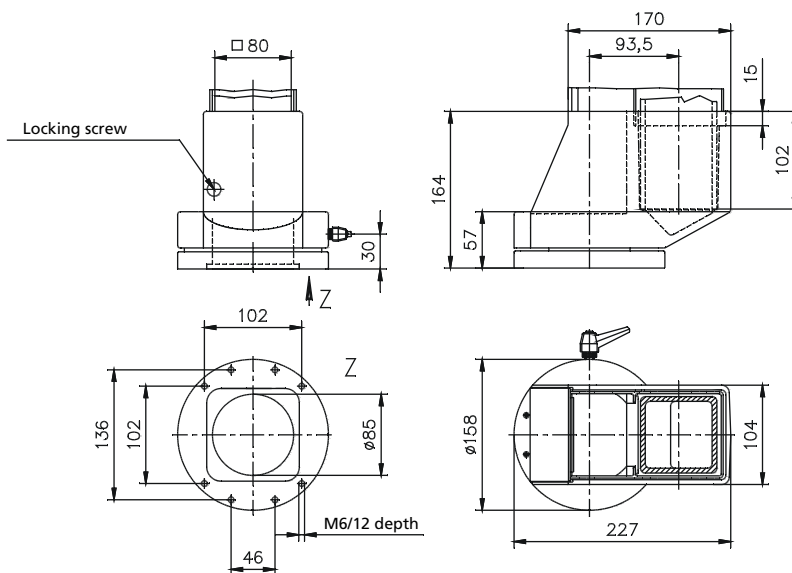


Coupling

Cast aluminium Large surface flange mounting on enclosure. Fastening and adjustment on suspension tube with olive rings. Permanent easy-running ball bearing. Swivel movement friction force can be adjusted with clamping lever. Easy cable routing thanks to open cable duct. Swivelling range approx. 320°

Caution: Custom flange fastening available for extremely heavy duty work!

Order No. **49.90 73 01**

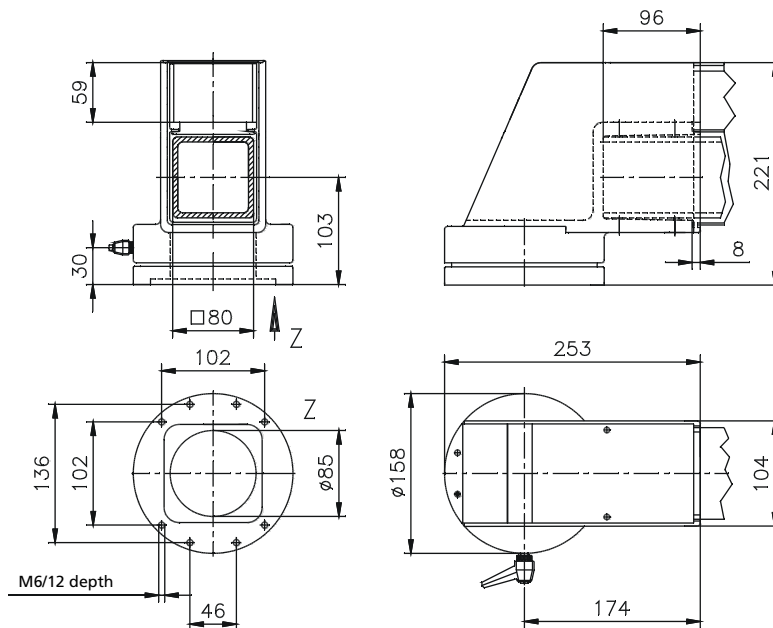


Angle coupling

Cast aluminium. Combination of coupling and angle. Large surface flange mounting on enclosure. Fastening and adjustment on suspension tube with olive rings. Permanent easy-running ball bearing. Swivel movement friction force can be adjusted with clamping lever. Easy cable routing thanks to open cable duct. Swivelling range approx. 320°

Caution: special flange fastening available for extremely heavy duty work!

Order No. **49.90 75 01**



System components



Top-mounting flange

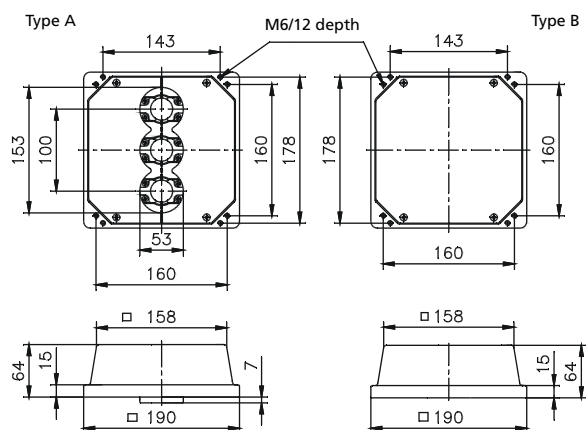
Fitted in combination with coupling or angle coupling to maintain compliance with enclosure rating IP 65 at transition to control panel.

Type A: Cast aluminium Large area mounting on enclosure for maximum 3 ready-made leads with diameters from 7 to 26 mm. Open cable entry.

Type B: Cast aluminium Large area mounting on enclosure for a large number of ready-made leads. Sealed with special cable glands or threaded cable connectors. Open cable entry.

Type A: Order No. **49.90 00 30**

Type B: Order No. **49.90 00 20**



Moterm II



- Mobile stand system for control components
- Version with 4 rollers or with foot stand
- Fixed or height-adjustable version with pneumatic spring
- Optionally foot stand for anchoring

Included in delivery

Moterm with integrated tilt adjustment for adapter plate for control systems
(Please order adapter plate separately)

Technical Data

Material:

Base and stand profile: Aluminium profile system DIN EN 573 EN AW-ALMgSi

Colour:

Base: RAL 9005, black

Stand profile: plain anodised, powder-coated optional

Maximum static load:

80kg

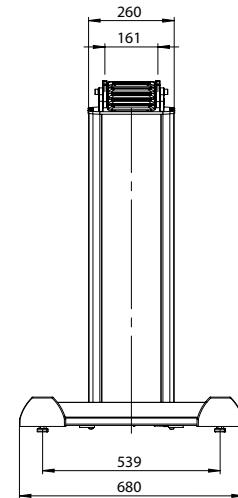
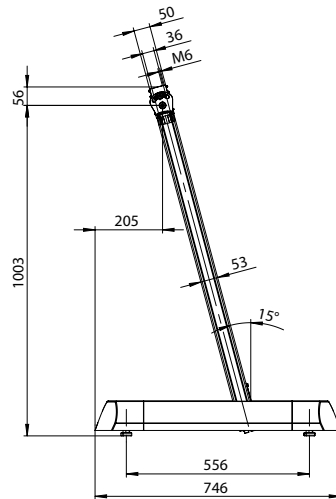
Moterm II



Moterm x11

Version with levelling feet to adjust for floor irregularities – as a stand system
Version with fixed height (966 mm), other height or base dimensions on request

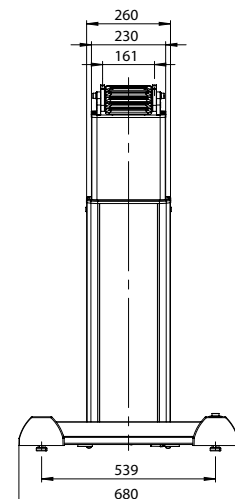
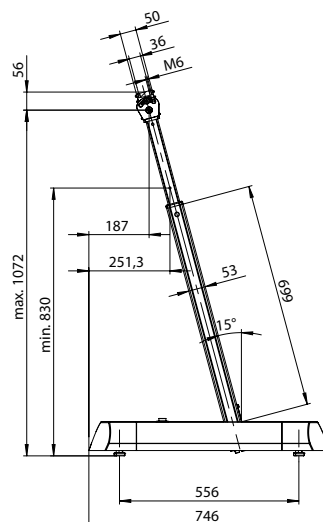
Order No.	Type	Height	Description	Load
50.01 03 11	Moterm 311	1059 mm	fixed height, with foot stand	8 - 80 kg
50.01 09 11	Moterm 911	customized	fixed height, with foot stand	customized



Moterm x12

Version with levelling feet to adjust for floor irregularities – as a stand system
Version with pneumatic spring and release mechanism
Height can be adjusted from 750mm to 1000mm
for load ranges from 8 to 50kg; other load values on request

Order No.	Type	Height	Description	Load
50.01 03 12	Moterm 312	886 mm to 1128 mm	manually adjustable, with food stand	8 - 15 kg
50.01 04 12	Moterm 412	886 mm to 1128 mm	manually adjustable, with food stand	16 - 22 kg
50.01 05 12	Moterm 512	886 mm to 1128 mm	manually adjustable, with food stand	23 - 30 kg
50.01 06 12	Moterm 612	886 mm to 1128 mm	manually adjustable, with food stand	31 - 40 kg
50.01 07 12	Moterm 712	886 mm to 1128 mm	manually adjustable, with food stand	41 - 50 kg
50.01 09 12	Moterm 912	886 mm to 1128 mm	manually adjustable, with food stand	customized



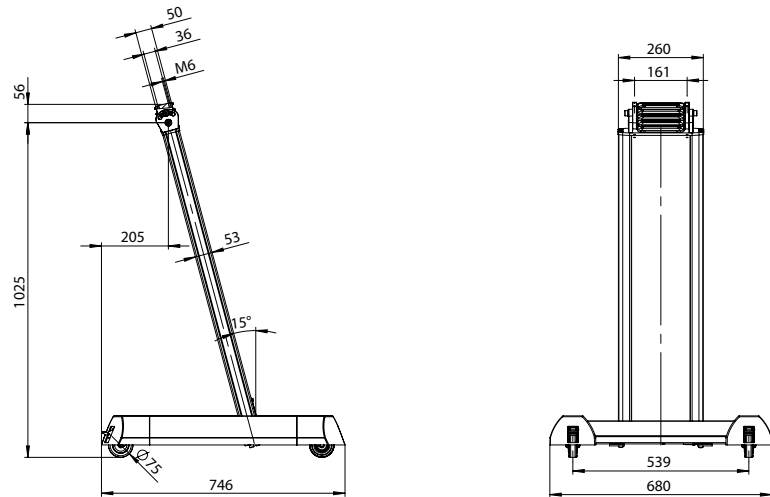
Moterm II



Moterm x14

Version with 4 rollers, 2 movable and 2 locking rollers
Version with fixed height (984 mm), other height or base dimensions on request

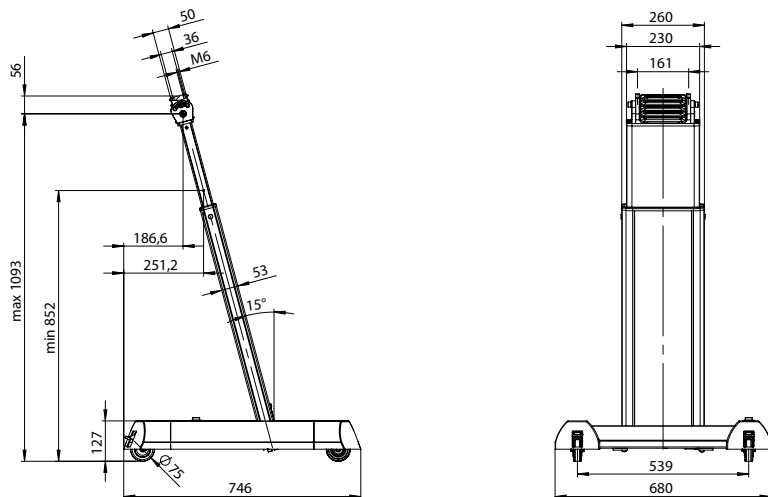
Order No.	Type	Height	Description	Load
50.01 03 14	Moterm 314	1081 mm	fixed height, 4 rollers	8 - 80 kg
50.01 09 14	Moterm 914	variable version	fixed height, 4 rollers	customized



Moterm x15

Version with 4 rollers, 2 movable and 2 locking rollers,
with pneumatic spring and release mechanism
Height can be adjusted from 750mm to 1000mm
for load ranges from 8 to 50kg; other load values on request

Order No.	Type	Height	Description	Load
50.01 03 15	Moterm 315	886 mm to 1128 mm	manually adjustable, 4 rollers	8 - 15 kg
50.01 04 15	Moterm 415	886 mm to 1128 mm	manually adjustable, 4 rollers	16 - 22 kg
50.01 05 15	Moterm 515	886 mm to 1128 mm	manually adjustable, 4 rollers	23 - 30 kg
50.01 06 15	Moterm 615	886 mm to 1128 mm	manually adjustable, 4 rollers	31 - 40 kg
50.01 07 15	Moterm 715	886 mm to 1128 mm	manually adjustable, 4 rollers	41 - 50 kg
50.01 09 15	Moterm 915	886 mm to 1128 mm	manually adjustable, 4 rollers	customized



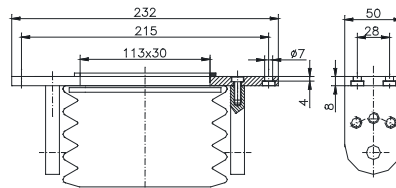
Product Overview

Order No.	Type	Height	Description	Load
50.01 03 11	Moterm 311	1059 mm	fixed height, with foot stand	8 - 80kg
50.01 09 11	Moterm 911	customized	fixed height, with foot stand	customized
50.01 03 12	Moterm 312	886 mm to 1128 mm	manually adjustable, with food stand	8 - 15kg
50.01 04 12	Moterm 412	886 mm to 1128 mm	manually adjustable, with food stand	16 - 22kg
50.01 05 12	Moterm 512	886 mm to 1128 mm	manually adjustable, with food stand	23 - 30kg
50.01 06 12	Moterm 612	886 mm to 1128 mm	manually adjustable, with food stand	31 - 40kg
50.01 07 12	Moterm 712	886 mm to 1128 mm	manually adjustable, with food stand	41 - 50kg
50.01 09 12	Moterm 912	886 mm to 1128 mm	manually adjustable, with food stand	customized
50.01 03 14	Moterm 314	1081 mm	fixed height, 4 rollers	8 - 80kg
50.01 09 14	Moterm 319	variable version	fixed height, 4 rollers	customized
50.01 03 15	Moterm 315	886 mm to 1128 mm	manually adjustable, 4 rollers	8 - 15kg
50.01 04 15	Moterm 415	886 mm to 1128 mm	manually adjustable, 4 rollers	16 - 22kg
50.01 05 15	Moterm 515	886 mm to 1128 mm	manually adjustable, 4 rollers	23 - 30kg
50.01 06 15	Moterm 615	886 mm to 1128 mm	manually adjustable, 4 rollers	31 - 40kg
50.01 07 15	Moterm 715	886 mm to 1128 mm	manually adjustable, 4 rollers	41 - 50kg
50.01 09 15	Moterm 915	886 mm to 1128 mm	manually adjustable, 4 rollers	customized

Accessories



Moterm universal adapter plate for connecting to the control enclosure



Moterm feet for anchoring (set = 2 pieces)

Order No.	Type
50.01 02 03	Adapter plate SL 2000 profile 1
50.01 02 04	Adapter plate SL 2000 profile 2
50.01 02 05	Adapter plate SL 2000 profile 3
50.01 02 06	Adapter plate SL 3000 profile 1
50.01 02 07	Adapter plate SL 3000 profile 2 to 4
50.01 02 08	Adapter plate SL 3000 desk version
50.01 02 09	Universal adapter plate (see diagram)
50.01 02 10	Beckhoff CP 7032 adapter plate
50.01 02 11	ComTronic adapter plate
50.01 02 12	Adapter plate SL 3000 profile 4 (direct installation)
50.01 02 13	Flat control adapter
50.01 02 14	Adapter plate SL 4000 profile 1 - 3
50.01 02 15	Adapter plate SL 4000 desk version

Order No. **50.00 01 01**



Locking system for version with rollers



Simple adjustment option for height adjustment



Floor attachment with levelling unit (optionally für anchoring)

Inclining adapter



- Inclining adapter for individual connections between enclosure and ROSE suspension systems or for wall mounting
- Simply handling by open design
- Stepped adjuster allows inclination to suit your application

Included in delivery:

Inclining adapter, pre-assembled flange plates, sealings and mounting material

Technical data

Material:

Sheet steel 2,5 mm

Bellow: PVC, RAL 9005 (jet black)

Painting

Powder coating

Colour:

RAL 9005, jet black

Temperature range:

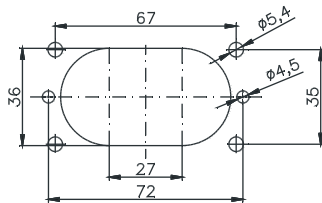
-40°C to +60°C

Inclining adapter

Product range

for Limanda and other small enclosures	Order No.	Weight (g)
Inclining adapter for mounting onto walls or machine	50.02 00 01	1286
Inclining adapter for suspension system GT 48/2 (tube)	50.02 00 02	986
Inclining adapter for suspension system GTK electronic	50.02 00 03	1004
Inclining adapter for suspension system GT 48/2 or GTK electronic	50.02 00 04	900
Inclining adjustment	50.02 01 01	1050
Inclining adapter stainless steel	50.02 10 01	1286
for large Commander enclosures (Commander 1/1F, SL 3000)		
Coupling A-DN	49.85 03 01	1600
Flange A-DN	49.85 05 00	600

Drilling pattern for Limanda or other enclosures (Order No. 50.02 00 01 to 50.02 00 04)



Inclining adapter

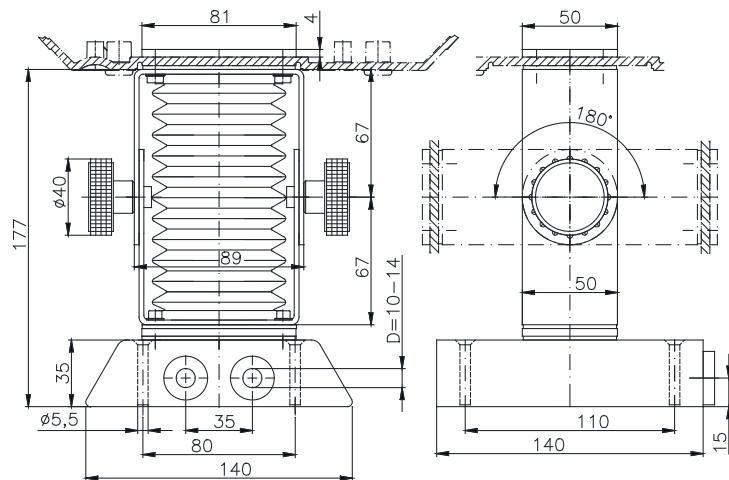
for mounting onto wall or machine

Sheet steel parts for inclined mounting of a Limanda or other enclosure. Two cable exits optionally top or bottom with rubber nozzles. Dust and damp protection by bellow (black).

Enclosure rating IP 54 up to fastening flange.

Swivelling range 180° in 22.5° steps, adjusted with knurled screw.

Order No. **50.02 00 01**



Inclining adapter

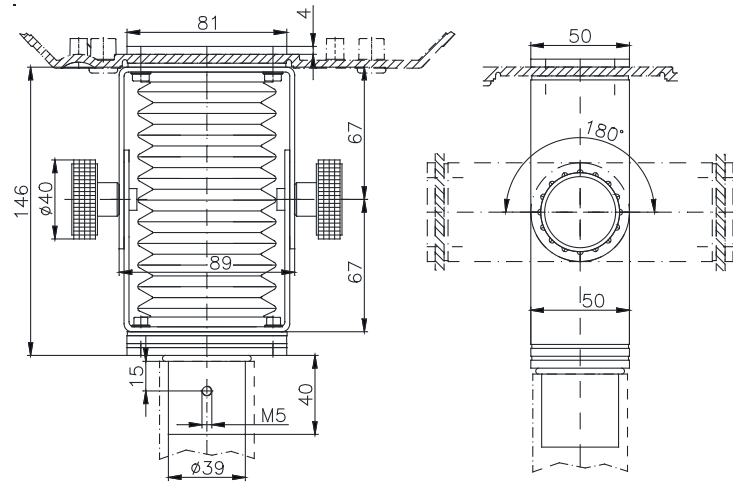


Inclining adapter for GT 48/2 (tube)

Sheet steel parts for inclined mounting of a Limanda or other enclosure. Mounted directly onto the circular tube of the GT 48/2 rack system. Fastened to the tube via olive rings (the thread in the circular tube is attached afterwards). Enclosure rating IP 54 once assembled. Dust and damp protection by bellow (black).

Swivelling range 180° in 22.5° steps, adjusted with knurled screw.

Order No. **50.02 00 02**



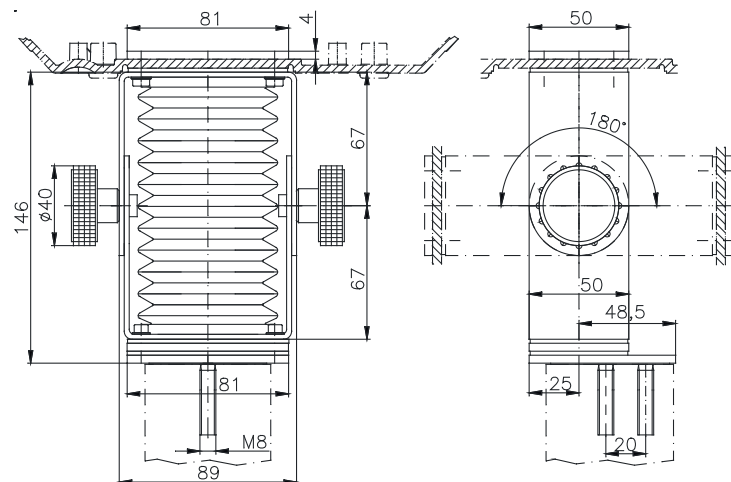
Inclining adapter for GTK electronic

Sheet steel parts for inclined mounting of a Limanda or other enclosure. Mounted directly onto the connecting tube of the GTK electronic rack system. Flange mounted onto tube with self-tapping screws.

Enclosure rating IP 54 once assembled. Dust and damp protection by bellow (black).

Swivelling range 180° in 22.5° steps, adjusted with knurled screw.

Order No. **50.02 00 03**

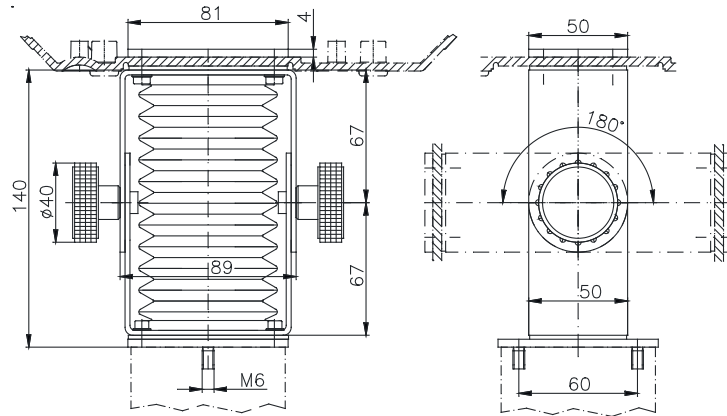




Inclining adapter for GT 48/2 / GTK electronic

Sheet steel parts for inclined mounting of a Limanda or other enclosure. Attached to the GT 48/2 or GTK electronic rack system flange coupling with flange plate.
Enclosure rating IP 54 once assembled. Dust and damp protection by bellow (black).
Swivelling range 180° in 22.5° steps, adjusted with knurled screw.

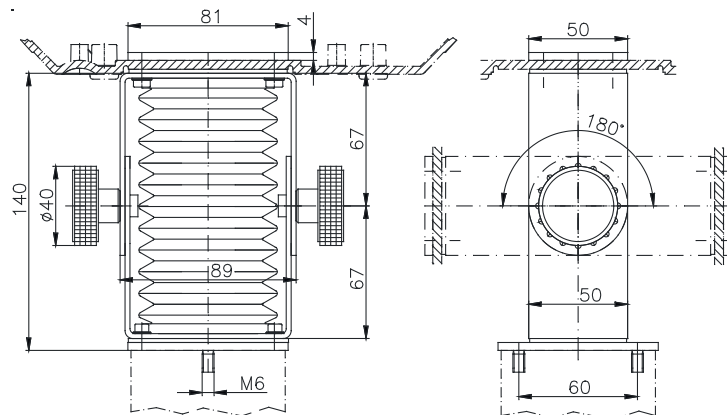
Order No. **50.02 00 04**



Inclining adapter stainless steel

parts for inclined mounting of a Limanda or other enclosure. Attached to the GT 48/2 or GTK electronic rack system flange coupling with flange plate.
Enclosure rating IP 54 once assembled. Dust and damp protection by bellow (black).
Swivelling range 180° in 22.5° steps, adjusted with knurled screw.

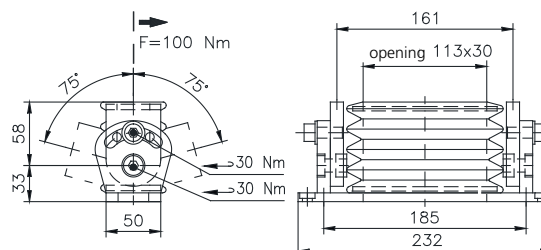
Order No. **50.02 10 01**



Inclining adjustment

Continuously variable inclining system (+/- 75°) for Commander systems.
System consisting in aluminium elements with bellow.
Scope of supply: base unit without adaptation plate

Order No. **50.02 01 01**



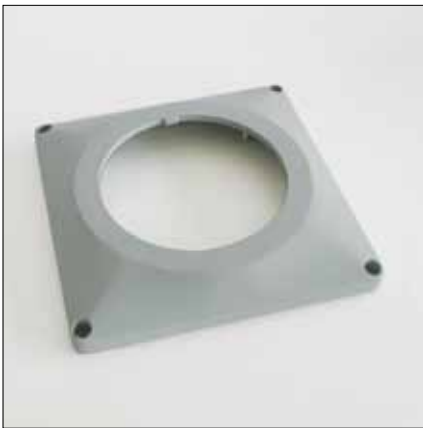
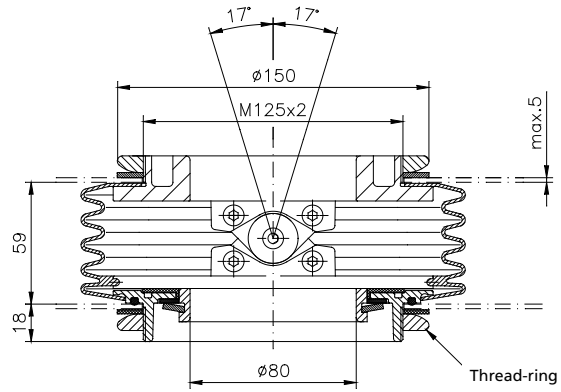
Inclining adapter



A-DN coupling

Swivelling and inclining coupling for direct connection of enclosures. Dust and damp protection by bellow (black). Enclosure rating IP 65
 Swivelling range 330°
 Inclination range +/- 17°

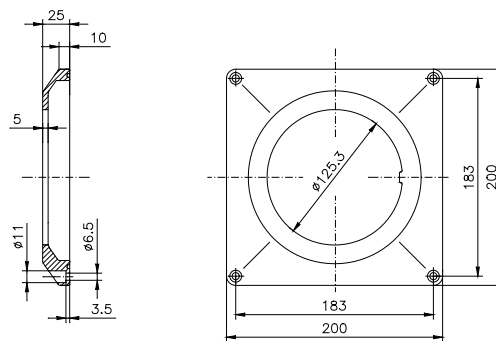
Order No. **49.85 03 01**



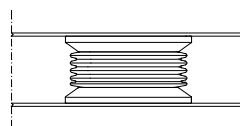
A-DN flange

Cast aluminium part for flange mounting of A-DN coupling, with twist protection, powdered light grey RAL 7035.

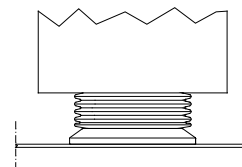
Order No. **49.85 05 00**



Mounting of A-DN coupling with two flanges



Mounting of A-DN coupling with one flange



Enclosure selection criteria

Enclosures are generally required to protect the installed equipment from external hazards. These hazards can be varied in nature and are of decisive significance when determining the criteria for the choice of an enclosure.

Essential for appraising whether an enclosure meets safety requirements is a precise definition of the hazards expected at an installation location. The most important conditions to consider are the following:

1. Protection against contact and penetration of foreign bodies
2. Protection against water penetration
3. Protection against internal and external radio interference
4. Chemical resistance
5. Temperature stability
6. Impact resistance
7. Corrosion resistance

Enclosure ratings

ROSE enclosures are classified in enclosure rating in accordance with the generally applicable guidelines contained in EN 60529 and IEC 144.

The enclosure rating is indicated by an abbreviation, which is always composed of the two letters IP and two digits relating to the protection level.

Protection class for contact and foreign bodies protection

First digit	Designation
0	No protection
1	Protection against large foreign bodies
2	Protection against medium-sized foreign bodies
3	Protection against small foreign bodies
4	Protection against granular foreign bodies
5	Protection against dust deposits
6	Protection against dust entry

Water protection class

Second digit	Designation
0	No protection
1	Protection against vertical falling drip water
2	Protection against obliquely falling drip water
3	Protection against water spray
4	Protection against splashing water
5	Protection against water jets
6	Protection when flooded
7	Protection when immersed
8	Protection when submerged

Note: The enclosure ratings given apply to unmodified enclosures as supplied. Wear and tear and temperature fluctuations may lead to a reduction in the enclosure rating.

Temperature stability

The definition of temperature stability for enclosures is based on the maximum continuous temperature at which the enclosure remains dimensionally stable and the enclosure rating remains guaranteed. The permissible brief peak temperatures are often considerably higher.

Corrosion resistance of aluminium enclosures

The corrosion resistance of aluminium enclosures is rated as good, even without special surface treatment. The use of special aluminium alloys with low copper content increases the corrosion resistance.

Additional treatments including

- chromating
 - lacquering (powder coating) and
 - the combination of chromating and lacquering
- further increase corrosion resistance.

We offer the following for critical external areas:

SWB version (seawater-resistant):

Purified - chromated - powder-coated

Standard colour RAL 5009, other colours on request.

For application areas with extreme UV radiation we recommend coating with a special Polyester powder.

SBG/SBGL version only for wet painting processes

SBG = Purified - alodine-primed

SBGL = Purified - alodine-primed - painted

Allgemeine technische Informationen

Chemical resistance Enclosure materials

Chemicals	Aluminium	Stainless steel	Polycarbonate	Polyester	Polystyrene	Polyamide
Acetone	+	+	-	-	-	•
Formic acid	•	+	30 %	10 %	•	-
Ammonia	+	+	-	-	+	20 %
Petrol	+	+	•	+	•	+
Benzene	+	+	-	+	-	-
Brake fluid	/	/	-	+	/	60°
Butane	+	/	+	/	-	+
Butanol	/	/	/	+	/	+
Calcium chloride	+	+	+	+	+	+
Chloral benzene	+	/	-	+	-	•
Diesel öoil	/	/	•	+	•	/
Vinegar	+	+	10 %	40 %	+ max. 50 %	-
Formaldehyde	+	+	/	30 %	+ max. 40 %	+
Freon 113	/	/	+	+	/	/
Fruit juice	/	+	+	+	/	+
Glycerine	+	+	•	+	+	+
Fuel oil	+	+	•	+	•	+
Hydraulic oil	/	/	+	+	•	+
Caustic potash solution	/	+	-	-	+ max. 50 %	-
Potassium chloride	•	+	+	+	+	+
Potassium hydroxide	-	+	/	-	+	/
Linseed oil	+	+	+	+	+	+
Methane	+	+	-	-	+	•
Methylene chloride	+	+	-	-	-	-
Lactic acid	+	+	10 %	+	+ max. 80 %	10 %
Mineral oils	/	/	+	+	+	+
Motor oils	/	/	+	+	+	+
Sodium carbonate	•	+	+	+	+	+
Sodium chloride	•	•	+	+	+	10 %
Sodium hydroxide	+	+	/	-	/	/
Soda lye	/	+	-	40 %	+ max. 50 %	10 %
Nitric acid	+	+	10 %	10 %	+ max. 25 %	-
Hydrochloric acid	/	+	20 %	+	+ max. 10 %	-
Lubricating oil	+	+	+	+	/	+
Carbon bisulphide	+	+	-	-	-	•
Sulphuric acid	•	+	50 %	70 %	+ max. 50 %	-
Suds	/	+	•	+	/	+
Cleansing agent	/	+	+	/	/	/
Terpentine oil	/	/	/	+	-	+
Carbon tetrachloride	+	/	/	+	-	•
Toluene	+	/	-	+	-	+
Trichlorethylene	+	/	/	-	-	-
Water (dest. water, river-, mains-, sea water)	/	+	+	+	+	+
Tartaric acid	/	/	10 %	+	+	+
Xylene	+	/	-	+	-	+
Zinc sulfate	•	/	+	+	+	/
Citric acid	+	/	10 %	+	+	10 %

The investigations, unless stated otherwise, were carried out at room temperature. Resistances can vary when two different materials come into contact with one another. We cannot therefore accept liability for this data.

Explanation of symbols

- + resistant to all concentrations
- % resistant against maximum % concentration
- C° resistant to maximum C°
- limited resistance
- not resistant
- / no information

General technical information

Chemical resistance Enclosure seals and accessories

Chemicals	Chloroprene	EPDM	NBR	Pocane	Polyurethane	PVC	Silicone
Acetone	+	+	-	+	-	-	•
Formic acid	+	+	-	10 %	/	< 50 %	•
Ammonia	+	+	+	10 %	/	•	+
Petrol	+	•	+	+	+	+	+
Benzene	-	-	-	+	+	-	-
Brake fluid	•	-	/	+	/	/	+
Butane	+	/	+	+	/	50 %	-
Butanol	+	/	-	+	/	•	-
Calcium chloride	/	/	/	10 %	/	+	/
Chloral benzene	-	-	-	-	-	-	-
Diesel oil	•	•	/	+	+	•	•
Vinegar	-	/	-	10 %	/	25 %	-
Formaldehyde	-	/	+	/	/	40 %	+
Freon 113	+	/	+	+	/	/	/
Fruit juice	+	+	/	+	+	+	+
Glycerine	+	+	+	+	+	+	+
Fuel oil	•	•	+	+	+	•	•
Hydraulic oil	+	/	/	+	/	/	•
Caustic potash solution	+	/	/	10 %	/	+	/
Potassium chloride	+	+	+	10 %	+	+	+
Potassium hydroxide	+	+	+	-	-	/	•
Linseed oil	+	+	+	+	+	+	•
Methane	+	/	•	+	/	/	+
Methylene chloride	-	/	-	-	-	-	-
Lactic acid	+	+	+	/	/	10 %	/
Mineral oils	•	•	+	+	+	+	+
Motor oils	•	•	+	+	+	/	+
Sodium carbonate	/	/	/	10 %	/	/	/
Sodium chloride	+	+	+	10 %	+	+	+
Sodium hydroxide	+	+	•	-	-	•	•
Soda lye	50 %	/	-	/	/	60 %	-
Nitric acid	•	+	•	10 %	-	30 %	-
Hydrochloric acid	+	+	< 65 % •	10 %	-	30 %	/
Lubricating oil	•	•	+	+	+	+	+
Carbon bisulphide	-	/	-	+	/	•	-
Sulphuric acid	50 %	/	25 %	10 %	/	80 %	25 %
Suds	+	/	+	10 %	•	•	+
Cleansing agent	+	•	/	+	•	/	+
Terpentine oil	-	/	+	+	/	+	-
Carbon tetrachloride	-	-	-	+	-	•	-
Toluene	-	-	-	•	-	-	-
Trichlorethylene	-	-	-	•	-	-	-
Water (dest. water, river-, mains-, sea water)	+	+	80 C°	+	+	40 C°	+
Tartaric acid	+	+	+	/	+	10 %	+
Xylene	-	-	-	•	-	-	-
Zinc sulfate	+	+	+	/	/	40 %	+
Citric acid	+	+	+	10 %	/	10 %	+

The investigations, unless stated otherwise, were carried out at room temperature. Resistances can vary when two different materials come into contact with one another. We cannot therefore accept liability for this data.

Explanation of symbols

- + resistant to all concentrations
- % resistant against maximum % concentration
- C° resistant to maximum C°
- limited resistance
- not resistant
- / no information

EMV in der Gehäusetechnik

General

In electronic engineering, enclosures are required to fulfil two tasks:

- to protect equipment against external mechanical hazards and radio interference
- to protect the environment against mechanical and electrical hazards or radio interference caused by equipment

Electromagnetic compatibility (EMC) is becoming an increasingly important factor in the choice of enclosures due to sustained advances in the development of electronic components and increased density of components on circuit boards - this being connected with increased emission of electromagnetic radio interference into the environment.

Statutory regulations

EU directive (05.89/336/EWG), issued in May 1989 within the framework of the rationalisation of European standards, came into force in Germany in the EMC act (EMVG) on 9.11.1992.

This act applies to all devices which may cause radio interference or whose operation can be affected by this interference.

On 1.1.1996 the EMC Directive came into force Europe-wide - all new electrical and electronic devices traded within the EU must comply with these conditions.

As an outward sign of compliance with all EU-relevant laws (EMC act and other design principles) devices must display the CE conformity symbol.

Enclosure requirements

Enclosures in themselves are not covered by the EMC legislation as they are not by definition electrical or electronic devices.

Enclosures are however largely responsible for the strength of radiation emissions and/or interference (outgoing or incoming interference) of a device. The enclosure material is also a decisive factor in the screening effect, which is the combined reflection and absorption damping properties of an enclosure.

Plastics alone have no filtering effect in the case of radio interference. Screening characteristics can be achieved with additional expensive treatments (metal vaporisation or the application of a conductive coating).

Metal enclosures on the other hand offer a highly effective basic protection against radio interference without any further treatment. Large surface area contact of individual enclosure parts (cover, enclosure sections) is an important factor in this.

Where special safety requirements exist, EMC compatibility can be increased by

- conductive seals,
- contact-uninsulated ends and
- EMC-compliant cable connections.

Finishing service



drilling



tapping



chromating



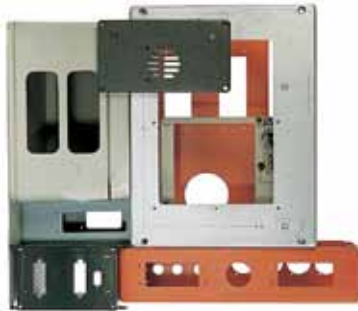
painting



punching



embossing



printing



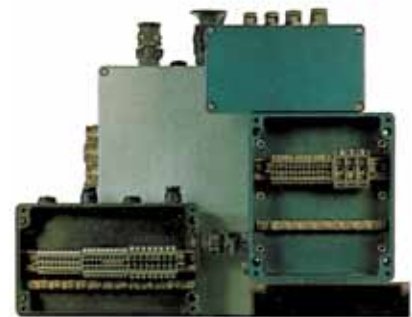
engraving



milling



attachments



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