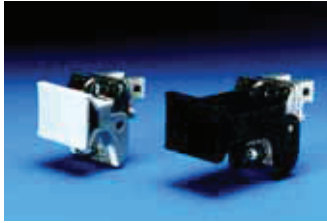# Injector/extractor handles

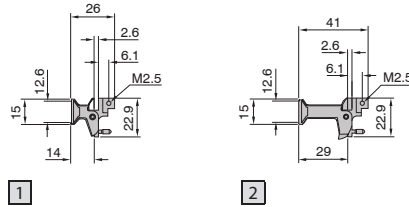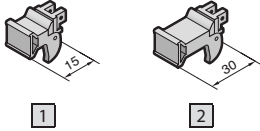## Extractor handle type I and type II

Suitable for flat front panels/U-channel front panels
With removal function
May be used in combination with horizontal rails with 10 mm extension.

Supply includes:
Assembly parts.

Note:
With 3 U, only one extractor handle is required.

1 Type I extractor handle, 15 mm

Colour	Packs of	Model No. RP
Grey	1	3685.587
Black	1	3685.589

2 Type II extractor handle, 30 mm

Colour	Packs of	Model No. RP
Grey	1	3685.588
Black	1	3685.590

✛ Accessories:

Identification strips   for extractor handles, see page 595.

Injector/extractor handle type IV

Handles with micro-switch
For inserting and removing connectors with a large number of pins.
● Insertion/removal function
● Integral microswitch for "live insertion" applications
● Self-activation of the micro-switch during insertion/removal
● ESD pin to dissipate static charges before contacting the connectors and for precise positioning of the board type plug-in unit
● Codeable
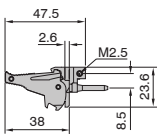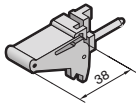● Integral PCB attachment
● Self-locking
● Bayable.

Handle without micro-switch
Description see above. Micro-switch, may be retrofitted.

Supply includes:
1 handle without or with micro-switch, assembly parts.

Note:
● Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 155, 156.
● With 3U front panels, only one extractor handle is required.

Handles with micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	top	1	3686.905
Grey	bottom	1	3686.904
Black	top	1	3686.907
Black	bottom	1	3686.906

Handle without micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	top	1	3686.901
Grey	bottom	1	3686.900
Black	top	1	3686.903
Black	bottom	1	3686.902

✛ Accessories:

Keys
Keyable guide rails
Micro-switches
Connector pin for baying

Injector/extractor handle type IV

8 HP, bayed
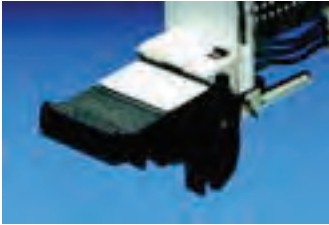Suitable for 4 HP front panels that must be connected to each other mechanically.

Supply includes:
2 bayed handles, fully assembled.

Colour	Installation	Packs of	Model No. RP
Black	bottom	1	3686.908
Black	top	1	3686.909

✛ Accessories:

Connector pin for baying,

Identification strips

for type I, II extractor handle and type IV
injector/extractor handle
Width 4 HP

Packs of	Model No. RP
100	3684.328

**Injector/extractor handle
type IVs**

with push-button
For inserting and removing connectors with
a large number of pins. A metal insert ensures
reliable functioning, even at forces of up to 815 N.

● Insertion/removal function
● Push-button for locking and unlocking the
  board type plug-in unit (cannot be extracted in
  the locked position)
● Optionally with $1/2$ HP offset PCB attachment,
  e.g. for component mounting on both sides
● Optional integral micr o-switch for "live inser-
  tion" applications
● ESD pin to dissipate static charges before
  contacting the connectors and for precise
  positioning of the board type plug-in unit
● Codeable
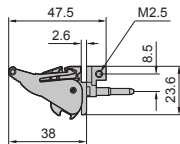● Integral PCB attachment
● Bayable.

Material:
Plastic/metal

Supply includes:
Assembly parts.

Note:
● Insertion only when used with front horizontal
  rails, with 10 mm extension (B),

● With 3 U front panels, only one extractor
  handle is required.

Handles without offset

Installation	Packs of	Model No. RP
top	1	3688.770
bottom	1	3688.771

Handles with $1/2$ HP offset

Installation	Packs of	Model No. RP
top	1	3688.772
bottom	1	3688.773

Accessories:

Keys,
Keyable guide rails
Keyable guide rails with $1/2$ HP offset
Micro-switches
Connector pin for baying

Connection pin

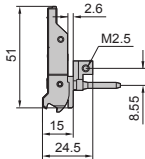**for injector/extractor handles, types IV,
IVs and VII**
The connection pin can be used to connect
injector/extractor handles, types IV, IVs and VII.

Material:
Steel

Packs of	Model No. RP
20	3685.319

Injector/extractor handles

Injector/extractor handle type VII

Plastic (telecom)
For inserting and removing connectors with a large number of pins. This handle was specifically designed for use in telecom applications.

● Insertion/removal function
● Optionally with $^1/_2$ HP offset PCB attachment, e.g. for component mounting on both sides
● Minimum front space requirements, due to fold-up handle
● Codeable
● Optional integral micro-switch for "live insertion" applications
● ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
● Large labelling area on the front.

Material:
Plastic

Supply includes:
Assembly parts.

Note:
Insertion only when used with front horizontal rails, with 10 mm extension (B),

Handles without offset

Installation	Packs of	Model No. RP
top	1	3688.784
bottom	1	3688.785

Handles with $^1/_2$ HPoffset

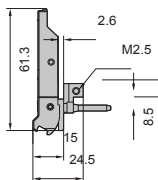| Installation	Packs of	Model No. RP
top	1	3688.780
bottom	1	3688.781

⊞ Accessories:

Keys,
Keyable guide rails
Keyable guide rails with $^1/_2$ HP offset
Micro-switches
Connector pin for baying

Injector/extractor handle type VII

Metal (telecom)
For inserting and removing connectors with a large number of pins (up to 815 N). This handle was specifically designed for use in telecom applications.

● Insertion/removal function
● Optionally with $^1/_2$ HP offset PCB attachment, e.g. for component mounting on both sides
● Minimum front space requirements, due to fold-up handle
● Codeable
● Optional integral micro-switch for "live insertion" applications
● ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
● Metal design for use in aggressive atmospheres.

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Note:
Insertion only when used with front horizontal rails, with 10 mm extension (B),

Handles without offset

Installation	Packs of	Model No. RP
top	1	3688.790
bottom	1	3688.791

Handles with $^1/_2$ HPoffset

Installation	Packs of	Model No. RP
top	1	3688.786
bottom	1	3688.787

⊞ Accessories:

Keys
Keyable guide rails
Keyable guide rails with $^1/_2$ HP offset
Micro-switches
Connector pin for baying

Micro-switch

For "live insertion" applications.
Installation in injector/extractor handles, types IV, IVs and VII. May also be retrofitted.

Technical specifications:
Switching load: 50 mA 30 V DC
Service life/switching cycles:
At nominal load: 30,000
mechanical: 50,000

Packs of	Model No. RP
10	3684.410

⚠ Also required:

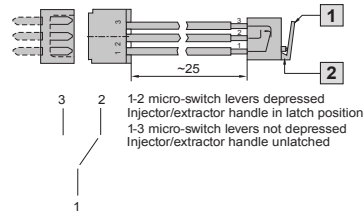Micro-switch mounting clip

Front panels, handles

Micro-switch

with cable and connector
For "live insertion" applications.
Installation in injector/extractor handles, types IV,
IVs and VII.

Supply includes:
Micro-switch, connector
type Molex 51021-0300,
mounting clips, 3 cables,
25 mm x #32 AWG,
fully assembled.

Packs of	Model No. RP
1 set	3686.536

! **Also required:**

Micro-switch mounting clip

Micro-switch:with cable and connector

1 Lever not depressed
2 Lever hinge
3 Lever contact point

1-2 micro-switch levers depressed
Injector/extractor handle in latch position
1-3 micro-switch levers not depressed
Injector/extractor handle unlatched

X 2:1

E 7.25
3.7
(2)
3 2 1
(6.6)
9.9
(5.5)
8.5
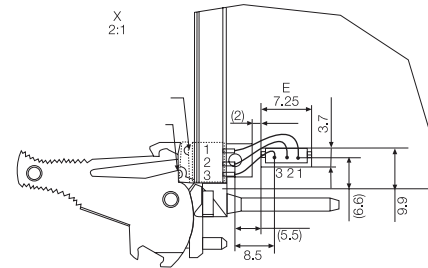
Micro-switch mounting clip
For mounting micro-switches in handles.

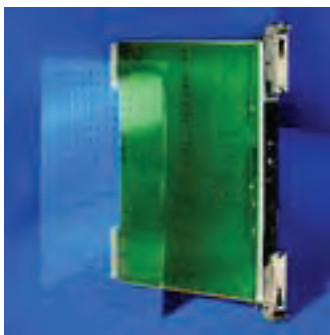| Packs of	Model No. RP
10	3684.411

Plastic covers

for PCBs
For mechanical protection of the component side
and of the EMC gaskets.
Attachment holes as per CPCI or VME-specifica-
tions. Optionally available as perforated or solid
version.

Material:
0.3 mm plastic, anti-static
Maximum temperature up to 65°C

[1] 0.5 mm plastic, transparent, anti-static
UL 94-V0, maximum temperature up to 65°C

[2] 0.5 mm plastic, black, anti-static UL 94-V0,
maximum temperature up to 120°C

For PCBs	Packs of	Model No. RP			
		for cPCI			for VME
		perforated [1]	solid [1]	solid	solid
3U x 160 mm	1	3687.932	3686.572	3685.966	3685.626
	5	–	–	–	3685.279
3U x 220 mm	1	–	–	–	3685.805
	5	–	–	–	3685.266
6U x 80 mm	1	3687.933	3686.573	3686.037	3686.146
6U x 160 mm	1	3687.934	3686.574	3685.967	3685.627
	1	9905.574 [2]	9905.990 [2]	–	–
	5	–	–	–	3685.280
6U x 220 mm	1	–	–	–	3685.824
	5	–	–	–	3685.000
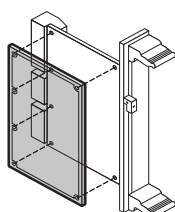
! **Also required:**

Required for mounting the perforated
cPCI covers:

Mounting clips

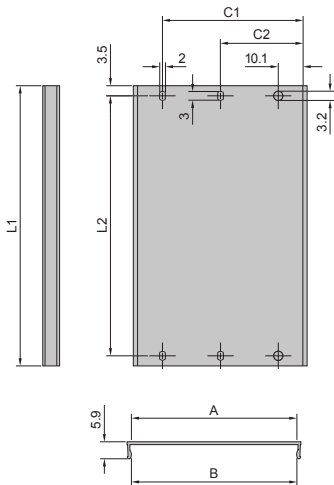| Packs of	Model No. RP
100	3687.955

Front panels, handles
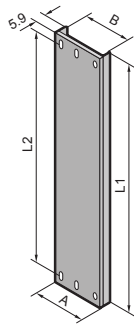
Front panels
for type III extractor handle

Material:
1.0 mm extruded aluminium section

Surface finish:
Untreated

| HP	A mm	W (B) mm	C1 mm	C2 mm	Model No. RP		
					3U	6U	9U
3	15.20	12.20	–	–	**3685.548**	**3685.555**	**–**
4	20.22	17.20	–	–	**3685.549**	**3685.556**	**3685.562**
5	25.28	22.28	–	22.68	**3685.550**	**3685.557**	**3685.563**
6	30.36	27.36	–	25.22	**3685.551**	**3685.558**	**3685.564**
8	40.52	37.52	–	30.30	**3685.552**	**3685.559**	**3685.566**
10	50.68	47.68	40.46	25.22	**3685.553**	**3685.560**	**3685.567**
12	60.84	57.84	50.62	30.30	**3685.554**	**3685.561**	**3685.568**
L1 mm					97.00	230.35	363.70
L2 mm					90.00	223.35	356.70

Type III handle, extractor

Material:
Fibreglass-reinforced polycarbonate
Base section nickel-plated ABS

Colour:
Grey

HP	Packs of	Model No. RP
3	1	**3685.591**
4	1	**3685.592**
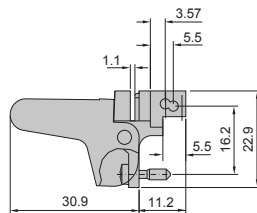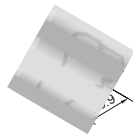
Covers
for panel and spaces
Material:
Fibreglass-reinforced polycarbonate

HP	Width mm	Packs of	Model No. RP
1	5	1	**3687.529**
2	10.08	1	**3687.530**
4	20.24	1	**3687.531**

Front panels, handles

Universal holder
for front panel support

Material:
Nickel-plated plastic

HP	Packs of	Model No. RP
4	1	**3687.545**

Flat front panels
with type V handle and PCB holder
Complete modular systems

Material:
Front panel: 2.5 mm Aluminium, natural anodised
Handle: Aluminium, natural anodised
PCB holder: Polycarbonate

Supply includes:
1 front panel,
1 handle (2 with 6 U),
1 PCB holder (2 with 6 U),
assembly parts.

| HP	a mm	W (B) mm	Model No. RP 3U H = 128.7	Model No. RP 6U H = 262.05
3	14.9	–	**3652.000**	**3652.200**
4	20.0	–	**3652.010**	**3652.210**
5	25.1	–	**3652.020**	**3652.220**
6	30.1	–	**3652.030**	**3652.230**
7	35.2	–	**3652.040**	**3652.240**
8	40.3	–	**3652.050**	**3652.250**
10	50.5	35.6	**3652.060**	**3652.260**
12	60.6	45.7	**3652.070**	**3652.270**
14	70.8	55.9	**3652.080**	**–**

☑ Available with optional metal screw collars.

➕ **Accessories:**
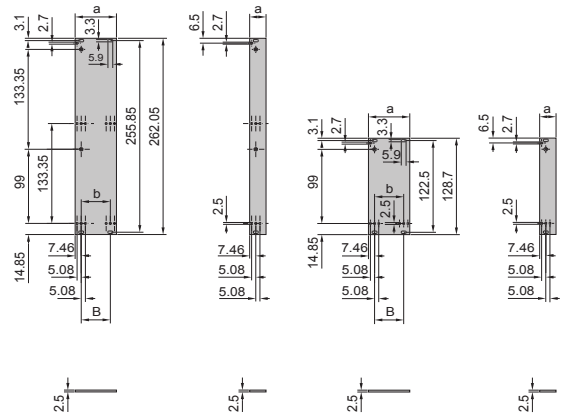
Identification strips for handles,
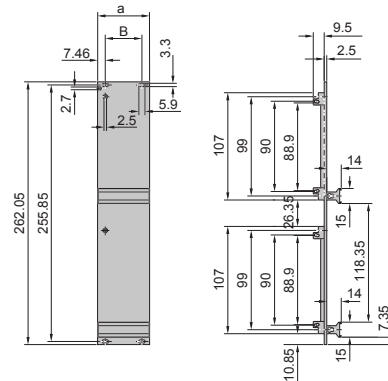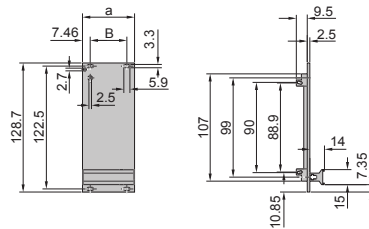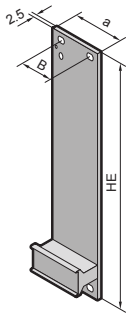
Front panels, handles
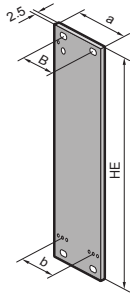
Flat front panels
for type V and VI handle

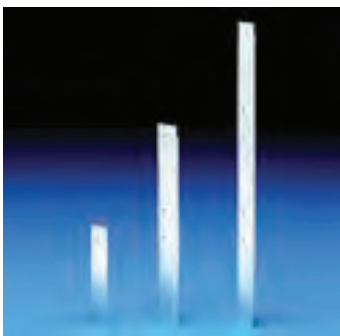**Material:**
2.5 mm Aluminium, anodised

HP	a mm	W (B) mm	b mm	Packs of	Model No. RP 3U	Model No. RP 6U
3	14.9	–	–	1	**3685.569**	**3685.578**
4	20.0	–	–	1	**3685.570**	**3685.579**
5	25.1	–	–	1	**3685.571**	**3685.580**
6	30.2	–	15.2	1	**3685.572**	**3685.581**
7	35.2	–	20.3	1	**3685.573**	**3685.582**
8	40.3	–	25.4	1	**3685.574**	**3685.583**
10	50.5	35.6	35.6	1	**3685.575**	**3685.584**
12	60.6	45.7	45.7	1	**3685.576**	**3685.585**
14	70.8	55.9	55.9	1	**3685.577**	**3685.586**

✓ Available with optional metal screw collars.

Also required:
Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,

Accessories:
Handles type V
Handles type VI

U-channel front panels
for type V and VII handle
Material:
2.5 mm aluminium, clear-chromated

Supply includes:
1 vertical EMC gasket, version 1.

HP	a mm	W (B) mm	Packs of	Model No. RP 3U	Model No. RP 6U
4	20.0	–	1	**3687.655**	**3687.660**
6	30.2	–	1	**3687.656**	**3687.661**
8	40.3	–	1	**3687.657**	**3687.662**
10	50.5	35.6	1	**3687.658**	**3687.663**
12	60.6	45.7	1	**3687.659**	**3687.664**

EMC

Also required:
Slotted centering screws,
packs of 100, Model No. RP 3687.050
Posidrive centering screws,
packs of 100, Model No. RP 3687.051

Accessories:
Handles type V
Handles type VI

Front panels, handles
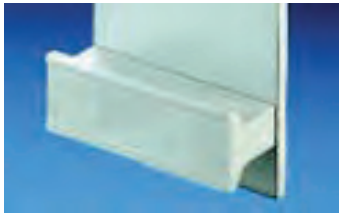
Type V handle
Plastic
Material:
Plastic
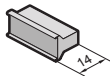
HP	Colour	Packs of	Model No. RP
3	Grey	1	**3685.490**
4	Grey	1	**3685.491**
8	Grey	1	**3685.492**
12	Grey	1	**3685.493**
20	Grey	1	**3685.494**
3	Black	1	**3685.495**
4	Black	1	**3685.496**
8	Black	1	**3685.497**
12	Black	1	**3685.498**
20	Black	1	**3685.499**

⚠ **Also required:**

Mounting kit,
packs of 1 set, Model No. RP 3687.519

Identification strips
for type V handle, plastic
self-adhesive

HP	Packs of	Model No. RP
24	1	**3687.693**

Tpe V handle
Aluminium
Material:
Aluminium, anodised.

6.6
2.3
1.4
15
12
8
3.5
14
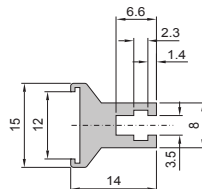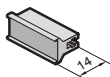
HP	Model No. RP	HP	Model No. RP
3	3685.595	12	**3685.602**
4	3685.596	14	**3685.603**
5	3685.597	21	**3685.761**
6	3685.598	28	**3685.762**
7	3685.599	42	**3685.763**
8	3685.600	1 m	**3685.604**
10	3685.601		

✓ Custom lengths available.

⚠ **Also required:**

Mounting kit
packs of 1 set, Model No. RP 3687.146
(from 6 HP 2 packs required)

Identification strips
for type V handle, aluminium
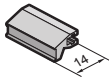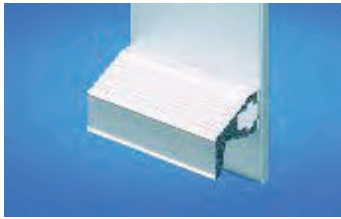For individual labelling of the handles.
Material:
0.5 mm Aluminium, anodised

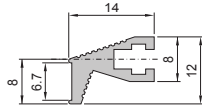| HP	Packs of	Model No. RP
3	1	**3685.746**
4	1	**3685.747**
5	1	**3685.748**
6	1	**3685.749**
7	1	**3685.750**
8	1	**3685.751**
10	1	**3685.752**
12	1	**3685.753**
14	1	**3685.754**
21	1	**3685.755**
28	1	**3685.756**
42	1	**3685.757**
1 m	1	**3685.758**
0.5 m	5	**3606.300**

✓ Custom lengths available.

Front panels, handles

Type VI handle

Aluminium

Material:
Aluminium, anodised

HP	Model No. RP	HP	Model No. RP
3	3685.605	12	**3685.612**
4	3685.606	14	**3685.613**
5	3685.607	21	**3685.614**
6	3685.608	28	**3685.615**
7	3685.609	42	**3685.616**
8	3685.610	84	**3685.617**
10	3685.611	1 m	**3685.618**

☑ Custom lengths available.

Also required:

Mounting kit
packs of 1 set, Model No. RP 3687.146
(from 6 HP 2 packs required)

PCB holder kit

For attaching the PCB to front panels with handle types I, II, IV, IVs, VII.

Material:
Die-cast

Note:
Only required at the top with 3U front panels.

Packs of	Model No. RP
10	**3685.198**

Also required:

For securing PCBs to PCB holders:
Pan-head screws
packs of 100, Model No. RP 3654.320
For attaching the front panel to the PCB holder:
Oval head screw
packs of 100, Model No. RP 3685.282.

PCB holder

For front panels
For attaching PCBs to front panels
(handle type V, VI).

Material:
Noryl

Supply includes:
Assembly parts.

Packs of	Model No. RP
10	**3606.330**