



## 2 - Control stations, enclosures and installation system

### Control stations and enclosures

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### Installation system

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Applications	Control stations, complete or for user assembly			Empty enclosures	
					
Features	Empty, drilled for user assembly, or complete For control and signalling units Harmony style 5		Empty, drilled for user assembly, or complete For monolithic control and signalling units Harmony style 7	Elbowed, empty, drilled For mounting on vertical support	Empty, drilled or undrilled
Material	Polycarbonate		Polypropylene	Aluminium alloy	Zinc or aluminium alloy
Colour	Yellow lid Light grey base	Dark grey lid Light grey base	Light grey lid Light grey base	Dark grey or yellow lid (enclosure with 1 cut-out) Light grey base	<b>XAP M:</b> <input type="checkbox"/> blue lid <input type="checkbox"/> Blue base <b>XAP J:</b> <input type="checkbox"/> yellow lid <input type="checkbox"/> blue base
Number of cut-outs for Ø 22 control and signalling units	1, 2, 3, 4 or 5	1, 2 or 3 (complete enclosures) 1 to 5 (empty enclosures)	1, 2 or 3 (complete enclosures) 1, 2 or 3 (empty enclosures)	1 to 7	1, 2, 3, 4, 6, 8 or 12
Degree of protection	IP 65	IP 65	IP 40	IP 65	IP 65
Function	Emergency stop	Start or Stop Start-Stop with pilot light Movement control	Start or Stop Movement control	–	–
Cable entries	Knock-outs			Via opening in rear of enclosure	Drilled
Type references	<b>XAL K</b>	<b>XAL D</b>	<b>XAL E</b>	<b>XAM W●</b>	<b>XAP M, XAP J</b>
Page(s)	2/9 and 2/12	2/8, 2/10 to 2/12	2/32	2/36	2/37 and 2/38

Empty enclosures		Flush mounting enclosures	Key operated control stations	Emergency stop and fire alarm stations	Pendant control stations
				 	 
Empty, drilled	Empty, drilled or undrilled	Front plate	With key lock	Emergency stop station: conforms to NF C 15-100 Fire alarm stations: <input type="checkbox"/> buildings type: semi-recessed mounting <input type="checkbox"/> industry type: wall mounting	Stations: <input type="checkbox"/> complete "ready for use" or <input type="checkbox"/> variable composition
Aluminium alloy or sheet steel	Polyester	Brushed aluminium	Zinc alloy	Emergency stop station: zinc alloy Fire alarm stations: <input type="checkbox"/> buildings type: plastic <input type="checkbox"/> industry type: zinc alloy	Polypropylene or polyester (depending on model)
Blue lid and base	Coloured grey throughout	Unpainted aluminium	Grey	Red cover and base	Yellow
8, 16, 24, 30 or 40	1, 2, 4, 8 or 16	1 to 5	–		Stations: <input type="checkbox"/> complete "ready for use": 1 to 8 <input type="checkbox"/> variable composition: 1 to 12
IP 54	IP 65	IP 65	IP 54	Emergency stop stations: IP 54 Fire alarm stations: <input type="checkbox"/> buildings type: IP 40 <input type="checkbox"/> industry type: IP 54	IP 65
–	–	–	Start-Stop	Emergency stop and fire alarm	Complete stations "ready for use": Emergency stop, control of single-speed and/or 2-speed motors Variable composition stations
Drilled	Undrilled	Knock-outs	Tapped for cable gland		Via cable sleeve
<b>XB2 S</b>	<b>XAP A</b>	<b>XAP E</b>	<b>XAP S</b>	<b>XAS E, XAS P</b>	<b>XAC</b>
2/37	2/36	2/38	2/43	2/44	6/2 and 6/3

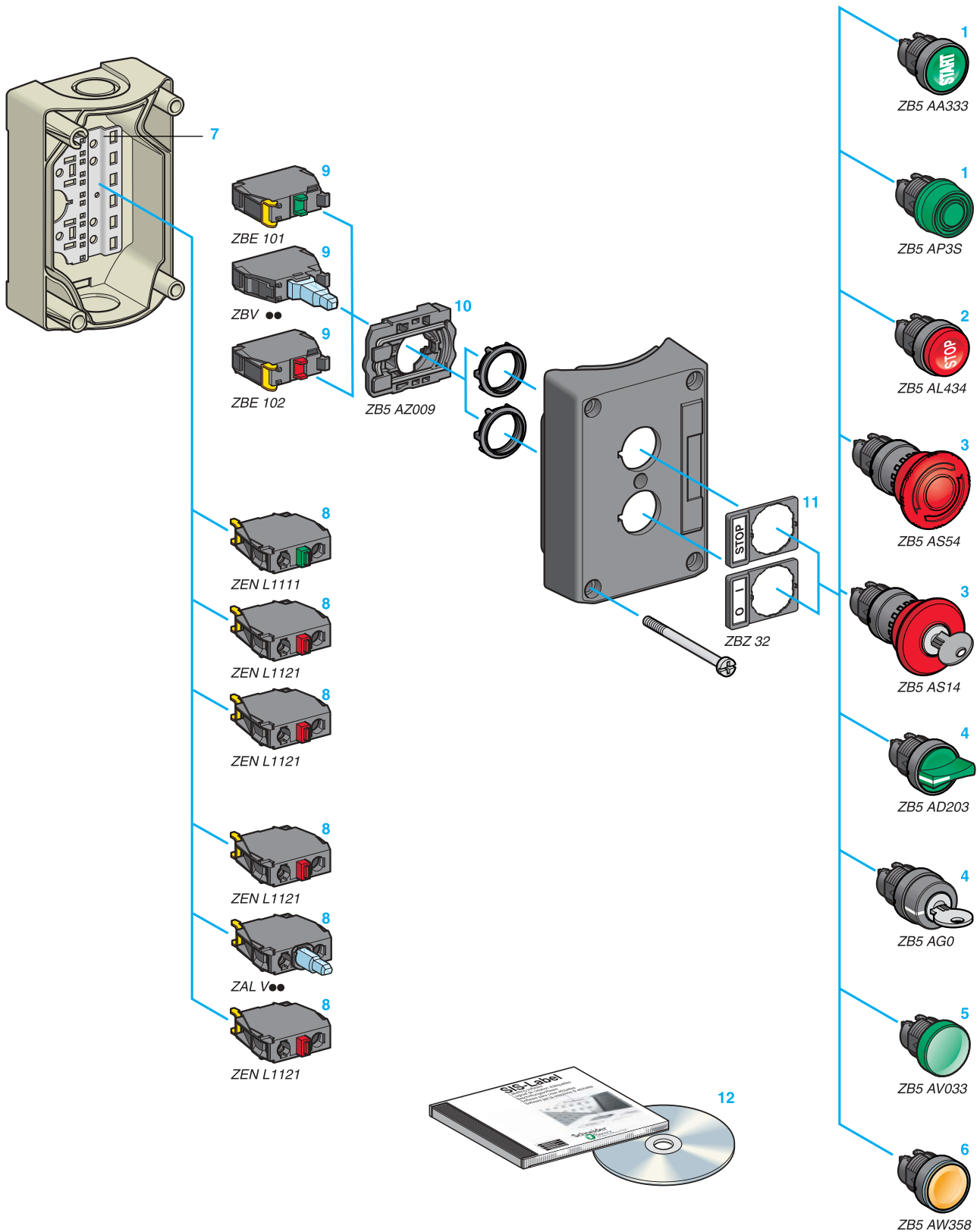
# Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

2



# Control stations and enclosures

XAL control stations for Harmony® style 5  
 Ø 22 control and signalling units  
 With double insulated bezel

XAL D and XAL K control stations are available in two forms:

- Complete.
- For customer assembly

These control stations use the plastic bezel pushbuttons, switches and pilot lights of the Harmony style 5 range, which offers a wide choice of circular and square types of head.

## Complete stations

### Pre-assembled

These are complete, ready to install, stations fitted with 1 to 3 buttons to cater for the most commonly encountered functions:

■ **Start or Stop**, with:

- 1 flush spring return pushbutton,
- 1 red, spring return, mushroom head pushbutton.

■ **Emergency stop**, with:

- 1 red, latching, mushroom head pushbutton **3** (standard or trigger action), either push-pull or turn to release, with or without key.

■ **Start-Stop**, with:

- 2 flush spring return pushbuttons,
- 1 flush spring return pushbutton **1** + 1 projecting spring return pushbutton **2**,
- 1 2-position selector switch **4** + 1 pilot light with integral red LED, if required.

■ **Two functions**, with:

- 2 flush spring return pushbuttons **1**.

■ **Three functions**, with:

- 3 flush spring return pushbuttons **1**,
- 2 flush spring return pushbuttons **1** + 1 projecting spring return pushbutton **2**,
- 2 flush spring return pushbuttons **1** + 1 red, latching, mushroom head pushbutton **3**.

These pushbuttons, switches and pilot lights comprise plastic heads from the Harmony style 5 range and electrical blocks (contact or light) **8** that are mounted in the back of the enclosure.

## Stations for customer assembly

### For customer assembly

These stations are for assembly by the user and offer a choice of 2 assembly methods:

■ **Box method**

Identical to the pre-assembled versions. The electrical blocks **8** are mounted on a metal mounting plate in the back of the enclosure **7**.

■ **Station method**

The electrical blocks **9** are mounted directly beneath the heads using a body/fixing collar **10**.

It is possible to assemble stations with 1 to 5 heads, each of which can be combined with 3 electrical blocks **8** or **9** (contact or light).

The XAL range offers a wide choice of head types for:

- Spring return pushbuttons **1** or **2**, either marked or unmarked.
- Spring return mushroom head pushbuttons.
- Latching mushroom head pushbuttons **3**.
- Selector switches with standard or long handle and key switches **4**.
- Toggle switches.
- Pilot lights **5**.
- Illuminated spring return pushbuttons **6**.
- Illuminated selector switches with standard handle.

## Accessories

### For heads

Markings can be customised by using legend holders **11** which can either be fitted with pre-marked legends or legends engraved by the user. Alternatively, paper legends (protected), prepared using "SIS Label" software **12**, or peel-off legends (supplied on sheet for marking by laser printer) can be used.

## Environment characteristics

<b>Protective treatment</b>	Standard version		"TH"
<b>Ambient air temperature around the device</b>	For storage	°C	- 40...+ 70
	For operation	°C	- 25...+ 70 unless otherwise stated
<b>Electric shock protection</b>			Conforming to IEC 60536: class II
<b>Degree of protection</b>			Conforming to IEC 60529: IP 65
			Conforming to NEMA: NEMA type 4X and 13
<b>High pressure cleaning resistance</b>		Pa	70 x 10 <sup>5</sup> (70 bar); distance: 0.1 m Temperature: 55 °C
<b>Mechanical shock protection</b>	Conforming to EN 50102		With non illuminated heads: IK 03
			With illuminated heads: IK 05
<b>Conformity to standards</b>			IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60947-5-4, IEC/EN 60947-5-5, EN 418 (trigger action Emergency Stop, see pages 2/9 and 2/16), JIS C 4520, UL 508, CSA C22-2 n° 14
<b>Product certifications</b>	UL Listed, CSA		Standard single contacts with screw clamp terminals: A600; R300 Light blocks with screw clamp terminals
<b>Terminal referencing</b>			Conforming to EN 50005 and EN 50013
<b>Material and colours</b>			XAL D: polycarbonate, light grey RAL 7035 and dark grey RAL 7016
			XAL K: polycarbonate, light grey RAL 7035 and yellow RAL 1021
<b>Cable entries</b>			Knock-out entries for n° 13 (CM12, Pg 13.5) cable gland and tapped ISO 20

## Contact function characteristics

### Mechanical characteristics

<b>Contact operation</b>	N/C or N/O		Slow break
<b>Positive operation</b>	Conforming to IEC/EN 60947-5-1 Appendix K		All functions incorporating a N/C contact are positive opening operation
<b>Operating travel</b> (to change electrical state)	Pushbutton	mm	Changing N/C state: 1.5 Changing N/O state: 2.6 Total travel: 4.3
<b>Operating force</b>	Pushbutton	N	Changing N/C state: 3.5 Changing N/O state: 3.8
	Additional contact only (extra to change state)	N	Single N/C contact: 2 Single N/O contact: 2.3
	Emergency stop with N/C + N/O	N	Standard push-pull: 45 Trigger action push-pull: 50 Standard turn to release (with or without key): 40 Trigger action turn to release (with or without key): 44
<b>Operating torque</b> (to change electrical state)	Selector switches	N.m	N/O contact: 0.14
	Additional contact only	N.m	N/O contact: 0.05
<b>Mechanical durability</b> (in millions of operating cycles)	Spring return pushbutton		5
	Non illuminated selector switch		3
	Illuminated selector switch		1
	Toggle switch		0.5
	Emergency stop pushbutton		0.3
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6		Frequency: 12...500 Hz: 5 gn
<b>Shock resistance</b>	Conforming to IEC 60068-2-27		All functions except mushroom head pushbutton, spring return: □ half sine wave acceleration 11 ms: 50 gn □ half sine wave acceleration 18 ms: 30 gn Mushroom head pushbutton, spring return: □ half sine wave acceleration 11 ms: 10 gn

## Contact function characteristics (continued)

### Electrical characteristics

<b>Cabling capacity</b>	Conforming to IEC/EN 60947-1	<b>mm<sup>2</sup></b> <b>mm<sup>2</sup></b>	Screw clamp terminals Min.: 1 x 0.22 without cable end Max.: 2 x 1.5 with cable end Cross head screws (Pozidriv or Philips type 1), slotted for flat 4 and 5.5 mm screwdriver Tightening torque: 0.8 N.m (1.2 N.m max.)		
<b>Contact material</b>			Silver alloy (Ag/Ni)		
<b>Nominal thermal current</b>	Conforming to IEC/EN 60947-5-1	<b>A</b>	Standard blocks with screw clamp terminals: 10		
<b>Short-circuit protection</b>	Conforming to IEC/EN 60947-5-1	<b>A</b>	Standard blocks with screw clamp terminals: 10 (gG cartridge fuse conforming to IEC 269-1)		
<b>Rated insulation voltage</b>	Conforming to IEC/EN 60947-1	<b>V</b>	Standard blocks with screw clamp terminals: Ui = 600 degree of pollution 3		
<b>Rated impulse withstand voltage</b>	Conforming to IEC/EN 60947-1	<b>kV</b>	Standard blocks with screw clamp terminals: Uimp = 6		
<b>Rated operational characteristics</b> Conforming to IEC/EN 60947-5-1	a.c. supply: utilisation category AC-15		A 600: Ue = 600 V and Ie = 1.2 A or Ue = 240 V and Ie = 3 A or Ue = 120 V and Ie = 6 A		
	d.c. supply: utilisation category DC-13		Q 600: Ue = 600 V and Ie = 0.1 A or Ue = 250 V and Ie = 0.1 A or Ue = 125 V and Ie = 0.22 A		
<b>Electrical durability</b> Conforming to IEC/EN 60947-5-1 Appendix C Operating rate: 3600 operating cycles/hour Load factor: 0.5	a.c. supply for 1 million operating cycles: utilisation category AC-15	<b>V</b> <b>A</b>	24 4	120 3	230 2
	d.c. supply for 1 million operating cycles: utilisation category DC-13	<b>V</b> <b>A</b>	24 0.5	110 0.2	
<b>Electrical reliability</b>	Failure rate. Conforming to IEC/EN 60947-5-4		At 17 V and 5 mA, $\lambda < 10^{-8}$ At 5 V and 1 mA, $\lambda < 10^{-6}$		

## Specific characteristics of light functions with integral LED

### Mechanical characteristics

<b>Vibration resistance</b>	Conforming to IEC 60068-2-6		Frequency: 12...500 Hz: 5 gn		
<b>Shock resistance</b>	Conforming to IEC 60068-2-27		Half sine wave acceleration 11 ms: 50 gn Half sine wave acceleration 18 ms: 30 gn		

### Electrical characteristics

<b>Cabling capacity</b>	Conforming to IEC/EN 60947-1	<b>mm<sup>2</sup></b> <b>mm<sup>2</sup></b>	Screw clamp terminals Min.: 1 x 0.22 without cable end Max.: 2 x 1.5 with cable end Cross head screws (Pozidriv or Philips type 1), slotted for flat 4 and 5.5 mm screwdriver Tightening torque: 0.8 N.m (1.2 N.m max.)		
<b>Rated insulation voltage</b>	Conforming to IEC/EN 60947-1	<b>V</b>	Pilot light blocks with integral LED: Ui = 250, degree of pollution 3		
<b>Rated impulse withstand voltage</b>	Conforming to IEC/EN 60947-1	<b>kV</b>	Pilot light blocks with integral LED: Uimp = 4		
<b>Voltage limits</b>	At nominal voltage	<b>V</b>	24 V: 19.2...30 ~; 21.6...26.4 ~ 48...120 V: 40...132 ~ 240 V: 195...264 ~		
<b>Current consumption</b>	For all colours	<b>mA</b>	≈ 12 V supply blocks: 18 ≈ 24 V supply blocks: 18 ~ 120 V supply blocks: 14 ~ 240 V supply blocks: 14		
<b>Service life</b>	At nominal voltage and at an ambient temperature of 25 °C	<b>H</b>	100,000		
<b>Surge withstand</b>	Conforming to IEC 6100-5-1	<b>kV</b>	1		
<b>Resistance to fast transients</b>	Conforming to IEC 6100-4-4	<b>kV</b>	2		
<b>Resistance to electromagnetic fields</b>	Conforming to IEC 6100-4-3	<b>V/m</b>	10		
<b>Resistance to electrostatic discharges</b>	Conforming to IEC 6100-4-2	<b>kV</b>	8/6		
<b>Direct parallel connection across inductive load e.g. contactor coil or solenoid</b>	Maximum power of load	<b>VA</b>	For applications involving high powers (≥ 30 VA), a <b>ZBZ V●</b> suppressor must be connected across the light block terminals (see page 2/13)		
<b>Electromagnetic emission</b>	Conforming to IEC 55011		Class B		

# Control stations and enclosures

XAL control stations for Harmony® style 5



Ø 22 control and signalling units

With double insulated bezel

Complete stations (screw clamp terminal connections)

## Start or Stop function

Light grey base "RAL 7035", dark grey lid "RAL 7016", lid fixing screws and nut material: stainless steel type A4, AISI 316.

Description	Type of push	Type of contact		Marking	Reference	Weight	
		 N/O	 N/C				
Marking on pushbutton							
1 spring return pushbutton	Flush green	1	—	I	XAL D102	0.135	
				Marche	XAL D104	0.156	
				Start	XAL D103	0.156	
			1	1	I	XAL D102E	0.165
	Flush red	—	1	O	XAL D112	0.156	
				Arrêt	XAL D117	0.156	
				Stop	XAL D114	0.165	
					1	1	O
				Stop	XAL D114E	0.165	
Projecting red	—	1	O	XAL D115	0.157		
			Arrêt	XAL D118	0.157		
			Stop	XAL D116	0.157		
Marking on legend holder and legend below head							
1 spring return pushbutton	Flush green	1	—	Marche	XAL D101	0.157	
				Start	XAL D101H29	0.157	
	Flush red	—	1	Arrêt	XAL D111	0.157	
				Stop	XAL D111H29	0.157	
1 mushroom head pushbutton Ø 40 mm spring return	Red	—	1	Arrêt	XAL D164	0.182	

2



XAL D102



XAL D115



XAL D101





XAL D111



XAL D164

## Emergency stop function

Light grey base "RAL 7035", dark grey lid "RAL 7016", lid fixing screws and nut material: stainless steel type A4, AISI 316.

Description	Type	Type of contact		Reference	Weight kg
		 N/O	 N/C		
Unmarked					
1 mushroom head pushbutton Ø 40 mm, red Turn to release	Trigger action	–	2	XAL K178F (1)	0.194
		1	1	XAL K178E (1)	0.194
		1	2	XAL K178G (1)	0.194
	Standard	–	1	XAL K174 (1)	0.178
		–	2	XAL K174F (1)	0.188
		1	1	XAL K174E (1)	0.188
		1	2	XAL K174G (1)	0.197
	1 mushroom head pushbutton Ø 40 mm, red Key release (key n° 455)	Trigger action	–	2	XAL K188F (1)
1			1	XAL K188E (1)	0.188
1			2	XAL K188G (1)	0.188
Standard		–	1	XAL K184 (1)	0.178
		–	2	XAL K184F (1)	0.188
		1	1	XAL K184E (1)	0.188
		1	2	XAL K184G (1)	0.197
1 mushroom head pushbutton Ø 40 mm, red Push-pull		Standard	–	1	XAL K194 (1)
Marked "Emergency stop" on legend holder and legend below head					
1 mushroom head pushbutton Ø 40 mm, red Turn to release	Standard	–	1	XAL K1741 (1)	0.185

## Marked "Emergency stop" on legend holder and legend below head

1 mushroom head pushbutton Ø 40 mm, red Turn to release	Standard	–	1	XAL K1741 (1)	0.185
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(1) Mushroom for Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5 and to Machinery Directive 98/37/EC.

Mushroom for trigger action Emergency stop pushbuttons conform to standard EN 418.

Please consult your Regional Sales Office for full details of these standards and directives.

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Complete stations (screw clamp terminal connections)

## Start Stop function

Light grey base "RAL 7035", dark grey lid "RAL 7016", lid fixing screws and nut material: stainless steel type A4, AISI 316.

Description	Type of push	Type of contact		Marking	Reference	Weight kg
		N/O	N/C			

## Marking on pushbutton (1)

2 spring return pushbuttons	1 flush green 1 flush red	1	—	I	XAL D213	0.233
		—	1	O		
				Marche		
				Arrêt		
		1	—	I	XAL D215	0.233
		—	1	O		
				Start		
				Stop		
		1	1	I	XAL D213E	0.252
		—	—	O		
	1 flush green 1 projecting red	1	—	I	XAL D214	0.234
		—	1	O		
				Start		
				Stop		

## Marking on legend holder and legend below head

2 spring return pushbuttons	1 flush green 1 flush red	1	—	Marche	XAL D211	0.233
		—	1	Arrêt		
				Start		
				Stop		
	1 flush green 1 flush green	1	—	Ouverture	XAL D241	0.233
		—	—	Fermeture		
1 selector switch 2-position stay put	Standard handle	1	—	O-I	XAL D134	0.163
		—	—			
				Arrêt-Marche		
	Key switches key n° 455 key withdrawal from left-hand position	1	—	O-I	XAL D144	0.187
		—	—			
				Arrêt-Marche		
		1	1	O-I	XAL D144E	0.196
		—	—			

Description	Type of push	Type of contact		Marking	Pilot light supply V	Reference	Weight kg
		N/O	N/C				

## With pilot light and marking on pushbutton (1)

2 spring return pushbuttons and 1 pilot light with integral red LED	1 flush green 1 flush red	1	—	I	~ 24	XAL D363B	0.261
		—	1	O	~ 120		
					~ 230		

## With pilot light and marking on legend holder and legend below head

2 spring return pushbuttons and 1 pilot light with integral red LED	1 flush green 1 flush red	1	—	Marche	~ 24	XAL D361B	0.261
		—	1	Arrêt	~ 120		
					~ 230		

(1) Push supplied with cap not clipped-in, allowing orientation through 360° in 90° steps.

2



XAL D224



XAL D211H29



XAL D134





XAL D144



XAL D363B

**Two function**



Light grey base "RAL 7035", dark grey lid "RAL 7016", lid fixing screws and nut material: stainless steel type A4, AISI 316.

Description	Type of push	Type of contact		Marking	Reference	Weight
						kg
Marking on pushbutton (1)						
2 spring return pushbuttons	1 flush white	1	—	↑	XAL D222	0.233
	1 flush black	1	—	↓		
				→	XAL D223	0.233
				↔		
		1	1	↑	XAL D222E	0.233
		1	1	↓		



XAL D222

**Three function** (light grey base "RAL 7035", dark grey lid "RAL 7016")

Description	Type of push	Type of contact		Marking	Reference	Weight kg
		 N/O	 N/C			
Marking on pushbutton (1)						
3 spring return pushbuttons	1 flush green	1	—	I	XAL D339	0.298
	1 flush red	—	1	O		
	1 flush green	1	—	II		
	1 flush white	1	—	↑	XAL D324	0.298
	1 flush red	—	1	O		
	1 flush black	1	—	↓	XAL D326	0.298
				↑ Stop		
				↓		
				→	XAL D334	0.298
				O		
				←		
			1 1 1	1 1 1	↑ O ↓	XAL D324E
1 flush white	1	—	↑	XAL D325	0.299	
1 flush red	—	1	O			
1 flush black	1	—	↓			
2 spring return pushbuttons + 1 latching mushroom head pushbutton Ø 30 mm	1 flush white	1	—	↑	XAL D328	0.317
	1 mushroom head red (2)	—	1	O		
	1 flush black	1	—	↓		



XAL D339



XAL D334



XAL D321

**Marking on legend holder and legend below head**

3 spring return pushbuttons	1 flush green	1	—	Avant	XAL D311	0.299
	1 flush red	—	1	Arrêt		
	1 flush green	—	—	Arrière		
				Montée	XAL D321	0.299
				Arrêt Descente		

(1) Push supplied with cap not clipped-in, allowing orientation through 360° in 90° steps.

(2) Standard turn to release.

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: empty enclosures

## Empty enclosures (lid fixing screws and nut material: stainless steel type A4, AISI 316)

Description	Number of ways	Reference	Weight kg
Light grey base "RAL 7035" Dark grey lid "RAL 7016"	1	XAL D01	0.136
	2	XAL D02	0.193
	3	XAL D03	0.238
	4	XAL D04	0.278
	5	XAL D05	0.322
Light grey base "RAL 7035" Yellow lid "RAL 1021" For Emergency stop function	1	XAL K01	0.136
	2	XAL K02 ▲	0.193
	3	XAL K03 ▲	0.238
	4	XAL K04 ▲	0.278
	5	XAL K05 ▲	0.322
CSA + UL certified (1)			
Light grey base "RAL 7035" Dark grey lid "RAL 7016"	1	XAL D01H7	0.136
	2	XAL D02H7	0.205
	3	XAL D03H7	0.238

(1) Volt-free commoning/earth terminal included.

2



XAL D02

▲ Available : 1<sup>st</sup> quarter 2005.General :  
pages 2/4 and 2/5Characteristics :  
pages 2/6 and 2/7Dimensions :  
pages 2/30 and 2/31

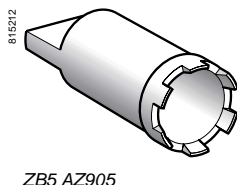
## Control stations and enclosures

XAL control stations for Harmony® style 5


Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: electrical blocks




## Electrical blocks and accessories for mounting on a plate in back of enclosure

Description	Description	Colour	Sold in lots of	Unit reference	Weight kg
<b>Electrical blocks with screw clamp terminal connections</b>					
<b>Standard contact blocks (1)</b>	N/O contact	–	5	ZEN L1111	0.015
	N/C contact	–	5	ZEN L1121	0.015
<b>Light blocks with integral LED (1)</b> 	~ 24 V	White	5	ZAL VB1	0.015
		Green	5	ZAL VB3	0.015
		Red	5	ZAL VB4	0.015
		Yellow	5	ZAL VB5	0.015
		Blue	5	ZAL VB6	0.015
	~ 48...120 V	White	5	ZAL VG1	0.015
		Green	5	ZAL VG3	0.015
		Red	5	ZAL VG4	0.015
		Yellow	5	ZAL VG5	0.015
		Blue	5	ZAL VG6	0.015
	~ 230...240 V	White	5	ZAL VM1	0.015
		Green	5	ZAL VM3	0.015
		Red	5	ZAL VM4	0.015
		Yellow	5	ZAL VM5	0.015
		Blue	5	ZAL VM6	0.015

Description	For use with	Sold in lots of	Unit reference	Weight kg
<b>Accessories for electrical blocks</b>				
<b>Blanking plug</b>	Ø 22 mm units	10	ZB5 SZ3	0.008
<b>Nut</b>	Head fixing	10	ZB5 AZ901	0.002
<b>Volt-free terminal</b>	Commoning/earth	10	XAL Z09	0.003
<b>Bezel tool</b>	For tightening nut ZB5 AZ901	1	ZB5 AZ905	0.016

## Electrical blocks and accessories for mounting beneath heads

Description	Description	Colour	Sold in lots of	Unit reference	Weight kg
<b>Electrical blocks with screw clamp terminal connections (2) (for use with body/fixing collar ZB5 AZ009)</b>					
<b>Standard contact blocks</b>	N/O contact	–	5	ZBE 101	0.011
	N/C contact	–	5	ZBE 102	0.011
<b>Light blocks with integral LED (3)</b> 	~ 24 V	White	5	ZBV B1	0.017
		Green	5	ZBV B3	0.017
		Red	5	ZBV B4	0.017
		Yellow	5	ZBV B5	0.017
		Blue	5	ZBV B6	0.017
	~ 48...120 V	White	5	ZBV G1	0.017
		Green	5	ZBV G3	0.017
		Red	5	ZBV G4	0.017
		Yellow	5	ZBV G5	0.017
		Blue	5	ZBV G6	0.017
	~ 230...240 V	White	5	ZBV M1	0.017
		Green	5	ZBV M3	0.017
		Red	5	ZBV M4	0.017
		Yellow	5	ZBV M5	0.017
		Blue	5	ZBV M6	0.017

Description	For use with		Sold in lots of	Unit reference	Weight kg
Accessories for electrical blocks					
LED suppressors	Electrical light blocks with integral LED	~ 120 V	1	ZBZ VG	0.010
		~ 230 V	1	ZBZ VM	0.010
Body/fixing collar	Electrical blocks (contact or light)		10	ZB5 AZ009	0.006

(1) A maximum of 3 electrical blocks may be fitted per associated head.

(2) For electrical blocks for printed circuit board connection: please consult your Regional Sales Office.

(3) To order a "high luminosity" version, add the letter **S** to the end of the reference (example: **ZBV B4S** for a red, 24 V, high luminosity block).

## Control stations and enclosures












XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads

## Heads for spring return pushbuttons - unmarked

Shape of head	Type of push	Colour of cap	Reference	Weight kg
	Without cap (1)	–	ZB5 AA0	0.022
	Flush, with set of 6 coloured caps	6 colours (2)	ZB5 AA9	0.027
	Flush	White	ZB5 AA1	0.018
		Black	ZB5 AA2	0.018
		Green	ZB5 AA3	0.018
		Red	ZB5 AA4	0.018
		Yellow	ZB5 AA5	0.018
		Blue	ZB5 AA6	0.018
	Flush with transparent cap, for insertion of legend (3)	Grey	ZB5 AA8	0.018
		White	ZB5 AA18	0.018
		Green	ZB5 AA38	0.018
		Red	ZB5 AA48	0.018
		Yellow	ZB5 AA58	0.018
		Blue	ZB5 AA68	0.018
		White	ZB5 AP1S	0.014
		Black	ZB5 AP2S	0.014
		Green	ZB5 AP3S	0.014
		Red	ZB5 AP4S	0.014
	Booted (coloured silicone) Can be replaced without dismantling the head	Yellow	ZB5 AP5S	0.014
		Blue	ZB5 AP6S	0.014
	Projecting	White	ZB5 AL1	0.019
		Black	ZB5 AL2	0.019
		Green	ZB5 AL3	0.019
		Red	ZB5 AL4	0.019
		Yellow	ZB5 AL5	0.019
		Blue	ZB5 AL6	0.019
	Flush (high guard)	White	ZB5 AA14	0.020
		Black	ZB5 AA24	0.020
		Green	ZB5 AA34	0.020
		Red	ZB5 AA44	0.020
		Yellow	ZB5 AA54	0.020
		Blue	ZB5 AA64	0.020
	Recessed (high guard)	White	ZB5 AA16	0.019
		Black	ZB5 AA26	0.019
		Green	ZB5 AA36	0.019
		Red	ZB5 AA46	0.019
		Yellow	ZB5 AA56	0.019
		Blue	ZB5 AA66	0.019
	Flush	White	ZB5 CA1	0.019
		Black	ZB5 CA2	0.019
		Green	ZB5 CA3	0.019
		Red	ZB5 CA4	0.019
		Yellow	ZB5 CA5	0.019
		Blue	ZB5 CA6	0.019
	Projecting	White	ZB5 CL1	0.021
		Black	ZB5 CL2	0.021
		Green	ZB5 CL3	0.021
		Red	ZB5 CL4	0.021
		Yellow	ZB5 CL5	0.021
		Blue	ZB5 CL6	0.021

(1) Cap to be ordered separately, see page 2/28.

(2) Head supplied with 6 different coloured caps (white, black, green, red, yellow, blue).

(3) For legend ordering information, see page 2/27.





XAL control stations for Harmony® style 5

Ø 22 control and signalling units



With double insulated bezel

Stations for user assembly: heads

## Heads for spring return pushbuttons - marked

Shape of head	Type of push	Marking Text	Colour	Colour of cap	Reference	Weight kg
 815233  ZB5 AA331	Flush (1)	I	White	Green	ZB5 AA331	0.018
			Black	White	ZB5 AA131	0.018
		II	White	Green	ZB5 AA336	0.018
			Black	White	ZB5 AA136	0.018
		START	White	Green	ZB5 AA333	0.018
			Black	White	ZB5 AA133	0.018
		ON	White	Green	ZB5 AA341	0.018
			Black	White	ZB5 AA141	0.018
		MARCHE	White	Green	ZB5 AA342	0.018
			Black	White	ZB5 AA142	0.018
			White	Black	ZB5 AA245	0.018
			Black	White	ZB5 AA145	0.018
		O	White	Red	ZB5 AA432	0.018
				Black	ZB5 AA232	0.018
		ARRET	White	Red	ZB5 AA433	0.018
				Black	ZB5 AA233	0.018
		STOP	White	Red	ZB5 AA434	0.018
				Black	ZB5 AA234	0.018
		OFF	White	Red	ZB5 AA435	0.018
				Black	ZB5 AA235	0.018
		UP	Black	White	ZB5 AA343	0.018
		DOWN	White	Black	ZB5 AA344	0.018
 815234  ZB5 AA432	Projecting (1)	O	White	Red	ZB5 AL432	0.019
				Black	ZB5 AL232	0.019
		ARRET	White	Red	ZB5 AL433	0.019
				Black	ZB5 AL233	0.019
		STOP	White	Red	ZB5 AL434	0.019
				Black	ZB5 AL234	0.019
		OFF	White	Red	ZB5 AL435	0.019
				Black	ZB5 AL235	0.019
 815235  ZB5 AL232	Flush (1)	I	White	Green	ZB5 CA331	0.019
		O	White	Red	ZB5 CA432	0.019
		+	White	Black	ZB5 CA2934	0.019
		↑	White	Black	ZB5 CA2912	0.019
		R	White	Blue	ZB5 CA6939	0.019

## Mushroom heads for spring return pushbuttons

Shape of head	Diameter of push mm	Colour of push	Reference	Weight kg
 815236  ZB5 AC24	30	Black	ZB5 AC24	0.027
		Green	ZB5 AC34	0.027
		Red	ZB5 AC44	0.027
		Yellow	ZB5 AC54	0.027
		Blue	ZB5 AC64	0.027
 815237  ZB5 AC2	40	Black	ZB5 AC2	0.046
		Green	ZB5 AC3	0.046
		Red	ZB5 AC4	0.046
		Yellow	ZB5 AC5	0.046
		Blue	ZB5 AC6	0.046

(1) Push supplied with cap not clipped-in, allowing orientation through 360° in 90° steps.

## Control stations and enclosures

XAL control stations for Harmony® style 5









Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads

## Mushroom heads for latching pushbuttons

(Emergency stop: colour red)

Shape of head	Type of push	Diameter of push mm	Colour of push	Reference	Weight kg
	Trigger action Push-pull	40	Red	ZB5 AT84 (1)	0.050
	Trigger action Turn to release	30	Red	ZB5 AS834 (1)	0.042
		40	Red	ZB5 AS844 (1)	0.046
	Trigger action Key release (Key n° 455) (3)	30	Red	ZB5 AS934 (1)	0.068
		40	Red	ZB5 AS944 (1) (2)	0.071
		60	Red	ZB5 AS964 (1)	0.092
	Trigger action Key release (Key n° 455)	40	Red	ZB5 AS944D (1)	0.071
	Push-pull	30	Black	ZB5 AT24 (1)	0.044
			Red	ZB5 AT44 (1)	0.044
		40	Black	ZB5 AT2 (1)	0.049
			Red	ZB5 AT4 (1)	0.049
	Turn to release	30	Black	ZB5 AS42 (1)	0.040
			Red	ZB5 AS44 (1)	0.040
		40	Black	ZB5 AS52 (1)	0.044
			Red	ZB5 AS54 (1)	0.044
			Yellow	ZB5 AS55 (1)	0.044
	Key release (key n° 455) (3)	30	Black	ZB5 AS72 (1)	0.040
			Red	ZB5 AS74 (1)	0.040
		40	Black	ZB5 AS12 (1)	0.044
			Red	ZB5 AS14 (1) (2)	0.044
	Key release (key n° 4A185)	40	Red	ZB5 AS14D (1)	0.044

(1) Mushroom heads for Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5, EN 418 and to Machinery Directive 98/37/EC.

Please consult your Regional Sales Office for full details of these standards and directives.

(2) Other key numbers:

- key n° 421E: add suffix **12** to the reference.
- key n° 458A: add suffix **10** to the reference.
- key n° 520E: add suffix **14** to the reference.
- key n° 3131A: add suffix **20** to the reference.

Example: For a Ø 40 mushroom head for a trigger action, latching pushbutton, with release by key n° 421E, the reference becomes: **ZB5 AS94412**.

(3) For specific keys with other numbers, please consult your Regional Sales Office.

2

815243



ZB5 AS844

815246



ZB5 AS934

815244



ZB5 AT44

815245



ZB5 AS54

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads



## Heads for selector switches (1)

Shape of head	Type of operator	Number and type of positions		Reference	Weight kg
	Standard handle, black	2 - stay put		ZB5 AD2	0.024
		2 - spring return from right to left		ZB5 AD4	0.024
		3 - stay put		ZB5 AD3	0.024
		3 - spring return to centre		ZB5 AD5	0.024
		3 - spring return from left to centre		ZB5 AD7	0.024
		3 spring return from right to centre		ZB5 AD8	0.024
	Standard handle, white	2 - stay put		ZB5 AD201	0.024
		2 - spring return from right to left		ZB5 AD401	0.024
		3 - stay put		ZB5 AD301	0.024
		3 - spring return to centre		ZB5 AD501	0.024
		3 - spring return from left to centre		ZB5 AD701	0.024
		3 spring return from right to centre		ZB5 AD801	0.024
	Standard handle, green	2 - stay put		ZB5 AD203	0.024
		2 - spring return from right to left		ZB5 AD403	0.024
		3 - stay put		ZB5 AD303	0.024
		3 - spring return to centre		ZB5 AD503	0.024
		3 - spring return from left to centre		ZB5 AD703	0.024
		3 spring return from right to centre		ZB5 AD803	0.024

(1) Can only be used for actuation of end row (side) mounted contacts.

## Control stations and enclosures





XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads

## Heads for selector switches (1) (continued)

Shape of head	Type of operator	Number and type of positions	Reference	Weight kg
 ZB5 AD●●●	 Standard handle, red	2 - stay put	ZB5 AD204	0.024
		2 - spring return from right to left	ZB5 AD404	0.024
		3 - stay put	ZB5 AD304	0.024
		3 - spring return to centre	ZB5 AD504	0.024
		3 - spring return from left to centre	ZB5 AD704	0.024
		3 spring return from right to centre	ZB5 AD804	0.024
	 Standard handle, yellow	2 - stay put	ZB5 AD205	0.024
		2 - spring return from right to left	ZB5 AD405	0.024
		3 - stay put	ZB5 AD305	0.024
		3 - spring return to centre	ZB5 AD505	0.024
		3 - spring return from left to centre	ZB5 AD705	0.024
		3 spring return from right to centre	ZB5 AD805	0.024
	 Standard handle, blue	2 - stay put	ZB5 AD206	0.024
		2 - spring return from right to left	ZB5 AD406	0.024
		3 - stay put	ZB5 AD306	0.024
		3 - spring return to centre	ZB5 AD506	0.024
		3 - spring return from left to centre	ZB5 AD706	0.024
		3 spring return from right to centre	ZB5 AD806	0.024
 ZB5 AJ3	 Long handle, black	2 - stay put	ZB5 AJ2	0.025
		2 - spring return from right to left	ZB5 AJ4	0.025
		3 - stay put	ZB5 AJ3	0.025
		3 - spring return to centre	ZB5 AJ5	0.025
		3 - spring return from left to centre	ZB5 AJ7	0.025
		3 spring return from right to centre	ZB5 AJ8	0.025

(1) Can only be used for actuation of end row (side) mounted contacts.

## Control stations and enclosures























XAL control stations for Harmony® style 5

Ø 22 control and signalling units


With double insulated bezel

Stations for user assembly: heads

## Heads for selector switches (1) (continued)

Shape of head	Type of operator	Number and type of positions (2)		Reference	Weight kg
 ZB5 AD●●	 Knurled knob, black	2 - stay put		ZB5 AD29	0.027
		2 - spring return from right to left		ZB5 AD49	0.027
		3 - stay put		ZB5 AD39	0.027
		3 - spring return to centre		ZB5 AD59	0.027
		3 - spring return from left to centre		ZB5 AD79	0.027
		3 spring return from right to centre		ZB5 AD89	0.027
 ZB5 AG●	 Key switch with key n° 455 (4)	2 - stay put		ZB5 AG2 (3)	0.050
				ZB5 AG4 (3)	0.050
		2 - spring return from right to left		ZB5 AG6 (3)	0.050
		3 - stay put		ZB5 AG0 (3)	0.050
				ZB5 AG3 (3)	0.050
				ZB5 AG5 (3)	0.050
				ZB5 AG9 (3)	0.050
				ZB5 AG09 (3)	0.050
		3 - spring return from left to centre		ZB5 AG1 (3)	0.050
		2 - spring return to centre		ZB5 AG7 (3)	0.050
		3 spring return from right to centre		ZB5 AG8 (3)	0.050
				ZB5 AG08 (3)	0.050

(1) Can only be used for actuation of end row (side) mounted contacts.

(2) The symbol  indicates key withdrawal position(s).

(3) Other key numbers:

- key n° 421E: add suffix **12** to the reference,
- key n° 458A: add suffix **10** to the reference,
- key n° 520E: add suffix **14** to the reference,
- key n° 3131A: add suffix **20** to the reference.

Example:

For a switch head with key n° 421E, 2-position stay put with key withdrawal from the left-hand position, the reference becomes : **ZB5 AG212**.

(4) For specific keys with other numbers, please consult your Regional Sales Office.

## Control stations and enclosures





















XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads


## Heads for selector switches (1) (continued)

Shape of head	Type of operator	Number and type of positions (2)		Reference	Weight kg
 ZB5 AG●●	 Key switch with key n° 8D1	2 - stay put		ZB5 AG2D	0.050
				ZB5 AG02D	0.050
				ZB5 AG4D	0.050
		2 - spring return from right to left		ZB5 AG6D	0.050
		3 - stay put		ZB5 AG0D	0.050
				ZB5 AG3D	0.050
				ZB5 AG5D	0.050
				ZB5 AG9D	0.050
				ZB5 AG09D	0.050
				ZB5 AG03D	0.050
				ZB5 AG04D	0.050
		3 - spring return from left to centre		ZB5 AG06D	0.050
				ZB5 AG1D	0.050
				ZB5 AG07D	0.050
		3 spring return from right to centre		ZB5 AG8D	0.050
				ZB5 AG08D	0.050
				ZB5 AG05D	0.050
		2 - spring return to centre			
				ZB5 AG7D	0.050

## Heads for toggle switches

Shape of head	Description	Lever	Type of position	Reference	Weight kg
 ZB5 AD28	2-position	Black	Stay put	ZB5 AD28	0.023
			Spring return	ZB5 AD48	0.023
		White	Stay put	ZB5 AD2801	0.023
		Red	Stay put	ZB5 AD2804	0.023
		Blue	Stay put	ZB5 AD2806	0.023

(1) Can only be used for actuation of end row (side) mounted contacts.

(2) The symbol  indicates key withdrawal position(s).

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads



## Heads for pilot lights

Shape of head	For use with body comprising light source type	Colour of lens	Reference	Weight kg
<b>With plain lens</b>				
	With integral LED 	White	ZB5 AV013	0.017
		Green	ZB5 AV033	0.017
		Red	ZB5 AV043	0.017
		Yellow	ZB5 AV053	0.017
		Blue	ZB5 AV063	0.017
	With integral LED 	White	ZB5 CV013	0.020
		Green	ZB5 CV033	0.020
		Red	ZB5 CV043	0.020
		Yellow	ZB5 CV053	0.020
		Blue	ZB5 CV063	0.020
		5 colours (1)	ZB5 CV003	0.028

## With plain lens, for insertion of legend (2)

	With integral LED 	White	ZB5 AV013E	0.017
		Green	ZB5 AV033E	0.017
		Red	ZB5 AV043E	0.017
		Yellow	ZB5 AV053E	0.017
		Blue	ZB5 AV063E	0.017

## With grooved lens (3)

	With integral LED 	White	ZB5 AV013S	0.017
		Green	ZB5 AV033S	0.017
		Red	ZB5 AV043S	0.017
		Yellow	ZB5 AV053S	0.017
		Blue	ZB5 AV063S	0.017

## Heads for spring return illuminated pushbuttons

Shape of head	Type of push	Colour	Reference	Weight kg
<b>Only for use with bodies comprising a light source with integral LED</b> 				
	Flush, plain lens	White	ZB5 AW313	0.017
		Green	ZB5 AW333	0.017
		Red	ZB5 AW343	0.017
		Yellow	ZB5 AW353	0.017
		Blue	ZB5 AW363	0.017
	Flush, grooved lens (3)	White	ZB5 AW313S	0.016
		Green	ZB5 AW333S	0.016
		Red	ZB5 AW343S	0.016
		Yellow	ZB5 AW353S	0.016
		Blue	ZB5 AW363S	0.016
	Flush for insertion of legend (1)	White	ZB5 AA18	0.018
		Green	ZB5 AA38	0.018
		Red	ZB5 AA48	0.018
		Yellow	ZB5 AA58	0.018
		Blue	ZB5 AA68	0.018
	Projecting	White	ZB5 AW113	0.018
		Green	ZB5 AW133	0.018
		Red	ZB5 AW143	0.018
		Yellow	ZB5 AW153	0.018
		Blue	ZB5 AW163	0.018
	Flush for insertion of legend (1)	White	ZB5 CW313	0.023
		Green	ZB5 CW333	0.023
		Red	ZB5 CW343	0.023
		Yellow	ZB5 CW353	0.023
		Blue	ZB5 CW363	0.023

(1) Head supplied with 5 different coloured lenses (white, green, red, yellow, blue) for insertion of legend.

For legend ordering information: see page 2/27.

(2) For legend ordering information: see page 2/27.

(3) For use in bright ambient light conditions (outdoors in sunlight, for example). For heads with grooved lens, the use of "high luminosity" LEDs is recommended, see page 1/83.

## Other versions

Heads for flush pushbuttons with illuminated ring.  
Please consult your Regional Sales Office.

## Control stations and enclosures








XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: heads

## Heads for illuminated selector switches with standard handle (1)

Shape of head	Number and type of positions	Colour of handle	Reference	Weight kg
Only for use with bodies comprising a light source with integral LED <b>protected LED</b>				
	2 - stay put 	White	ZB5 AK1213	0.021
		Green	ZB5 AK1233	0.021
		Red	ZB5 AK1243	0.021
		Yellow	ZB5 AK1253	0.021
		Blue	ZB5 AK1263	0.021
	2 - spring return from right to left	White	ZB5 AK1413	0.021
		Green	ZB5 AK1433	0.021
		Red	ZB5 AK1443	0.021
		Yellow	ZB5 AK1453	0.021
		Blue	ZB5 AK1463	0.021
	3 - stay put	White	ZB5 AK1313	0.021
		Green	ZB5 AK1333	0.021
		Red	ZB5 AK1343	0.021
		Yellow	ZB5 AK1353	0.021
		Blue	ZB5 AK1363	0.021
	3 - spring return to centre	White	ZB5 AK1513	0.021
		Green	ZB5 AK1533	0.021
		Red	ZB5 AK1543	0.021
		Yellow	ZB5 AK1553	0.021
		Blue	ZB5 AK1563	0.021
	3 - spring return from right to centre	White	ZB5 AK1813	0.021
		Green	ZB5 AK1833	0.021
		Red	ZB5 AK1843	0.021
		Yellow	ZB5 AK1853	0.021
		Blue	ZB5 AK1863	0.021
	3 - spring return from left to centre	White	ZB5 AK1713	0.021
		Green	ZB5 AK1733	0.021
		Red	ZB5 AK1743	0.021
		Yellow	ZB5 AK1753	0.021
		Blue	ZB5 AK1763	0.021

## Heads for Ø 40 illuminated, latching, mushroom head pushbuttons (2)

Only for use with bodies comprising a light source with integral "high luminosity" LED (3)

Shape of head	Type of push	Colour of push	Reference	Weight kg
	Turn to release	White	ZB5 AW713	0.022
		Green	ZB5 AW733	0.022
		Red	ZB5 AW743	0.022
		Yellow	ZB5 AW753	0.022
		Blue	ZB5 AW763	0.022

(1) NEMA type 13.

(2) Use electrical blocks type ZBE 10● specifically designed for "mounting beneath heads", see page 2/13.

(3) "High luminosity" LED, see page 2/13.

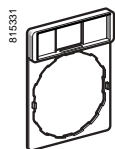
## Control stations and enclosures

XAL control stations for Harmony® style 5

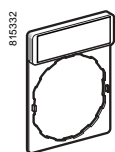
Ø 22 control and signalling units

With double insulated bezel

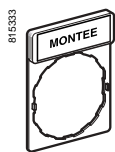
Stations for user assembly: accessories



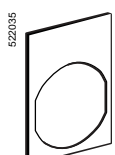
ZBZ 32



ZBY 101



ZBY 2107



ZAL Y4

## Standard (30 x 40 mm) legend holders for 8 x 27 mm legends

Description	Legend Colour	Marking	Sold in lots of	Unit reference	Weight kg
Without legend	—	—	10	ZBZ 32	0.001
With blank legend (for engraving)	Black or red background	—	10	ZBY 2101	0.002
	White or yellow background	—	10	ZBY 4101	0.002
With 8 x 27 mm legend (with International marking)	Black or red background	O (black background)	1	ZBY 2146	0.002
		O (red background)	1	ZBY 2931	0.002
		I	1	ZBY 2147	0.002
		II	1	ZBY 2148	0.002
		O-I	1	ZBY 2178	0.002
		I-II	1	ZBY 2179	0.002
		I-O-II	1	ZBY 2186	0.002
		AUTO	1	ZBY 2115	0.002
		STOP	1	ZBY 2304	0.002
With 8 x 27 mm legend (with French language marking) Black or red background (1)		ARRET (red background)	1	ZBY 2104	0.002
		ARRET (black background)	1	ZBY 0104	0.002
		ARRET GENERAL	1	ZBY 2129	0.002
		ARRET REARMEMENT	1	ZBY 2133	0.002
		ARRET D'URGENCE	1	ZBY 2130	0.002
		ARRET-MARCHE	1	ZBY 2166	0.002
		ARRIERE	1	ZBY 2106	0.002
		AUTO CYCLE-CYCLE	1	ZBY 2198	0.002
		AUTO CYCLE-MAIN	1	ZBY 2199	0.002
		AUTO-MAIN	1	ZBY 2164	0.002
		AUTO-O-MAIN	1	ZBY 2185	0.002
		AVANT	1	ZBY 2105	0.002
		AVANT-O-ARRIERE	1	ZBY 2184	0.002
		C-P-C-NORMAL	1	ZBY 2165	0.002
		CYCLE-MAIN	1	ZBY 2197	0.002
		DECLENCHEMENT	1	ZBY 2132	0.002
		DEFAUT (black background)	1	ZBY 2134	0.002
		DEFAUT (red background)	1	ZBY 2135	0.002
		DEPART CYCLE	1	ZBY 2195	0.002
		DESCENTE	1	ZBY 2108	0.002
		DROITE	1	ZBY 2109	0.002
		ENCLENCHEMENT	1	ZBY 2131	0.002
		EN SERVICE	1	ZBY 2111	0.002
		FERMETURE	1	ZBY 2114	0.002
		GAUCHE	1	ZBY 2110	0.002
		HORS SERVICE	1	ZBY 2112	0.002
		HORS-EN	1	ZBY 2167	0.002
		LENT	1	ZBY 2127	0.002
		MAIN	1	ZBY 2116	0.002
		MARCHE	1	ZBY 2103	0.002
		MONTÉE	1	ZBY 2107	0.002
		OUVERTURE	1	ZBY 2113	0.002
		PHASE / PHASE	1	ZBY 2196	0.002
		REARMEMENT (red background)	1	ZBY 2123	0.002
REARMEMENT (black background)	1	ZBY 0123	0.002		
SOUS TENSION	1	ZBY 2126	0.002		
VITE	1	ZBY 2128	0.002		

## Legends for engraving (30 x 42 mm) for marking text

Description	Colour	Sold in lots of	Unit reference	Weight kg
Legends for engraving for marking 2 lines of text	Black or red background	10	ZAL Y2	0.001
	White or yellow background	10	ZAL Y4	0.001

(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

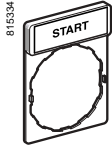
With double insulated bezel

Stations for user assembly: accessories

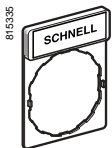
## Standard (30 x 40 mm) legend holders for 8 x 27 mm legends (continued)

Description	Legend Colour	Marking	Reference	Weight kg
<b>With legend</b> (with English language marking)	Black or red background (1)	AUTO-HAND	ZBY 2364	0.002
		AUTO-O-HAND	ZBY 2385	0.002
		CLOSE	ZBY 2314	0.002
		DOWN	ZBY 2308	0.002
		EMERGENCY STOP	ZBY 2330	0.002
		FAST	ZBY 2328	0.002
		FORWARD	ZBY 2305	0.002
		HAND	ZBY 2316	0.002
		HAND-OFF-AUTO	ZBY 2387	0.002
		INCH	ZBY 2321	0.002
		LEFT	ZBY 2310	0.002
		OFF	ZBY 2312	0.002
		OFF-ON	ZBY 2367	0.002
		ON	ZBY 2311	0.002
		OPEN	ZBY 2313	0.002
		POWER ON	ZBY 2326	0.002
		RESET (red background)	ZBY 2323	0.002
		RESET (black background)	ZBY 2322	0.002
		REVERSE	ZBY 2306	0.002
		RIGHT	ZBY 2309	0.002
		RUN	ZBY 2334	0.002
		SLOW	ZBY 2327	0.002
		START	ZBY 2303	0.002
		STOP-START	ZBY 2366	0.002
		UP	ZBY 2307	0.002
<b>With legend</b> (with German language marking)	Black or red background (1)	AB	ZBY 2208	0.002
		AUF	ZBY 2207	0.002
		AUS	ZBY 2204	0.002
		AUS-EIN	ZBY 2266	0.002
		AUS-IN BETRIEB	ZBY 2267	0.002
		AUS-RÜCKSTELLUNG	ZBY 2233	0.002
		AUSSCHALTEN	ZBY 2232	0.002
		AUTO-HAND	ZBY 2364	0.002
		AUTO-O-HAND	ZBY 2385	0.002
		AUTOZYKL-HAND	ZBY 2299	0.002
		AUTOZYKL-1 ZYKL	ZBY 2298	0.002
		C-P-C-NORMAL	ZBY 2265	0.002
		EIN	ZBY 2203	0.002
		EINSCHALTEN	ZBY 2231	0.002
		HAND	ZBY 2316	0.002
		LANGSAM	ZBY 2227	0.002
		LINKS	ZBY 2210	0.002
		NOT-AUS (red background)	ZBY 2230	0.002
		NOT-AUS (yellow background)	ZBY 22420001	0.002
		NOT-HALT	ZBY 2229	0.002
		ÖFFNEN	ZBY 2213	0.002
		RECHTS	ZBY 2209	0.002
		RÜCKSTELLUNG	ZBY 2223	0.002
		SCHLIESSEN	ZBY 2214	0.002
		SCHNELL	ZBY 2228	0.002
		SPANNUNG EIN	ZBY 2226	0.002
		STEUERUNG AUS	ZBY 2212	0.002
		STEUERUNG EIN	ZBY 2211	0.002
		STÖRUNG (black background)	ZBY 2234	0.002
		STÖRUNG (red background)	ZBY 2235	0.002
		VOR	ZBY 2205	0.002
		VOR-O-ZURÜCK	ZBY 2284	0.002
		ZURÜCK	ZBY 2206	0.002
		ZYKLUS-HAND	ZBY 2297	0.002
		ZYKLUS-START	ZBY 2295	0.002

(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).



ZBY 2303



ZBY 2228

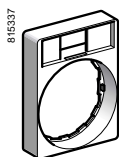
## Control stations and enclosures

XAL control stations for Harmony® style 5

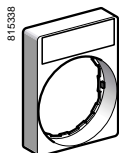
Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: accessories



ZBZ 34



ZBY 0H101



ZBY 02178



ZBY 00104

## 30 x 40 mm legend holders (flush mounting with bezel) for 8 x 27 mm legends

Description	For use with	Colour	Sold in lots of	Unit reference	Weight kg
Without legend	Circular heads	–	10	ZBZ 34	0.003
	Square heads	–	10	ZBC Z34	0.002
With blank legend	Circular heads	Black or red background	10	ZBY 2H101	0.004
		White or yellow background	10	ZBY 4H101	0.004
	Square heads	Black or red background	10	ZBC Y2H101	0.002
		White or yellow background	10	ZBC Y4H101	0.002

## Legends for engraving

Description mm	For use with	Colour	Sold in lots of	Unit reference	Weight kg
8 x 27	30 x 40 mm legend holder	Black or red background	10	ZBY 0101	0.001
		White or yellow background	10	ZBY 0102	0.001

## Sheets of peel-off legends (with backing board and protective transparent cover)

Description	For use with	Sold in lots of	Unit reference	Weight kg
Sheet of 76 8 x 27 mm legends	30 x 40 mm legend holder ZBZ 32 and ZBZ 34	10	ZBY 4100	0.043

## 8 x 27 mm marked legends (for 30 x 40 mm legend holders ZBZ 32 and ZBZ 34)

Colour	Marking	Reference	Weight kg
Black or red background (1)	International	O (black background)	ZBY 02146 0.001
		O (red background)	ZBY 02931 0.001
		I	ZBY 02147 0.001
		II	ZBY 02148 0.001
		O-I	ZBY 02178 0.001
		I-II	ZBY 02179 0.001
		I-O-II	ZBY 02186 0.001
		AUTO	ZBY 02115 0.001
		STOP	ZBY 02304 0.001
	French	ARRET (red background)	ZBY 02104 0.001
		ARRET (black background)	ZBY 00104 0.001
		ARRET GENERAL	ZBY 02129 0.001
		ARRET REARMEMENT	ZBY 02133 0.001
		ARRET D'URGENCE	ZBY 02130 0.001
		ARRET-MARCHE	ZBY 02166 0.001
		ARRIERE	ZBY 02106 0.001
		AUTO CYCLE-CYCLE	ZBY 02198 0.001
		AUTO CYCLE-MAIN	ZBY 02199 0.001
		AUTO-MAIN	ZBY 02164 0.001
		AUTO-O-MAIN	ZBY 02185 0.001
		AVANT	ZBY 02105 0.001
		AVANT-O-ARRIERE	ZBY 02184 0.001
		C-P-C-NORMAL	ZBY 02165 0.001
		CYCLE-MAIN	ZBY 02197 0.001
		DECLenchement	ZBY 02132 0.001
		DEFAUT (black background)	ZBY 02134 0.001
		DEFAUT (red background)	ZBY 02135 0.001
		DEPART CYCLE	ZBY 02195 0.001
		DESCENTE	ZBY 02108 0.001
		DROITE	ZBY 02109 0.001
		ENCLenchement	ZBY 02131 0.001
		EN SERVICE	ZBY 02111 0.001
		FERMETURE	ZBY 02114 0.001
		GAUCHE	ZBY 02110 0.001
		HORS SERVICE	ZBY 02112 0.001
		HORS-EN	ZBY 02167 0.001
		LENT	ZBY 02127 0.001
		MAIN	ZBY 02116 0.001
		MARCHE	ZBY 02103 0.001
		MONTEE	ZBY 02107 0.001
		OUVERTURE	ZBY 02113 0.001
		PHASE / PHASE	ZBY 02196 0.001

(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: accessories

## 8 x 27 mm marked legends (for 30 x 40 mm legend holders ZBZ 32 and ZBZ 34) (continued)

Colour	Marking	Reference	Weight kg
Black or red background (1)	French (continued)	REARMEMENT (red background)	ZBY 02123 0.001
		REARMEMENT (black background)	ZBY 00123 0.001
		SOUS TENSION	ZBY 02126 0.001
		VITE	ZBY 02128 0.001
	English	AUTO-HAND	ZBY 02364 0.001
		AUTO-O-HAND	ZBY 02385 0.001
		CLOSE	ZBY 02314 0.001
		DOWN	ZBY 02308 0.001
		EMERGENCY STOP	ZBY 02330 0.001
		FAST	ZBY 02328 0.001
		FORWARD	ZBY 02305 0.001
		HAND	ZBY 02316 0.001
		HAND-OFF-AUTO	ZBY 02387 0.001
		INCH	ZBY 02321 0.001
		LEFT	ZBY 02310 0.001
		OFF	ZBY 02312 0.001
		OFF-ON	ZBY 02367 0.001
		ON	ZBY 02311 0.001
		OPEN	ZBY 02313 0.001
		POWER ON	ZBY 02326 0.001
		RESET (red background)	ZBY 02323 0.001
		RESET (black background)	ZBY 02322 0.001
		REVERSE	ZBY 02306 0.001
		RIGHT	ZBY 02309 0.001
		RUN	ZBY 02334 0.001
		SLOW	ZBY 02327 0.001
		START	ZBY 02303 0.001
		STOP-START	ZBY 02366 0.001
		UP	ZBY 02307 0.001
	German	AB	ZBY 02208 0.001
		AUF	ZBY 02207 0.001
		AUS	ZBY 02204 0.001
		AUS-EIN	ZBY 02266 0.001
		AUS-IN BETRIEB	ZBY 02267 0.001
		AUS-RÜCKSTELLUNG	ZBY 02233 0.001
		AUSSCHALLEN	ZBY 02232 0.001
		AUTO-HAND	ZBY 02364 0.001
		AUTO-O-HAND	ZBY 02385 0.001
		AUTOZYKL-HAND	ZBY 02299 0.001
		AUTOZYKL- 1 ZYKL	ZBY 02298 0.001
		C-P-C-NORMAL	ZBY 02265 0.001
		EIN	ZBY 02203 0.001
		EINSCHALTEN	ZBY 02231 0.001
		HAND	ZBY 02316 0.001
		LANGSAM	ZBY 02227 0.001
		LINKS	ZBY 02210 0.001
		NOT-AUS (red background)	ZBY 02230 0.001
		NOT-AUS (yellow background)	ZBY 022420001 0.001
		NOT-HALT	ZBY 02229 0.001
		ÖFFNEN	ZBY 02213 0.001
		RECHTS	ZBY-02209 0.001
		RÜCKSTELLUNG	ZBY-02223 0.001
		SCHLIESSEN	ZBY-02214 0.001
		SCHNELL	ZBY-02228 0.001
		SPANNUNG EIN	ZBY-02226 0.001
		STEUERUNG AUS	ZBY-02212 0.001
		STEUERUNG EIN	ZBY-02211 0.001
		STÖRUNG (black background)	ZBY-02234 0.001
		STÖRUNG (red background)	ZBY-02235 0.001
		VOR	ZBY-02205 0.001
		VOR-O-ZURÜCK	ZBY-02284 0.001
		ZURÜCK	ZBY-02206 0.001
		ZYKLUS-HAND	ZBY-02297 0.001
		ZYKLUS-START	ZBY-02295 0.001

(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).

2

815341

START

ZBY 02303

815342

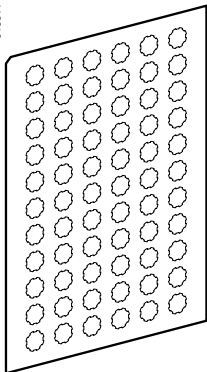
SCHNELL

ZBY 02228

Control stations and enclosures

XAL control stations for Harmony® style 5  
Ø 22 control and signalling units  
With double insulated bezel  
Stations for user assembly: accessories

815344



ZBY 1●●●

Legends for pushbuttons, switches and pilot lights XB5 A					
Description	Marking		Sold in lots of	Unit reference	Weight kg
Sheets of 66 circular peel-off transparent self-adhesive legends	Without		10	ZBY 1101	0.017
	International	O	10	ZBY 1146	0.017
		I	10	ZBY 1147	0.017
		II	10	ZBY 1148	0.017
		III	10	ZBY 1149	0.017
		AUTO	10	ZBY 1115	0.017
		STOP	10	ZBY 1304	0.017
		↑	10	ZBY 1912	0.017
	French	ARRET	10	ZBY 1104	0.017
		ARRIERE	10	ZBY 1106	0.017
		AVANT	10	ZBY 1105	0.017
		DESCENTE	10	ZBY 1108	0.017
		MAIN	10	ZBY 1116	0.017
		MARCHE	10	ZBY 1103	0.017
		MONTEE	10	ZBY 1107	0.017
	English	HAND	10	ZBY 1316	0.017
		OFF	10	ZBY 1312	0.017
		ON	10	ZBY 1311	0.017
		START	10	ZBY 1303	0.017
	German	AB	10	ZBY 1208	0.017
		AUF	10	ZBY 1207	0.017
		AUS	10	ZBY 1204	0.017
		EIN	10	ZBY 1203	0.017
Strip of 66 square peel-off transparent self-adhesive legends	Without		10	ZBC Y1101	0.017

583527



XBY 2U

“SIS Label” labelling software (for legend sheets ZBY 1101, ZBY 4100 and ZBC Y1101)		
Application	Reference	Weight kg
Legend design English, French, German, Italian, Spanish	XBY 2U	0.100

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: accessories

## Metal guards (3)

Description	For use with	Colour	Reference	Weight kg
Padlockable	Ø 40	Chromium plated	ZBZ 1600	0.046
	Emergency stop mushroom head	Black	ZBZ 1602	0.046
	pushbuttons	Red	ZBZ 1604	0.046
	(standard or trigger action)	Yellow	ZBZ 1605	0.046
		Blue	ZBZ 1606	0.046

## Pushbutton caps - unmarked

For use with	Cap Type	Colour	Sold in lots of	Unit reference	Weight kg
ZB5 AA circular pushbutton heads supplied without cap	Flush	White	10	ZBA 1	0.001
		Black	10	ZBA 2	0.001
		Green	10	ZBA 3	0.001
		Red	10	ZBA 4	0.001
		Yellow	10	ZBA 5	0.001
		Blue	10	ZBA 6	0.001
		6 colours (1)	1	ZBA 9	0.006
	Projecting	White	10	ZBL 1	0.001
		Black	10	ZBL 2	0.001
		Green	10	ZBL 3	0.001
		Red	10	ZBL 4	0.001
		Yellow	10	ZBL 5	0.001
		Blue	10	ZBL 6	0.001
		6 colours (1)	1	ZBL 9	0.006

## Pushbutton caps - marked (2)

For use with	Type of push	Marking Text	Colour	Colour of cap	Unit reference	Weight kg
ZB5 AA circular pushbutton heads supplied without cap (sold in lots of 10)	Flush	I	White	Green	ZBA 331	0.001
			Black	White	ZBA 131	0.001
		II	White	Green	ZBA 336	0.001
			Black	White	ZBA 136	0.001
		III	White	Green	ZBA 337	0.001
			Black	White	ZBA 137	0.001
		IV	White	Green	ZBA 338	0.001
			Black	White	ZBA 138	0.001
		START	White	Green	ZBA 333	0.001
			Black	White	ZBA 133	0.001
		ON	White	Green	ZBA 341	0.001
			Black	White	ZBA 141	0.001
		MARCHE	White	Green	ZBA 342	0.001
			Black	White	ZBA 142	0.001
		⊕	White	Black	ZBA 245	0.001
			Black	White	ZBA 145	0.001
		UP	Black	White	ZBA 343	0.001
		DOWN	White	Black	ZBA 344	0.001
		↑	White	Black	ZBA 335	0.001
			Black	White	ZBA 334	0.001
		O	White	Red	ZBA 432	0.001
				Black	ZBA 232	0.001
		ARRET	White	Red	ZBA 433	0.001
				Black	ZBA 233	0.001
		STOP	White	Red	ZBA 434	0.001
				Black	ZBA 234	0.001
		OFF	White	Red	ZBA 435	0.001
				Black	ZBA 235	0.001
		⬇	White	Green	ZBA 346	0.001
		R	White	Blue	ZBA 639	0.001

(1) Set of 6 different coloured caps: white, black, green, red, yellow, blue.

(2) Can be clipped-in at 90° steps, through 360°.

(3) These guards can be used in conjunction with a legend holder, but only those for mounting directly beneath the head. See page 2/63.

## Control stations and enclosures

XAL control stations for Harmony® style 5

Ø 22 control and signalling units

With double insulated bezel

Stations for user assembly: accessories



ZB2 BP01●



ZBV 01●3



ZBG 455

## Coloured boots

For use with	Colour	Sold in lots of	Unit reference	Weight kg
Coloured boots (can be replaced without dismantling the head)	Black	10	ZB2 BP012	0.003
	Green	10	ZB2 BP013	0.003
	Red	10	ZB2 BP014	0.003
	Yellow	10	ZB2 BP015	0.003
	Blue	10	ZB2 BP016	0.003

## Lens caps

## Circular lens caps for light sources with integral LED

Pilot lights	White	10	ZBV 0113	0.002
	Green	10	ZBV 0133	0.002
	Red	10	ZBV 0143	0.002
	Yellow	10	ZBV 0153	0.002
	Blue	10	ZBV 0163	0.002
	5 different coloured grooved lenses (1)		ZBV 0103S	0.010
Illuminated pushbuttons, with flush push	White	10	ZBW 9113	0.002
	Green	10	ZBW 9133	0.002
	Red	10	ZBW 9143	0.002
	Yellow	10	ZBW 9153	0.002
	Blue	10	ZBW 9163	0.002
Illuminated pushbuttons, with projecting push	White	10	ZBW 9313	0.002
	Green	10	ZBW 9333	0.002
	Red	10	ZBW 9343	0.002
	Yellow	10	ZBW 9353	0.002
	Blue	10	ZBW 9363	0.002

## Square lens caps for light sources with integral LED

Pilot lights	White	10	ZBC V0113	0.002
	Green	10	ZBC V0133	0.002
	Red	10	ZBC V0143	0.002
	Yellow	10	ZBC V0153	0.002
	Blue	10	ZBC V0163	0.002
Illuminated pushbuttons, with flush push	White	10	ZBC W9113	0.002
	Green	10	ZBC W9133	0.002
	Red	10	ZBC W9143	0.002
	Yellow	10	ZBC W9153	0.002
	Blue	10	ZBC W9163	0.002
Illuminated pushbuttons, with projecting push	White	10	ZBC W9313	0.002
	Green	10	ZBC W9333	0.002
	Red	10	ZBC W9343	0.002
	Yellow	10	ZBC W9353	0.002
	Blue	10	ZBC W9363	0.002

## Replacement keys for Emergency stop key release heads and key switches

Description	Key number	Reference	Weight kg
Set of 2 keys	455	ZBG 455	0.013
	421E	ZBG 421E	0.014
	458A	ZBG 458A	0.014
	520E	ZBG 520E	0.014
	3131A	ZBG 3131A	0.014
	4A185	ZBD A185	0.014
	LU1	ZBD LU1	0.014
	LU2	ZBD LU2	0.014
	LU3	ZBD LU3	0.014
	LU4	ZBD LU4	0.014
	LU5	ZBD LU5	0.014
	LU6	ZBD LU6	0.014
	LU7	ZBD LU7	0.014
	LU8	ZBD LU8	0.014
	LU9	ZBD LU9	0.014
	LU10	ZBD LU10	0.014
	LU11	ZBD LU11	0.014
	LU12	ZBD LU12	0.014
	LU13	ZBD LU13	0.014
	LU14	ZBD LU14	0.014
	8D1	ZBD 8D1	0.014

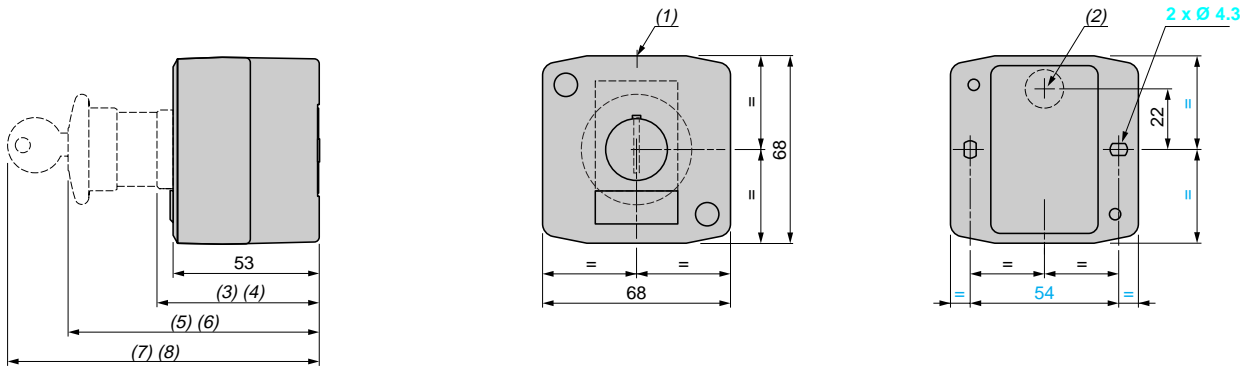
(1) 5 different coloured lenses: white, green, red, yellow and blue.

## Control stations and enclosures

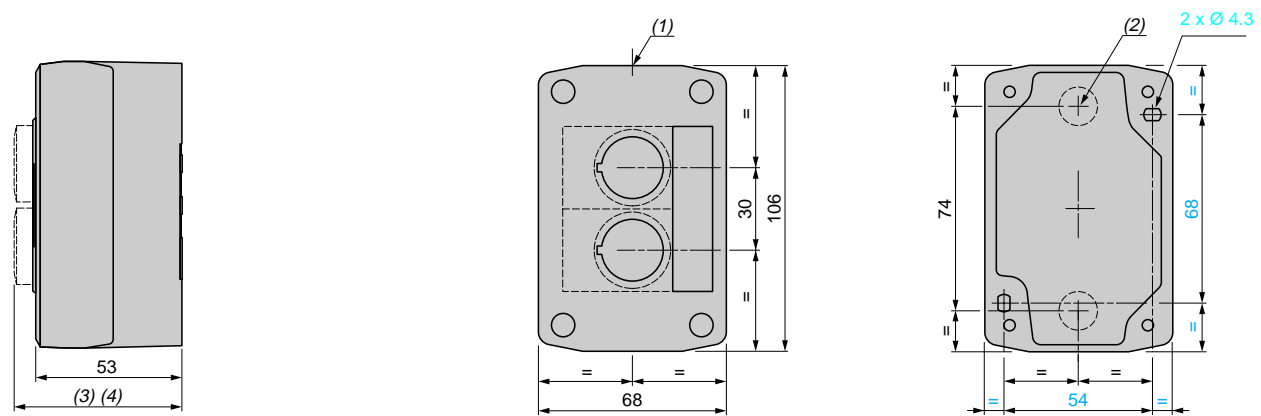
XAL control stations for Harmony® style 5  
 Ø 22 control and signalling units  
 With double insulated bezel

### Dimensions

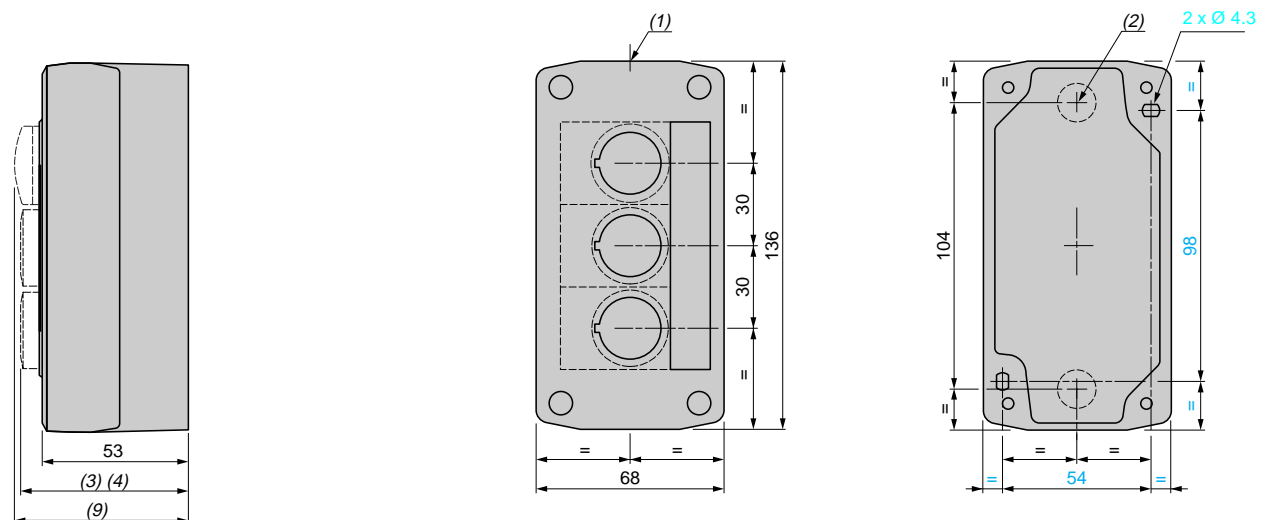
#### Single-way control stations XAL



#### 2-way control stations XAL



#### 3-way control stations XAL



(1) 2 knock-outs for Pg 13.5 cable gland, maximum capacity 12 mm.

(2) Knock-out for cable entry, maximum capacity 14 mm.

#### Examples

(3) 62 mm for flush pushbuttons.

(4) 66 mm for projecting pushbuttons.

(5) 91 mm for latching mushroom head Emergency stop pushbuttons.

(6) 74 mm for key switches.

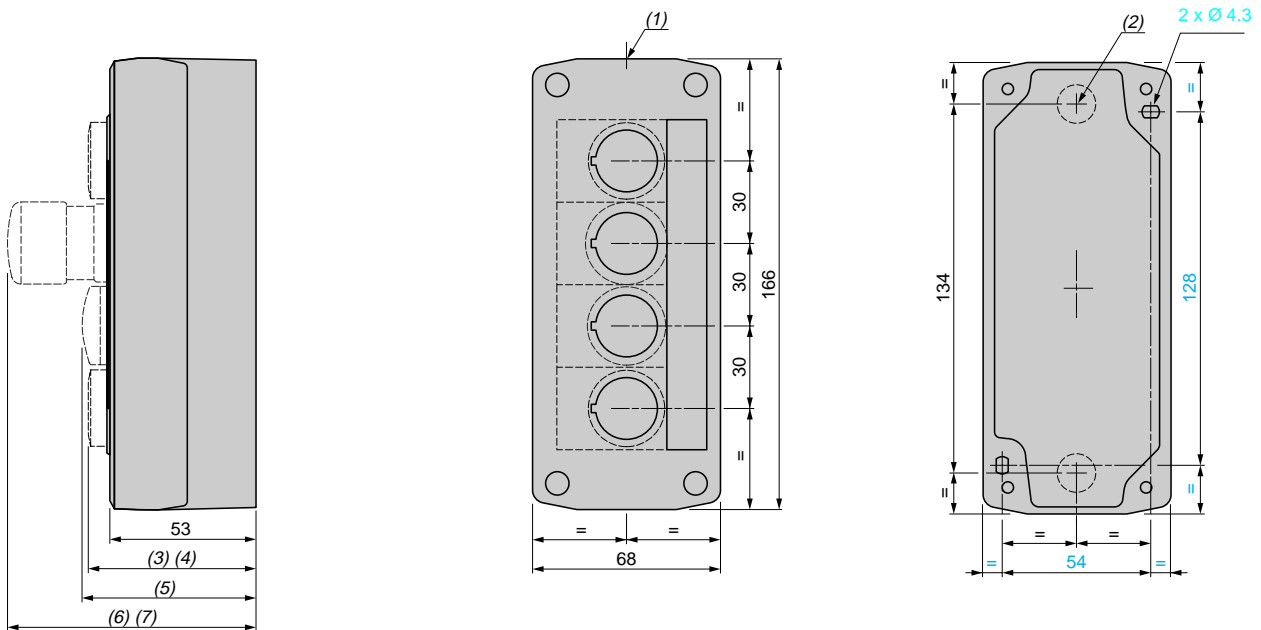
(7) 113 mm for latching mushroom head Emergency stop pushbuttons with key release.

(8) 96 mm for key switches with key inserted.

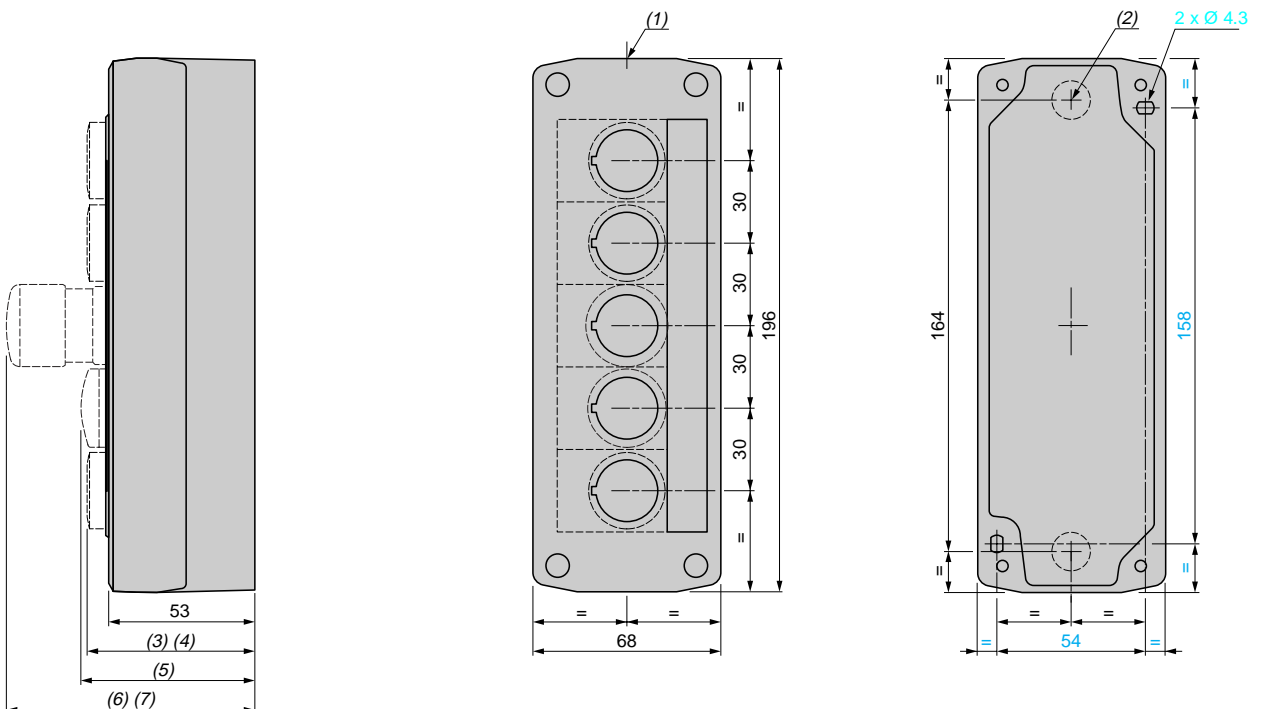
(9) 64 mm for pilot lights.

## Dimensions (continued)

### 4-way control stations XAL



### 5-way control stations XAL



(1) 2 knock-outs for Pg 13.5 cable gland, maximum capacity 12 mm.

(2) Knock-out for cable entry, maximum capacity 14 mm.

#### Examples

(3) 62 mm for flush pushbuttons.

(4) 66 mm for projecting pushbuttons.

(5) 64 mm for pilot lights.

(6) 87 mm for mushroom head pushbuttons.

(7) 78 mm for selector switches.

# Control stations and enclosures



XAL E control stations for Harmony® style 7  
“Series E” monolithic standard Ø 22 control and  
signalling units

## Characteristics

Conformity to standards		IEC 947-1
Ambient air temperature	For operation	°C - 25...+ 40
	For storage	°C - 40...+ 60
Electric shock protection	Conforming to IEC 536	Class II
Degree of protection	Conforming to IEC 529	IP 40
Material and colour		PC, light grey RAL 7035
Cable entries		Knock-out entries for n° 13 (CM12, Pg 13.5) cable gland and tapped ISO 20

## References

### Complete stations

Description	Type of push	Type of contact		Reference	Weight
					
Start or Stop function (light grey RAL 7035 lid and base)					
1 spring return pushbutton	Flush, green	1	–	XAL E101	0.133
	Flush, red	–	1	XAL E112	0.133
1 2-position stay put selector switch	Standard black handle	1	–	XAL E130	0.138
1 Ø 40 mm mushroom head pushbutton	Red, turn to release	–	1	XAL E160	0.145
Two functions (light grey RAL 7035 lid and base)					
2 spring return pushbuttons	1 flush, green	1	–	XAL E210	0.206
	1 flush, red	–	1		
	1 flush, green	1	–	XAL E220	0.206
	1 flush, black	–	1		
Three functions (light grey RAL 7035 lid and base)					
3 spring return pushbuttons	1 flush, green	1	–	XAL E310	0.258
	1 flush, red	–	1		
	1 flush, black	1	–		
	1 flush, green	1	–	XAL E320	0.270
	1 mushroom head	–	1		
	1 flush, black	1	–		

### Empty enclosures

Description	Number of cut-outs	Reference	Weight kg
Base and lid	1	XAL E01	0.113
	2	XAL E02	0.166
	3	XAL E03	0.198
<b>Accessory</b> (for IP 54 degree of protection)			
Seal	1	XAL E081	0.003
	2	XAL E082	0.005
	3	XAL E083	0.007

### For customer assembly:

Other stations can be assembled using adaptable sub-assemblies:  
Empty enclosures XAL E0● (see above) and “Series E” monolithic standard pushbuttons, switches and pilot lights, except pilot lights with integral transformer XB7 EV8● (see pages 1/150 to 1/154).



XAL E320



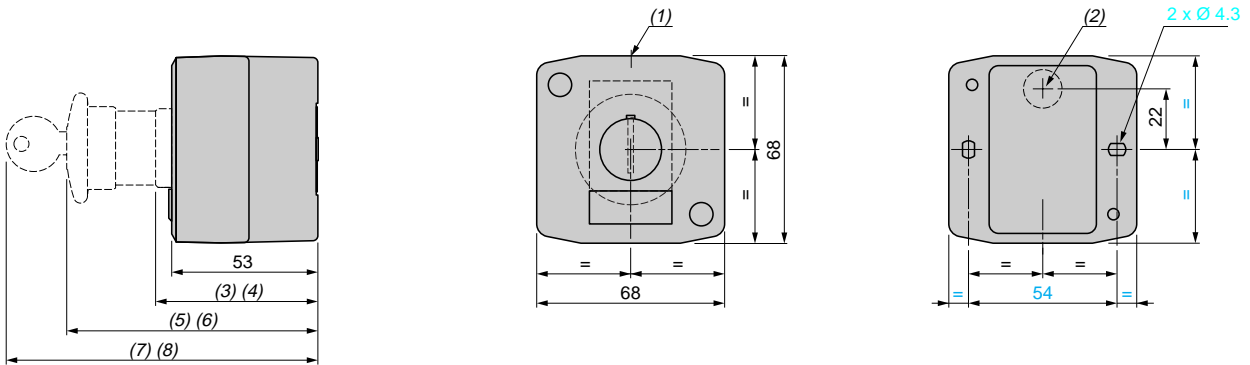
XAL E02

# Control stations and enclosures

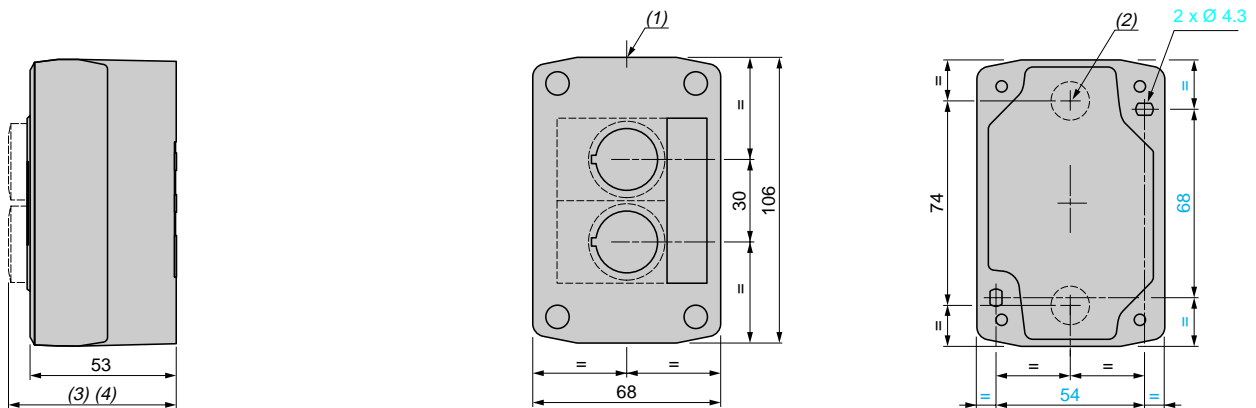
XAL E control stations for Harmony® style 7  
“Series E” monolithic standard Ø 22 control and  
signalling units

## Dimensions

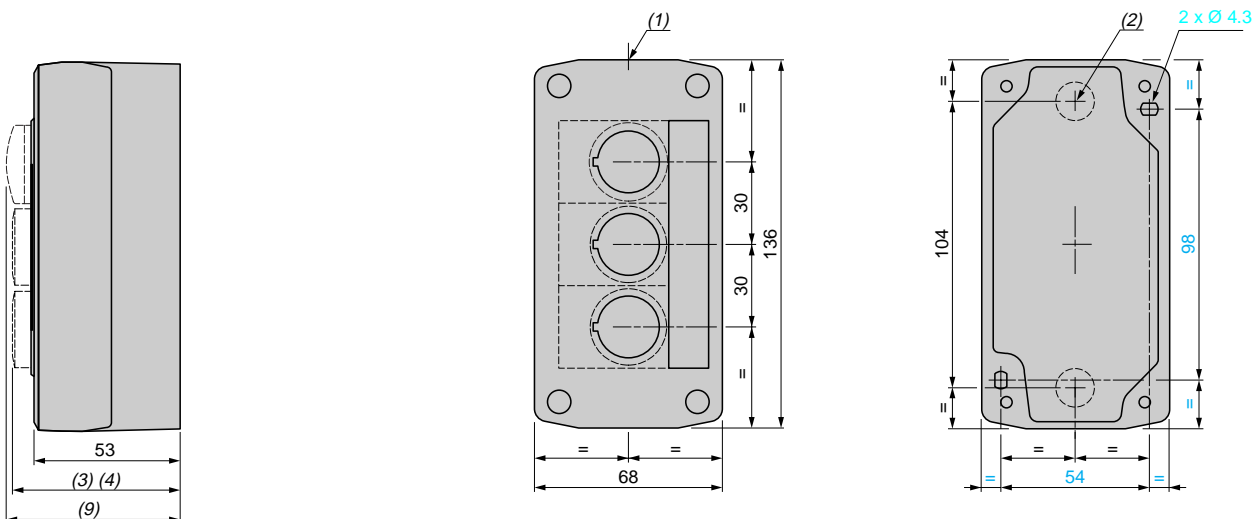
### Single-way control stations XAL E1●●



### 2-way control stations XAL E2●●



### 3-way control stations XAL E3●●



(1) 2 knock-outs for Pg 13.5 cable gland, maximum capacity 12 mm.

(2) Knock-out for cable entry, maximum capacity 14 mm.

## Examples

(3) 62 mm for flush pushbuttons.

(4) 66 mm for projecting pushbuttons.

(5) 91 mm for latching mushroom head Emergency stop pushbuttons.

(6) 74 mm for key switches.

(7) 113 mm for latching mushroom head Emergency stop pushbuttons with key release.

(8) 96 mm for key switches with key inserted.

(9) 64 mm for pilot lights.

## Characteristics

### Insulated enclosures XAP A

Material and colour			Glass-reinforced polyester, coloured grey throughout
Product certifications	Special version		CSA ENCLOSURE 4 and 5
Protective treatment	Standard version		"TC" and "TH"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Degree of protection	Conforming to IEC 529		IP 65
	Conforming to NF C 20-010		IP 657
Electric shock protection	Conforming to IEC 536 and NF C 20-030		Class II
Flame resistance			CSTB: M3, NF C 20-455: 850 °C, IEC 92: 960 °C, UL 94: VO
Resistance to chemical agents			Highly resistant to acids, bases, sea water, mineral salts, all solvents, petrol, diesel, oils and greases
Cable entries			Undrilled

### Elbowed metal enclosures XAM W

Material and colour			Aluminium alloy <b>XAM WD</b> : dark grey RAL 7016 lid, light grey RAL 7035 base <b>XAM WK01</b> : yellow RAL 1012 lid, light grey RAL 7035 base
Conformity to standards			IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60947-5-4
Protective treatment	Standard version		"TC" and "TH"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Degree of protection	Conforming to IEC 529		IP 65
Electric shock protection	Conforming to IEC 536		Class I
Flame resistance			CSTB: M3, NF C 20-455: 850 °C, IEC 92: 960 °C, UL 94: VO
Resistance to chemical agents			Good resistance to organic acids, diluted mineral acids, salts, alcohol, acetone, chloride and fluoride solvents, oils and petrol
Cable entries			Via opening in rear of enclosure

### Die-cast metal enclosures XAP M

Material and colour			<b>XAP M1, M2, M3 and M4</b> : zinc alloy. Blue paint finish <b>XAP M5</b> : aluminium alloy. Blue paint finish
Product certifications	Special version		CSA ENCLOSURE 4 and 5, UL ENCLOSURE 1, 3, 4 and 12K
Protective treatment	Standard version		"TC"
	Special version		"TH"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Degree of protection	Conforming to IEC 529		IP 65
	Conforming to NF C 20-010		IP 657
Electric shock protection	Conforming to IEC 536 and NF C 20-030		Class I
Resistance to chemical agents			Special treatments on request
Cable entries			Tapped entries for cable gland (see dimensions, page 2/39)

## Characteristics

### Metal enclosures XB2 S

Material and colour			Aluminium alloy or sheet steel. Blue paint finish
Protective treatment	Standard version		"TC"
	Special version		"TH"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Degree of protection	Conforming to IEC 529		IP 54
	Conforming to NF C 20-010		IP 547
Electric shock protection	Conforming to IEC 536 and NF C 20-030		Class I
Resistance to chemical agents			Special treatments on request
Cable entries	XB2 S in aluminium alloy		Tapped entries for cable gland (see dimensions, page 2/39)
	XB2 S in sheet steel		Undrilled

### Flush mounting enclosures XAP E

Material and colour			Anodised aluminium front plate. Insulated protective rear cover
Protective treatment	Standard version		"TC" and "TH"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Degree of protection	Conforming to IEC 529		IP 65
	Conforming to NF C 20-010		IP 657
Electric shock protection	Conforming to IEC 536 and NF C 20-030		Class I
Resistance to chemical agents			Good resistance to organic acids, diluted mineral acids, salts, alcohol, acetone, chloride and fluoride solvents, oils and petrol
Cable entries			Through rear cover: knock-out cable entries

# Control stations and enclosures

Control station enclosures: insulated, metal and flush mounting

With cut-outs for Ø 22 control and signalling units

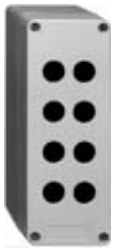
## References

**Insulated enclosures, glass-reinforced polyester** (usable depth 83 mm)

Description	Front face dimensions mm	Number of cut-outs	Number of rows		Reference	Weight kg
			Vertical	Horizontal		
Without hinges	85 x 146	1	1	1	XAP A1110	0.470
		2	1	2	XAP A1120	0.450
		4	2	2	XAP A1104	0.460
	85 x 226	8	2	4	XAP A2108	0.580
	151 x 241	16	4	4	XAP A3116	0.820
With hinges	151 x 241	16	4	4	XAP A4116	0.850
Earthing plates sheet steel with earth screw		For XAP A1110			XAP Z110	0.080
		For XAP A1120			XAP Z120	0.070
		For XAP A1104			XAP Z104	0.070
		For XAP A2108			XAP Z208	0.110
		For XAP A3116 and A4116			XAP Z316	0.160



XAP A1104



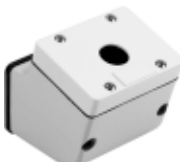
XAP A2108



XAP A3116



XAM WD03



XAM WK01

## Elbowed metal enclosures for mounting on vertical support

Description	Colour	Number of cut-outs	Reference	Weight kg
Elbowed enclosures metal	Dark grey lid (RAL 7016) Light grey base (RAL 7035)	1	XAM WD01	0.465
		2	XAM WD02	0.545
		3	XAM WD03	0.725
		4	XAM WD04	0.725
		5	XAM WD05	0.790
		6	XAM WD06	0.990
		7	XAM WD07	0.990
	Yellow lid (RAL 1012) Light grey base (RAL 7035)	1	XAM WK01	0.465

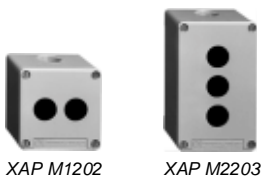
## Other versions

Insulated and metal control station enclosures with cut-outs for Ø 30 control and signalling units.  
Protective guards and fixing lugs for die-cast metal enclosures.  
Insulated and metal control station enclosures pre-fitted with Ø 22 units.  
Adjustable floor mounting pedestal (790 mm to 1143 mm) for sheet steel enclosures.  
Please consult your Regional Sales Office.

## Control stations and enclosures

Control station enclosures: insulated, metal and flush mounting

With cut-outs for Ø 22 control and signalling units



XAP M1202

XAP M2203



XAP M2504

XAP M4508



XB2 SL42009



XB2 SL64007

## References

Description	Front face dimensions mm	Number of cut-outs	Number of rows		Reference	Weight kg	
			Vertical	Horizontal			
Die-cast metal enclosures (blue lid and base)							
Zinc alloy Usable depth 49 mm	80 x 80	1	1	1	XAP M1201	0.455	
		2	2	1	XAP M1202	0.450	
	80 x 130	2	1	2	XAP M2202	0.610	
		3	1	3	XAP M2203	0.605	
		4	2	2	XAP M2204	0.600	
	80 x 175	3	1	3	XAP M3203	0.870	
		4	1	4	XAP M3204	0.880	
		6	2	3	XAP M3206	0.870	
	Zinc alloy Usable depth 74.5 mm	80 x 80	1	1	1	XAP M1501	0.605
			2	2	1	XAP M1502	0.600
		80 x 130	2	1	2	XAP M2502	0.810
			3	1	3	XAP M2503	0.815
4			2	2	XAP M2504	0.810	
80 x 175		3	1	3	XAP M3503	1.145	
		4	1	4	XAP M3504	1.140	
		6	2	3	XAP M3506	1.130	
80 x 220		6	1	6	XAP M4506	1.380	
		8	2	4	XAP M4508	1.370	
Aluminium Usable depth 74.5 mm		85 x 310	8	1	8	XAP M5508	0.810
			12	2	6	XAP M5512	0.790
Aluminium Usable depth 78 mm	150 x 150	6	3	2	XB2 SL32009	0.970	
		8	4	2	XB2 SL42009	0.960	
Die-cast metal enclosures (yellow lid, blue base)							
Zinc alloy Usable depth 49 mm	80 x 80	1	1	1	XAP J1201	0.455	
Zinc alloy Usable depth 74.5 mm	80 x 80	1	1	1	XAP J1501	0.605	
Sheet steel enclosures							
Usable depth 115 mm	200 x 200	8	4	2	XB2 SL42007	3.100	
	200 x 260	16	4	4	XB2 SL44007	3.900	
	260 x 260	24	6	4	XB2 SL64007	4.700	
	260 x 320	30	6	5	XB2 SL65007	5.500	
	320 x 320	40	8	5	XB2 SL85007	6.200	
Other versions							
Insulated and metal control station enclosures with cut-outs for Ø 30 control and signalling units. Protective guards and fixing lugs for die-cast metal enclosures. Insulated and metal control station enclosures pre-fitted with Ø 30 units. Adjustable floor mounting pedestal (790 mm to 1143 mm) for sheet steel enclosures. Please consult your Regional Sales Office.							

# Control stations and enclosures

Control station enclosures: insulated, metal and flush mounting

Undrilled or with cut-outs for Ø 22 control and signalling units

## References

### Insulated enclosures, undrilled

Description		Front face dimensions (mm)	Reference	Weight kg
Usable depth 83 mm	Without hinges	85 x 146	<b>XAP A1100</b>	0.470
		85 x 226	<b>XAP A2100</b>	0.600
		151 x 241	<b>XAP A3100</b>	0.860
	With hinges	151 x 241	<b>XAP A4100</b>	0.890
Earthing plates with earth screw	For XAP A1100	–	<b>XAP Z100</b>	0.080
	For XAP A2100	–	<b>XAP Z200</b>	0.130
	For XAP A3100 and A4100	–	<b>XAP Z300</b>	0.200

### Die-cast metal enclosures, undrilled

Description	Material	Front face dimensions (mm)	Reference	Weight kg
Blue lid and base	Zinc alloy Usable depth 49 mm	80 x 80	<b>XAP M11</b>	0.460
		80 x 130	<b>XAP M21</b>	0.620
		80 x 175	<b>XAP M31</b>	0.900
	Zinc alloy Usable depth 74.5 mm	80 x 80	<b>XAP M14</b>	0.610
		80 x 130	<b>XAP M24</b>	0.830
		80 x 175	<b>XAP M34</b>	1.160
		80 x 220	<b>XAP M44</b>	1.410
	Aluminium Usable depth 74.5 mm	85 x 310	<b>XAP M54</b>	0.850
	Aluminium Usable depth 78 mm	150 x 150	<b>XB2 SA220095</b>	0.970
	Yellow lid, blue base	80 x 80	<b>XAP J11</b>	0.460
		80 x 80	<b>XAP J14</b>	0.610
		80 x 175	<b>XAP J34</b>	1.160

### Flush mounting enclosures for Ø 22 control and signalling units

Description	Material	Number of cut-outs	Front face dimensions (mm)	Reference	Weight kg
Front plates with fixing screws	Aluminium, anodised	1	72 x 72	<b>XAP E301</b>	0.050
		2	72 x 105	<b>XAP E302</b>	0.075
		3	72 x 138	<b>XAP E303</b>	0.095
		4	72 x 171	<b>XAP E304</b>	0.115
		5	72 x 204	<b>XAP E305</b>	0.135
Protective rear covers	Insulated	For front plate XAP E301		<b>XAP E901</b>	0.040
		For front plate XAP E302		<b>XAP E902</b>	0.050
		For front plate XAP E303		<b>XAP E903</b>	0.060
		For front plate XAP E304		<b>XAP E904</b>	0.070
		For front plate XAP E305		<b>XAP E905</b>	0.080

### Separate components

Description		Colour	Unit reference	Weight kg
Blanking plugs with seal and fixing nut for cut-outs Ø 22.3 <sup>+0.4</sup> mm	Insulated	Black	<b>ZB2 SZ3</b>	0.005
		Grey	<b>ZB2 SZ4</b>	0.005
	Metal	Blue	<b>ZB2 SZ2</b>	0.020
Seal (IP 65 degree of protection) (sold in lots of 7)	For mounting Ø 22 control and signalling units in XAM W● enclosures		<b>ZB2 BZ004</b>	0.001

### Other versions

Protective guards and fixing lugs for metal enclosures.  
Flush mounting enclosures, undrilled or with Ø 30 cut-outs.  
Flush mounting enclosures pre-fitted with Ø 22 units.  
Please consult your Regional Sales Office.

2



XAP A1100

XAP A2100

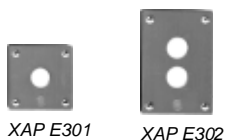


XAP A3100



XAP M11

XAP M31



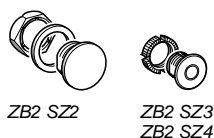
XAP E301

XAP E302



XAP E303

XAP E305



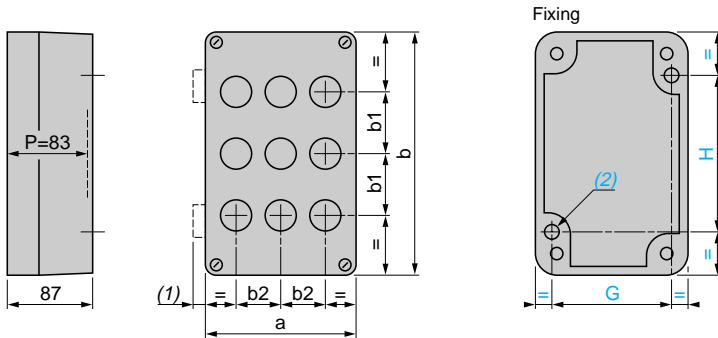
ZB2 SZ2

ZB2 SZ3  
ZB2 SZ4

#### Dimensions

##### Insulated enclosures with cut-outs

###### XAP A



XAP	a	b	b1	b2	G	H
A1110	85	146	—	—	70	105
A1120	85	146	40	—	70	105
A1104	85	146	40	30	70	105
A2108	85	226	40	30	70	180
A3116, A4116	151	241	40	30	135	200

Drill cable entries to suit.

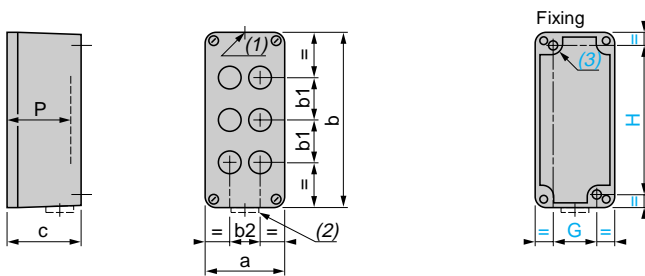
(1) 11 mm for XAP A4... enclosures with hinges.

(2) 2 x Ø 5.6 holes, depth 12.

P = Usable depth

##### Die-cast metal enclosures with cut-outs

###### XAP J, XAP M



XAP	a	b	b1	b2	c	G	H	P
J1201	80	80	—	—	51.5	50	65	49
J1501	80	80	—	—	77	50	65	74.5
M1201, M1202	80	80	—	—	51.5	50	65	49
M1501	80	80	—	—	77	50	65	74.5
M1502	80	80	—	30	77	50	65	74.5
M2202	80	130	40	—	51.5	50	115	49
M2203	80	130	30	—	51.5	50	115	49
M2204	80	130	40	30	51.5	50	115	49
M2502	80	130	40	—	77	50	115	74.5
M2503	80	130	30	—	77	50	115	74.5
M2504	80	130	40	30	77	50	115	74.5
M3203	80	175	40	—	51.5	50	160	49
M3204	80	175	30	—	51.5	50	160	49
M3206	80	175	40	30	51.5	50	160	49
M3503	80	175	40	—	77	50	160	74.5
M3504	80	175	30	—	77	50	160	74.5
M3506	80	175	40	30	77	50	160	74.5
M4506	80	220	30	—	77	50	205	74.5
M4508	80	220	40	30	77	50	205	74.5
M5508	85	310	30	—	77	55	295	74.5
M5512	85	310	40	30	77	55	295	74.5

(1) 1 hole, without blanking plug, for cable gland with 14 mm maximum clamping capacity, except:

- XAP M3... and XAP M4...: maximum capacity 18 mm,
- XAP M5...: maximum capacity 24 mm.

(2) 1 hole, with blanking plug (protrusion 6 mm), for cable gland with 14 mm maximum clamping capacity, except:

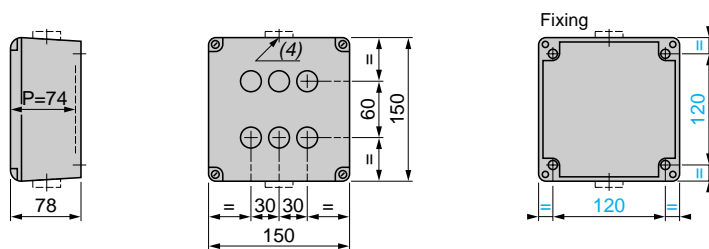
- XAP M3...: maximum capacity 18 mm,
- XAP M4... and XAP M5...: undrilled.

(3) 2 x Ø 5.6 holes, depth 20.

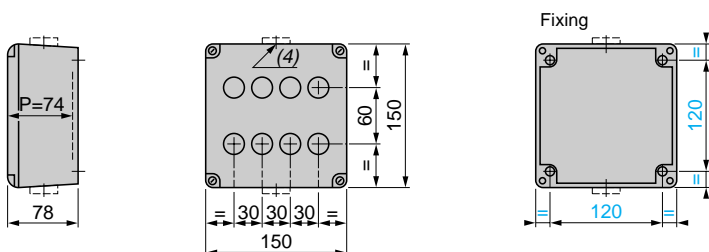
(4) 2 holes, with blanking plugs (protrusion 7.5 mm), for cable glands with 12 mm maximum clamping capacity.

P = Usable depth

###### XB2 SL32009



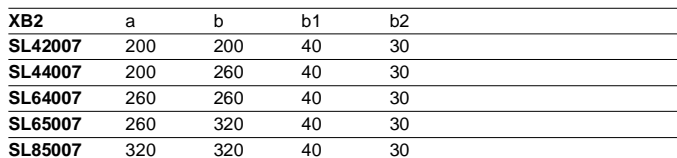
###### XB2 SL42009



Control station enclosures: insulated, metal and flush mounting

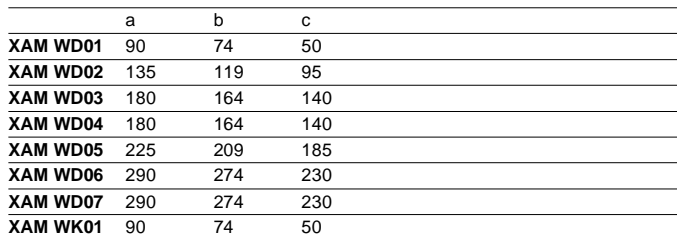
## Dimensions

## XB2 SL



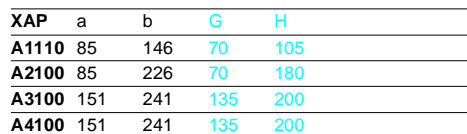
Enclosures supplied without fixing points or cable entries. In both cases drill to suit.  
The depth of the enclosures enables all types of Ø 22 units to be mounted.  
P = Usable depth

## XAM W●



**XAP A1100, XAP A2100**

**XAP A3100, XAP A4100**



Drill cable entries to suit.

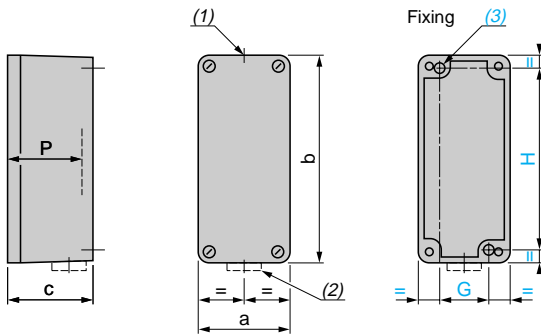
(1) 11 mm for XAP A4●●● enclosures with hinges.  
(2) 2 x Ø 5.6 holes, depth 12.

P = Usable depth

## Dimensions

### Die-cast metal enclosures, undrilled

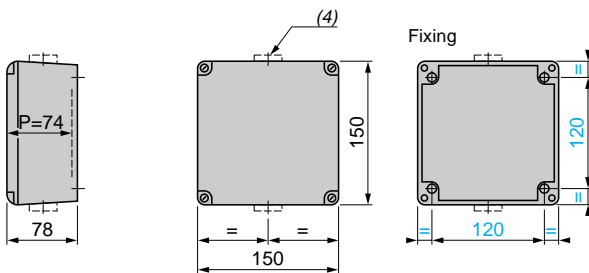
XAP J●●, XAP M●●



XAP	a	b	c	G	H	P
J11	80	80	51.5	50	65	49
J14	80	80	77	50	65	74.5
J34	80	175	77	50	160	74.5
M11	80	80	51.5	50	65	49
M14	80	80	77	50	65	74.5
M21	80	130	51.5	50	115	49
M24	80	130	77	50	115	74.5
M31	80	175	51.5	50	160	49
M34	80	175	77	50	160	74.5
M44	80	220	77	50	205	74.5
M54	85	310	77	55	295	74.5

- (1) 1 hole, without blanking plug, for cable gland with 14 mm maximum clamping capacity, except:  
 □ XAP J34, M31, M34 and M44: maximum capacity 18 mm,  
 □ XAP M54: maximum capacity 24 mm.  
 (2) 1 hole, with blanking plug (protrusion 6 mm), for cable gland with 14 mm maximum clamping capacity, except:  
 □ XAP J34, M31 and M34: maximum capacity 18 mm,  
 □ XAP M44, M54: undrilled.  
 (3) 2 x Ø 5.6 holes, depth 20.  
 (4) 2 holes, with blanking plug (protrusion 7.5 mm), for cable glands with 12 mm maximum clamping capacity.  
 P = Usable depth

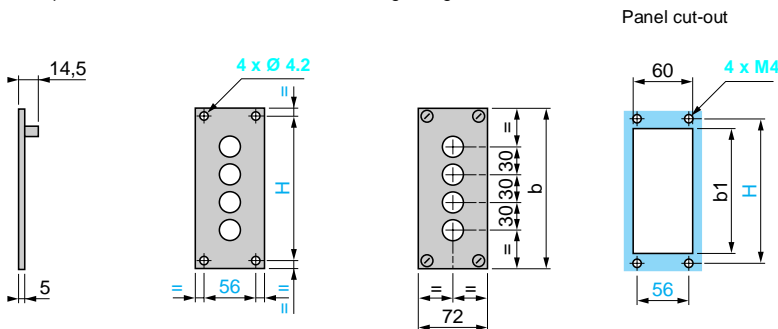
XB2 SA220095



## Flush mounting enclosures

XAP E30●

Front plates with cut-outs for Ø 22 control and signalling units

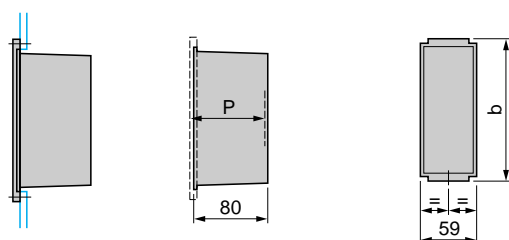


### For Ø 22 control and signalling units

#### Front plate

XAP	b	b1	H
E301	72	44	56
E302	105	77	89
E303	138	110	122
E304	171	143	155
E305	204	176	188

Mounting of front plate and protective rear cover on support panel



### Protective rear cover for front plate XAP E30●

XAP	b	P
E901	52	82.5
E902	85	82.5
E903	118	82.5
E904	151	82.5
E905	184	82.5

P = Usable depth

### Operating principle

These control stations are fitted with a key operated lock and are designed to provide a starting or authorisation sequence by using the key.  
To prevent unauthorised operation (shorting of the contact block) or tampering, the stations are fitted with a special lock featuring a pre-determined key position (other than its withdrawal position) that only allows removal of the front cover by the key holder.  
The control stations are supplied with 2 keys.

### Environment

Conformity to standards			IEC 947-5-1, EN 60947-5-1
Protective treatment	Standard version		"TC"
	Special version		"TH"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Electric shock protection	Conforming to IEC 536		Class I
Degree of protection	Conforming to IEC 529		IP 54
	Conforming to EN 50102		IK 08
Cable entries			1 tapped entry for cable gland and 1 entry through the rear (Ø 17 mm knock-out), with rubber cable grommet (see dimensions on next page)

### Contact block characteristics

Nominal thermal current	Conforming to IEC 947-5-1	A	10
Rated insulation voltage			Ui = 600 V, degree of pollution 3 conforming to IEC 947-1
Rated impulse withstand voltage			Uimp = 6 kV conforming to IEC 947-1
Contact	Type		1 N/O slow break contact
	Material		Silver alloy (Ag/Ni)
Resistance across terminals		mΩ	≤ 25
Terminal referencing			Conforming to EN 50013 and EN 50050
Short-circuit protection	Conforming to IEC 947-5-1		10 A cartridge fuse type gG

### Rated operational power

Conforming to IEC 947-5-1.  
Utilisation categories AC-15 and DC-13.  
Operating rate: 3600 operating cycles/hour.  
Load factor: 0.5

#### AC-15: A600

Ue (V)	600	240	120
Ie (A)	1.2	3	6

#### DC-13: Q600

Ue (V)	600	250	125
Ie (A)	0.1	0.27	0.55

#### d.c. supply —

Power broken in W for 1 million operating cycles

Voltage (V)	24	48	120
mm (W)	65	48	40

### Connection

Screw clamp terminals, cross head screws slotted for 4 and 5.5 mm screwdrivers  
Maximum clamping capacity: 1 x 2.5 mm<sup>2</sup> or 2 x 1.5 mm<sup>2</sup> with or without cable end  
Tightening torque: 0.8 Nm

### References



XAP S11111N



XAP S21111



XAP S21331



XAP S24431



XAP SZ12

#### Control stations with 1 N/O contact per function

Description	Key withdrawal	Marking	Mounting	Reference	Weight kg
2 position, stay put	Left-hand position	O I	Surface	XAP S11111N	0.830
			Flush	XAP S14111N	0.890
2 position, spring return from right to left	Left-hand position	→	Surface	XAP S11221N	0.830
			Flush	XAP S14221N	0.890
2 position, stay put + 2 spring return buttons	Left-hand position	↑ O ↓	Surface	XAP S21111	1.080
			Flush	XAP S24111	1.190
3 position, stay put	Centre position	↑ O ↓	Surface	XAP S11331N	0.850
			Flush	XAP S14331N	0.910
3 position, spring return from left and right to centre	Centre position	↑ O ↓	Surface	XAP S11431N	0.850
			Flush	XAP S14431N	0.910
3 position, stay put + 1 spring return button	Centre position	← Stop O →	Surface	XAP S21331	1.070
			Flush	XAP S24331	1.180
3 position, spring return from left and right to centre + 1 spring return button	Centre position	← Stop O →	Surface	XAP S21431	1.070
			Flush	XAP S24431	1.180

#### 100 x 100 front plates (for XAP S11●●●N control stations)

Description	Marking	Reference	Weight kg
2 position, stay put	O I	XAP SZ11	0.045
2 position	→	XAP SZ12	0.045
3 position	↑ O ↓	XAP SZ13	0.045

#### Other versions

XAP S control stations with front plate without fixing hole (fixing by enclosure).  
XAP S control stations with specific markings and/or key numbers.  
Please consult your Regional Sales Office.

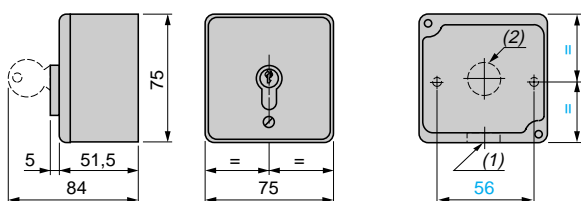
#### Accessories (for control stations XAP S11●●●N and XAP S14●●●N)

Description	Key number	Reference	Weight (kg)
		Key only	2 keys + barrel (1)
Keys	Number to be stated	XAP SZ50	XAP SZ15
		0.011	0.140
	BC1011	XAP SZ01	XAP SZ16
		0.011	0.140
	BC1025	XAP SZ02	XAP SZ17
		0.011	0.140
	BC1029	XAP SZ03	XAP SZ18
		0.011	0.140
	BC1031	XAP SZ04	XAP SZ19
		0.011	0.140
	BC1069	XAP SZ05	XAP SZ20
		0.011	0.140

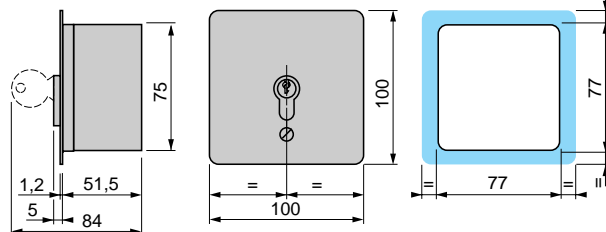
(1) For barrels with other key numbers, please consult your Regional Sales Office.

### Dimensions, mounting

XAP S11●●●N

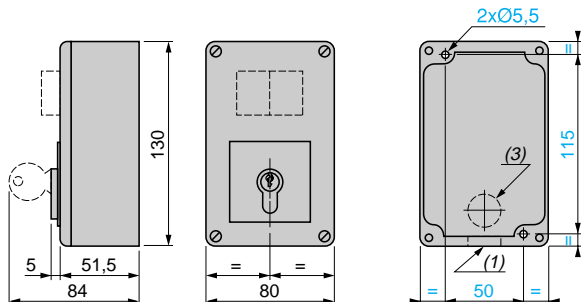


XAP S14●●●N



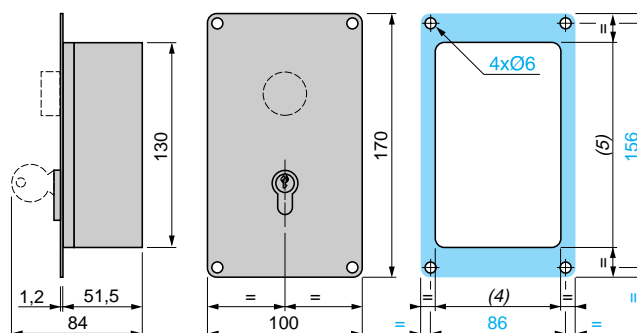
Panel cut-out

XAP S21●●●



Fixing

XAP S24●●●



Panel cut-out

(1) 1 tapped entry for 12 mm maximum capacity cable gland.  
(2) Knock-out: cable entry through rear, Ø 17 mm.  
(3) Optional: cable entry through rear.

(4) 81 mm min.  
(5) 131 mm min.

### Environment

Conformity to standards	All models		IEC 337-1, NF C 63-140, VDE 0660-200, CSA C 22-2 n° 14.
	XAS E35		NF C 15-100 (537-2)
Product certifications	Standard version	XAS E, XAS P	NEMKO
Protective treatment	Standard version	XAS P, XAS E	"TC"
Ambient air temperature	For operation	°C	- 25...+ 70
	For storage	°C	- 40...+ 70
Vibration resistance	XAS E35		15 gn (40...500 Hz) conforming to IEC 68-2-6
Electric shock protection	XAS E		Class I conforming to IEC 526 and NF C 20-030
	XAS P		Class II conforming to IEC 526 and NF C 20-030
Degree of protection	XAS E		IP 54
	XAS P		IP 40
Cable entries			See dimensions, page 2/45

### Contact block characteristics

Nominal thermal current	<b>A</b>	10 conforming to IEC 337-1, NF C 63-140, VDE 0660-200
Nominal insulation voltage	<b>V</b>	500 conforming to IEC 158-1, NF C 20-040, VDE 0110
Insulation category		Group C conforming to NF C 20-040 and VDE 0110
Contact operation		Slow break
Terminal referencing		Conforming to CENELEC EN 50013
Short-circuit protection		10 A cartridge fuse type g or N conforming to IEC 337-1B, VDE 0660-200
Rated operational power		Conforming to IEC 337-1. Utilisation categories AC-11 and DC-11. Operating rate: 3600 operating cycles/hour. Load factor: 0.5.
	<b>a.c. supply ~ 50-60 Hz</b>	<b>d.c. supply =</b>
	Power broken in VA	Power broken in W
	Inductive circuit	Inductive circuit
	Voltage V	Voltage V
	24 48 127 220	24 48 120
	<b>XAS P●●</b> 200 400 650 700	<b>XAS P●●</b> 65 48 40
	<b>XAS E●●</b> 200 550 750 650	<b>XAS E●●</b> 85 70 65

Connection		Screw clamp terminals. Clamping capacity: min. 1 x 0.5 mm <sup>2</sup> , max. 1 x 2.5 mm <sup>2</sup> or 2 x 1.5 mm <sup>2</sup>
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### References



XAS P1●



XAS E11

#### Emergency stop stations

Description	Release	Contacts	Reference	Weight kg
<b>Conforming to standard NF C 15-100</b> Manually operated after breaking glass (1)	With hammer and access key	N/C	<b>XAS E32</b>	1.060
		N/C + N/O	<b>XAS E35</b>	1.075

#### Fire alarm stations

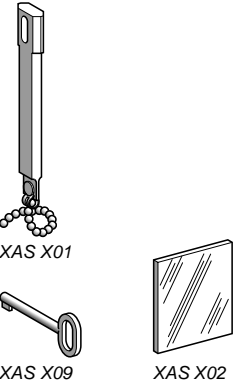
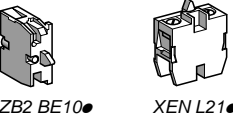
Description	Application	Contact state (1)		Reference	Weight kg
		Closed	Open		
<b>"Buildings" type</b> Double insulated semi-recessed mounting (Ø 60 mm cut-out) using fixing clamps	Automatically operated as glass broken	1	—	<b>XAS P11</b>	0.140
		—	1	<b>XAS P12</b>	0.140
<b>"Industry" type</b> Zinc alloy Wall mounted using screw fixings Hammer and access key included	Automatically operated as glass broken	1	—	<b>XAS E11</b>	1.060
		—	1	<b>XAS E12</b>	1.060
		2	—	<b>XAS E13</b>	1.075
		—	2	<b>XAS E14</b>	1.075
		1 +	1	<b>XAS E15</b>	1.075
	Manually operated after breaking glass	1	—	<b>XAS E21</b>	1.060
		—	1	<b>XAS E22</b>	1.060
		2	—	<b>XAS E23</b>	1.075
		—	2	<b>XAS E24</b>	1.075
		1 +	1	<b>XAS E25</b>	1.075

(1) Contact state:

- for automatically operated stations: after breaking the glass,
- for manually operated stations: after breaking the glass and pressing the button.

**Other versions** Two-hand control station on adjustable height plinth.  
Please consult your Regional Sales Office.

References (continued)



Separate components and spare parts

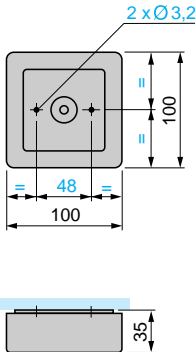
Description	Application	Contact	Reference	Weight kg
Contact blocks slow break (1)	For XAS P1	Closed	ZB2 BE102	0.015
		Open	ZB2 BE101	0.015
	For XAS E1 (2)	Closed	XEN L2121	0.013
		Open	XEN L2111	0.013
	For XAS E2, XAS E3 (2)	Closed	XEN L2111	0.013
		Open	XEN L2121	0.013
Hammer	For XAS P or XAS E	–	XAS X01	0.090
Glass	For XAS P or XAS E	–	XAS X02	0.014
Access key	For XAS E	–	XAS X09	0.016

(1) The contact states (closed or open) for XAS P and XAS E1 control stations are after breaking the glass and for XAS E2 control stations, after breaking the glass and pressing the button.  
(2) For control stations with 2 contacts, use 2 single contact blocks.  
Examples: for XAS E13, use 2 x XEN L2121; for XAS E25 or E35, use 1 x XEN L2121 + 1 x XEN L2111.

Dimensions

XAS P

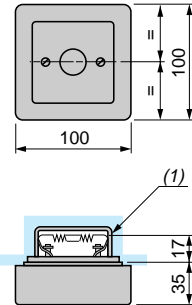
Screw fixing



For fixing, open cover.

XAS P

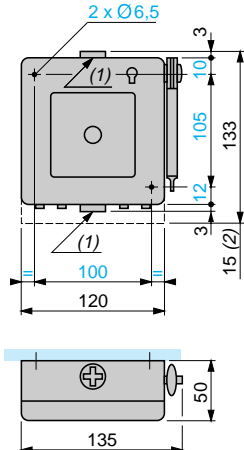
Fixing by clamps in Ø 60 cut-out for semi-recessed mounting



For fixing, open cover.  
(1) Semi-recessed mounting.

XAS E

Screw fixing, cover opened for access



(1) 1 tapped entry for 12 mm maximum capacity cable gland.  
(2) Allowance for opening cover.

## Installation system

Profil front panels for Harmony® style 4 and style 5 pushbuttons, switches and pilot lights

2

### Description

Profil is a modular front panel solution for standard Human-Machine Interface applications. The front panels are made of aluminium and are covered with a polyester membrane. Three sizes are available for fitting of 4, 8 or 12 metal or plastic Ø 22 mm control and signalling units.

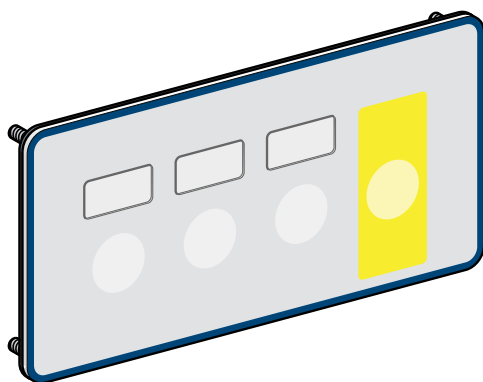
The front panel is held in position by threaded inserts. The rear panel comprises a printed circuit board onto which the contact blocks are fitted and a connector provides the electrical connection between the module and the rest of the installation.

This simple and aesthetic solution simplifies the installation of a dialogue block by reducing both drilling and cabling operations.

It is particularly suitable for small and medium sized groups of machines.

When the Profil front panel is mounted directly on the machine, it incorporates a location for the Emergency stop unit and ensures a degree of protection of IP 65.

Profil front panels are available in three forms



### Front panel only

■ for mounting dialogue components using traditional wiring,

or

■ for implementation of printed circuit by the user.

### Front panel + printed circuit board

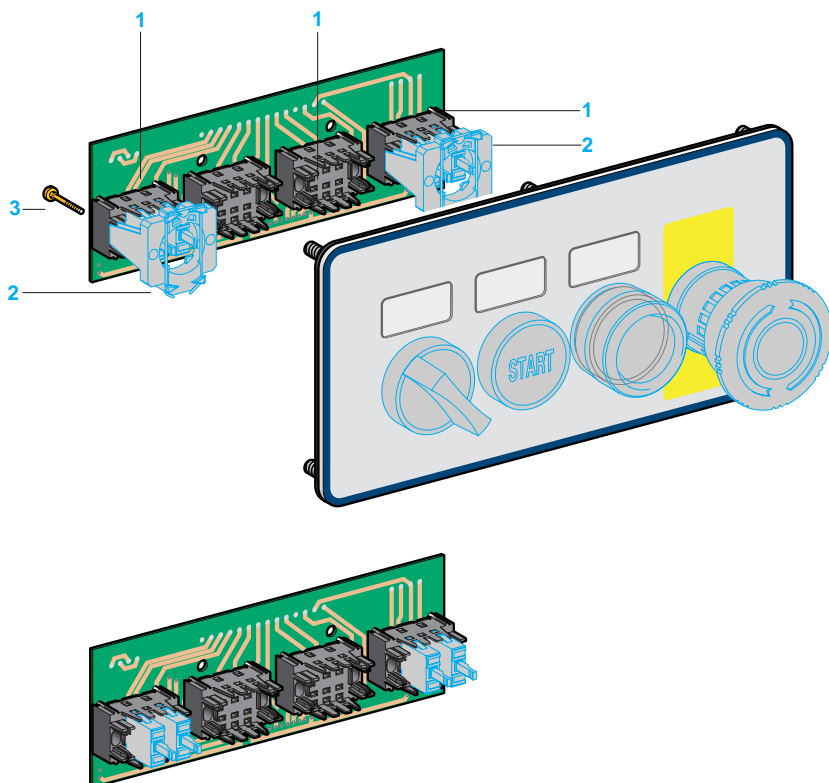
with corresponding adaptors **1** for the Ø 22 mm ranges of pushbuttons, switches, pilots, contact blocks and light blocks.

Connection by screw terminal connector.

Use at least one support pillar **2** with its 2 fixing screws **3** for every 2 dialogue components, and also beneath each Emergency stop unit.

### Printed circuit board only

with soldered adaptor, screw terminal connector or 4 I/4 O connector for AS-Interface bus.






For quantities of units in excess of a few hundred, the front panels can be customised, for example: colours, logo, specific markings. Please consult your Regional Sales Office.

## Characteristics

<b>Conforming to standards</b>			IEC 60947-1, IEC 60947-5-1, UL 508, CSA C-22-2 n° 14
<b>Product certifications</b>			CSA, UL
<b>CE marking</b>			Profil front panels have been designed to comply with European LV directives
<b>Shock protection</b> Conforming to IEC/EN 61140	Panel fitted with <b>XB4 B</b> units		Class I
	Panel fitted with <b>XB5 A</b> units		Class II
<b>Degree of protection</b>			IP 65
<b>Ambient air temperature</b> around the device	Operation	°C	- 25...+ 70
	Storage	°C	- 40...+ 70
<b>Vibration resistance</b> Conforming to IEC 60068-2-6	Panel fitted with <b>XB4 B</b> or <b>XB5 A</b> units		15 gn for all units except mushroom head pushbuttons (frequency 10 to 500 Hz)
			5 gn for mushroom head pushbuttons (frequency 10 to 500 Hz)
<b>Electric shock resistance</b> Conforming to IEC 60068-2-27	Panel fitted with <b>XB4 B</b> or <b>XB5 A</b> units		All functions except mushroom head pushbuttons (half sine wave acceleration 11 ms): 50 gn
			Mushroom head pushbuttons (half sine wave acceleration 11 ms): 10 gn
<b>Rated operational current (Ie)</b> Supply via connector	Per circuit comprising 4 units	A	1 at ≈ 30 V
	Total (3 circuits each comprising 4 units)	A	3 at ≈ 30 V
<b>Cabling capacity</b>	Using screw connector	mm <sup>2</sup>	1.5
	Connector for AS-Interface	mm <sup>2</sup>	1.5
<b>AS-Interface profile</b> S7.0	Outputs for 4 pilot lights		— 24 V, 1.2 W, 50 mA per output
	Inputs for 4 N/C or 4 N/O contacts		24 V, 5 mA

## References

	Description	Number of holes for dialogue units	Reference	Weight kg
<b>Front panels</b>				
 821035 KT4 F	Front panels only with location for Emergency stop unit	4	KT4 F	0.242
		8	KT8 F	0.340
		12	KT12 F	0.430
 821036 KT8 F	Front panels only without location for Emergency stop unit	4	KT4 G	0.242
		8	KT8 G	0.340
		12	KT12 G	0.430
 821037 KT12 F	Front panels with location for Emergency stop unit + printed circuit board with soldered adaptor	4	KT4 EHC	0.312
		8	KT8 EHC	0.466
		12	KT12 EHC	0.624
	Description	Maximum number of associated dialogue units	Reference	Weight kg
<b>Printed circuit board only</b>				
	Printed circuit board with soldered adaptor	4	KT4 BHC	0.146
		8	KT8 BHC	0.230
		12	KT12 BHC	0.312
	Printed circuit board only with integral 4 I/O interface for AS-Interface line	4	KT4 BHS	0.230

# Installation system

Profil front panels for Harmony® style 4 and style 5 pushbuttons, switches and pilot lights  
Separate components

## Separate components

### Contact blocks for printed circuit board

Description	Type of contact		Sold in lots of	Unit reference	Weight kg
	N/O	N/C			
Standard contact blocks	1	–	10	ZBE 701	0.002
	–	1	10	ZBE 702	0.002
Special contact blocks (for low power switching and with dust protection)	1	–	10	ZBE 7016	0.003
	–	1	10	ZBE 7026	0.003

### Light blocks for printed circuit board

Description	Supply voltage V	Colour of LED	Sold in lots of	Unit reference	Weight kg
Integral LED	≈ 24	White	5	ZBV B17	0.004
		Green	5	ZBV B37	0.004
		Red	5	ZBV B47	0.004
		Yellow	5	ZBV B57	0.004
		Blue	5	ZBV B67	0.004

### Fixing collars with electrical blocks (contact or light)

For use with	Sold in lots of	Unit reference	Weight kg
XB4 B dialogue units	10	ZB4 BZ009	0.038
XB5 A dialogue units	10	ZB5 AZ009	0.006

### Accessories for printed circuit board mounting

Description	For use with	Sold in lots of	Unit reference	Weight kg
Support pillar for printed circuit board (1)	XB4 B units	10	ZB4 BZ079	0.003
	XB5 A units	10	ZB5 AZ079	0.006

### Adaptor (socket) for printed circuit board

For use with	Thickness of printed circuit board	Sold in lots of	Unit reference	Weight kg
Electrical block (contact or light)	1.6 mm ± 0.2	10	ZBZ 010	0.008
	2.2 mm ± 0.2	10	ZBZ 011	0.008
	3.2 mm ± 0.2	10	ZBZ 012	0.008

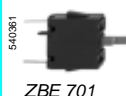
Fixing screws for mounting printed circuit board on support pillar	Mounting electrical blocks using adaptor ZBZ 010	10	ZBZ 006	0.011
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### Other accessories

Description	For use with	Sold in lots of	Unit reference	Weight kg
Blank legend strip	4 dialogue units (1 row)	10	KTL	–
Sheet of 76 8 x 27 mm legends	For sticking onto strip KTL	10	ZBY 4100	0.043
"SIS Label" labelling software for use with legend strip KTL	English, French, German, Italian, Spanish	1	XBY 2U	0.100

(1) Use at least one support pillar with its 2 fixing screws for every 2 dialogue units fitted (and beneath each Emergency stop unit).

2



ZBE 701



ZBV B07



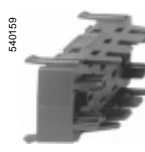
ZB4 BZ009



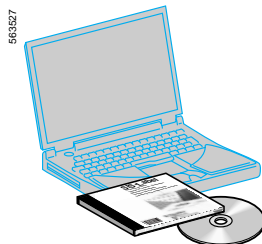
ZBE BZ009 + ZB4 BZ079



ZB5 AZ009



ZBZ 010



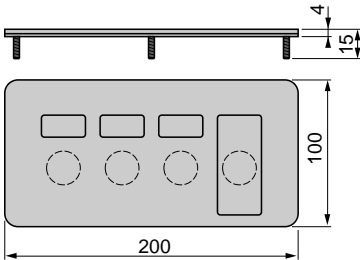
XBY 2U

## Installation system

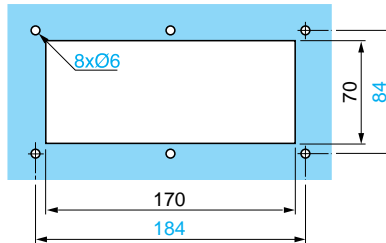
Profil front panels for Harmony® style 4 and style 5 pushbuttons, switches and pilot lights

### Front panel

KT4 F

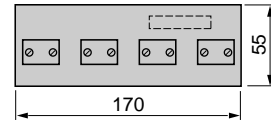


### Support cut-out



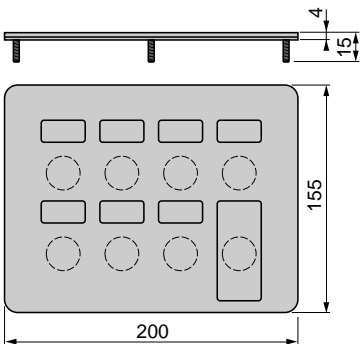
### Printed circuit board

KT4 BHC

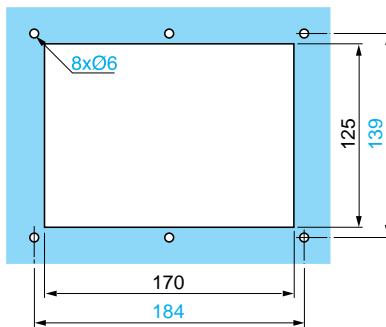


### Front panel

KT8 F

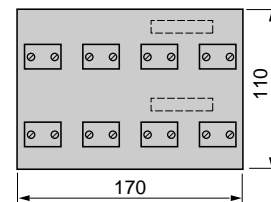


### Support cut-out



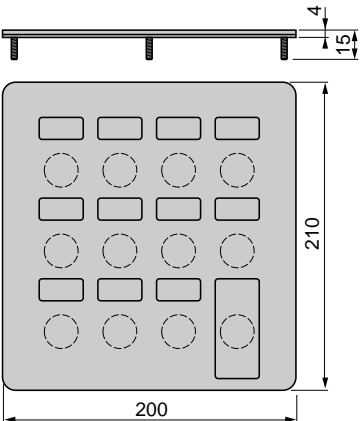
### Printed circuit board

KT8 BHC

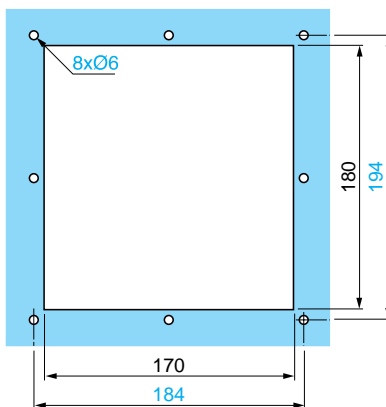


### Front panel

KT12 F

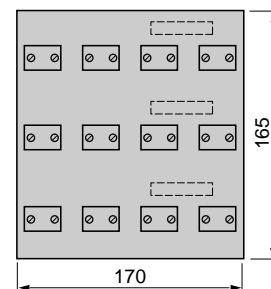


### Support cut-out



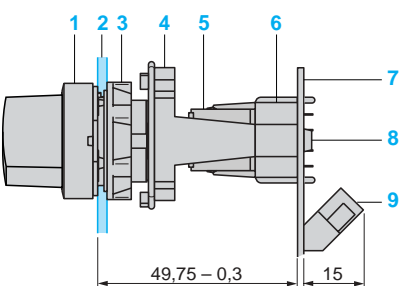
### Printed circuit board

KT12 BHC

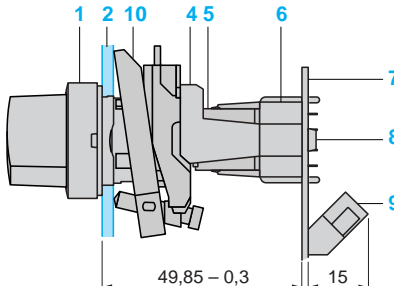


### Mounting detail for printed circuit board

XB5 A



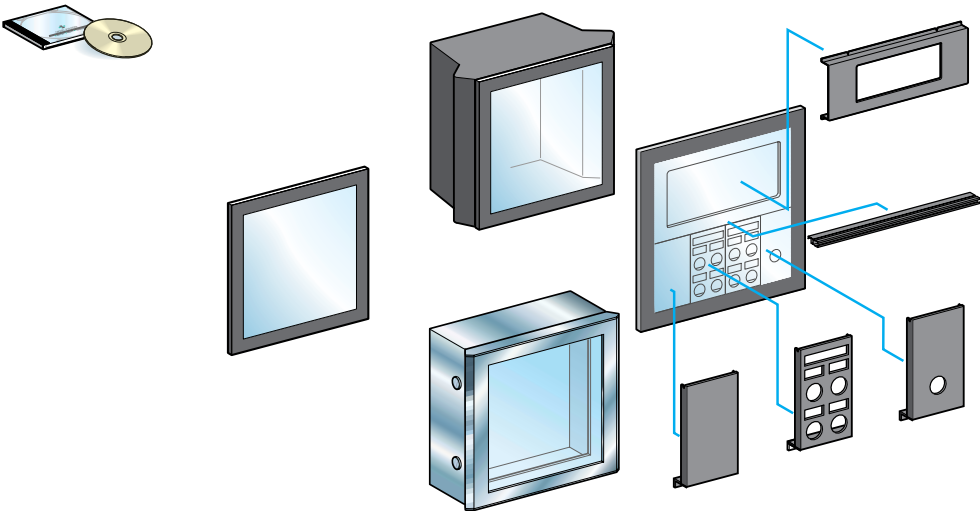
XB4 B



- 1 Head ZB5 A or ZB4 B
- 2 Panel (Profil front panel)
- 3 Fixing nut for head
- 4 Support pillar
- 5 Electrical block ZBE 70●/ZBV B●7
- 6 Adaptor socket ZBZ 01●
- 7 Printed circuit board
- 8 Fixing screw ZBZ 006
- 9 Connector (included with printed circuit board)
- 10 Fixing collar ZB4 BZ009

2

Functions	Define	Assemble
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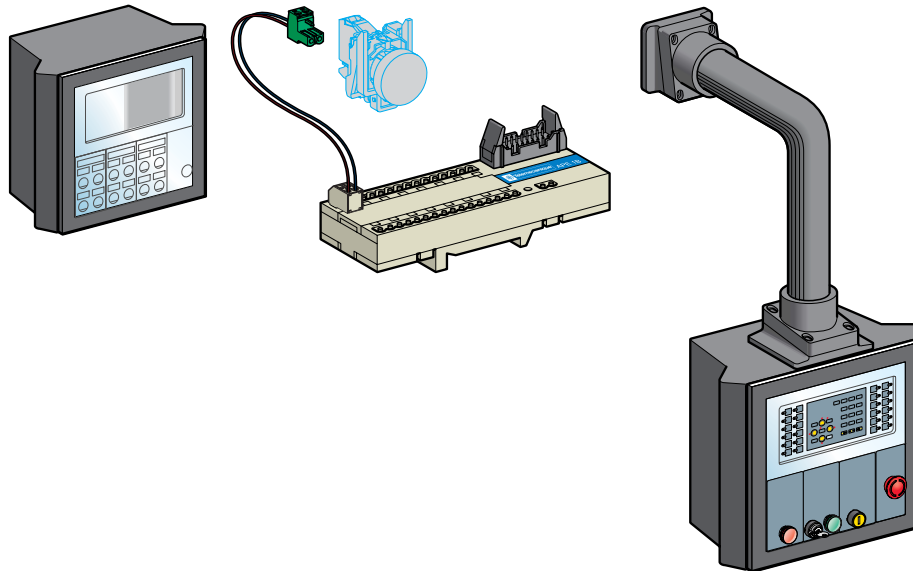


Product type		Software	Dialboard front panels					Dialpack control console				Solid plates	Plates with cut-outs	
For Human-Machine Interfaces		All types	All types										Special types	Ø 16, 22 and 30 units
Number of modules <i>(1)</i>	Height H	–	3	6	9	9	9	3	6	9	9	1 to 7	1 to 3	
	Width W	–	4	4	2	4	6	4	4	4	6	1 to 4	1 to 4	
Type		On CD-Rom	–											
Models		–	–					Steel or stainless steel type 304				–		
Set-up accessories		–	Tool kit, cross-pieces, brackets, wiring guide, ducting clips											
References		APD 1C	APD 1B					APD 1P				APD 1V	APD 1D	
Pages		2/61	2/58										2/59	2/58 and 2/59

(1) H = 50 mm, L = 75 mm.

## Connect

## Build into machines



	Pre-assembled kits		Connecting cables for pushbutton controls	Interfaces for Dialbase PLC or AS-Interface Line	Dialfix fixed arms	Dialmove moving arms
Display units Terminals Keypads	Magelis XBT P and Ø 22 pushbutton controls		Ø 16 and 22	–	–	–
1 to 7	6		–	–	–	–
1 to 6	4		–	–	–	–
	Dialboard	Dialpack	–	–	Complete kit	Components to be assembled
<input type="checkbox"/> DIN display units <input type="checkbox"/> Magelis terminals <input type="checkbox"/> XBL C● keypads <input type="checkbox"/> Various display units	–		2-way connector	<input type="checkbox"/> HE10 connector 8/80 or 16I <input type="checkbox"/> 230 V <input type="checkbox"/> AS-Interface	<input type="checkbox"/> Straight fixed arm, 500 or 1000 mm in length <input type="checkbox"/> Elbowed fixed arm, 500 mm in length	<input type="checkbox"/> Straight tubes <input type="checkbox"/> Right-angled joints <input type="checkbox"/> Rotating or tilted joints <input type="checkbox"/> Straight or elbowed fixings, fixed or rotating
			Self-stripping connectors		–	–

APD 1A	APD 1Z	APE 1C	APE 1B APE 1F	APD 1F	APD 1M
2/59 and 2/60	2/60	2/64		2/65	2/67

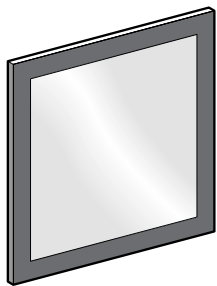
### Presentation

The modular Tego Dial system is used to define Human-Machine interfaces. It facilitates the installation of Ø 22, 16 and 30 mm control and signalling units, DIN format display units, Magelis terminals and display units, XBL keypads and other products.

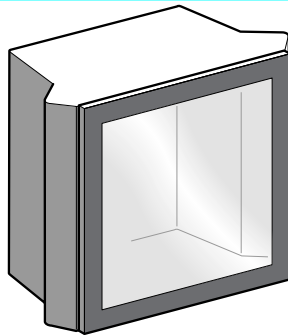
Tego Dial simplifies an HMI application by:

- definition of the application by Tego Dial Design software,
- quick assembly of control, signalling and display units, through the use of modular elements,
- standard connections from the control and signalling units to PLCs, buses and other products,
- easy integration of the dialogue application into the machine, control panel, enclosure or machine housing, either directly or using suspension arms.

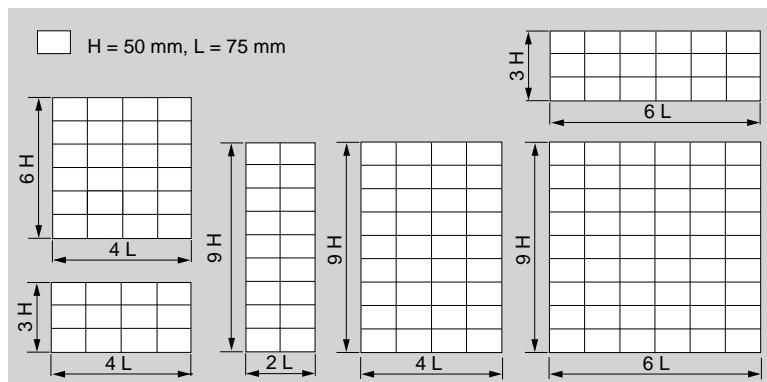
### Description



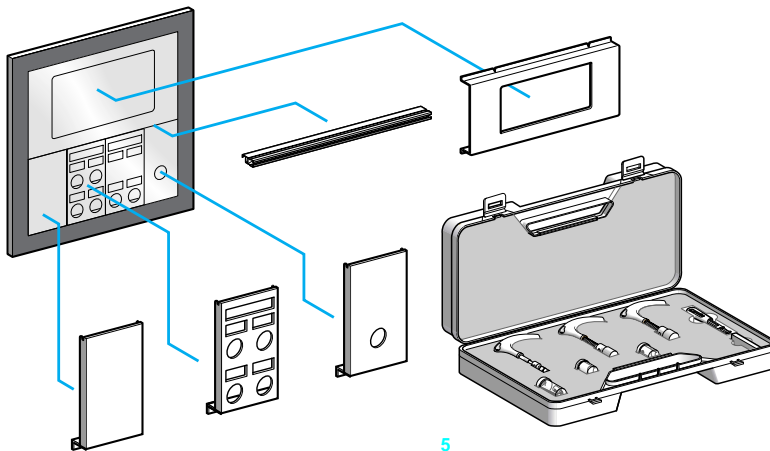
1



3



2



4

#### ■ Tego Dial Design definition software

This software on CD-ROM facilitates graphical definition of the dialogue application in relation to the control units, pilot lights and display units necessary for the device.

It selects the correct Tego Dial components that are required for the application and also features a legend design and printing function, for both the front panel and the connections.

#### ■ Dialboard front panels 1

The front panels basically comprise a grey, RAL 7016, painted aluminium frame which is covered by a polycarbonate film. Six sizes are available based on a modular pattern of height H = 50 mm and width W = 75 mm. The sizes are 3H x 4W, 3H x 6W, 6H x 4W, 9H x 2W, 9H x 4W and 9H x 6W.

#### ■ Dialpack control consoles 3

Four control consoles are available in the following modular sizes: 3H x 4W, 6H x 4W, 9H x 4W and 9H x 6W.

The Dialpack console is an assembly comprising a Dialboard type front panel and a folded and welded sheet steel enclosure, painted in textured grey RAL 7016.

The front panel is hinged and can be opened to 120°. Closing is by a 1/4 turn device, with stop and locking by Ronis key n° 455. Double bar or CNOMO triangular key locks are also available. A customising component in 2 versions - yellow or unpainted - enhances the Dialpack unit and makes it more ergonomic. A Dialpack S version in stainless steel type 304 is available for corrosive environments. This version conforms to enclosure standard EN 50298.

#### ■ Plates and cross-pieces 4

A range of modular dimensioned plates facilitates the installation of all combinations of control and signalling units, operator dialogue terminals and other devices. These plates are attached directly to the framework of the front panel.

The plates, made from sheet steel and painted grey RAL 7016, are designed for the following product ranges:

- Ø 22, Ø 16 and Ø 30 control and signalling units,
- DIN format display units,
- operator terminals and displays (Magelis and others),
- keypads,
- other units: joystick controllers, cam switches, etc.

Cross-pieces aid vertical mounting of several rows of plates. Cut-outs in the plates are dimensioned to suit the dialogue or display units that are to be installed. Some plate versions for Ø 22 units are available with knock-outs, which need to be removed before mounting the product. Other versions incorporate cut-outs for clip-in mounting of the transparent polycarbonate legend holders included with the plate. Alternatively, solid plates are also available for mounting any special equipment required.

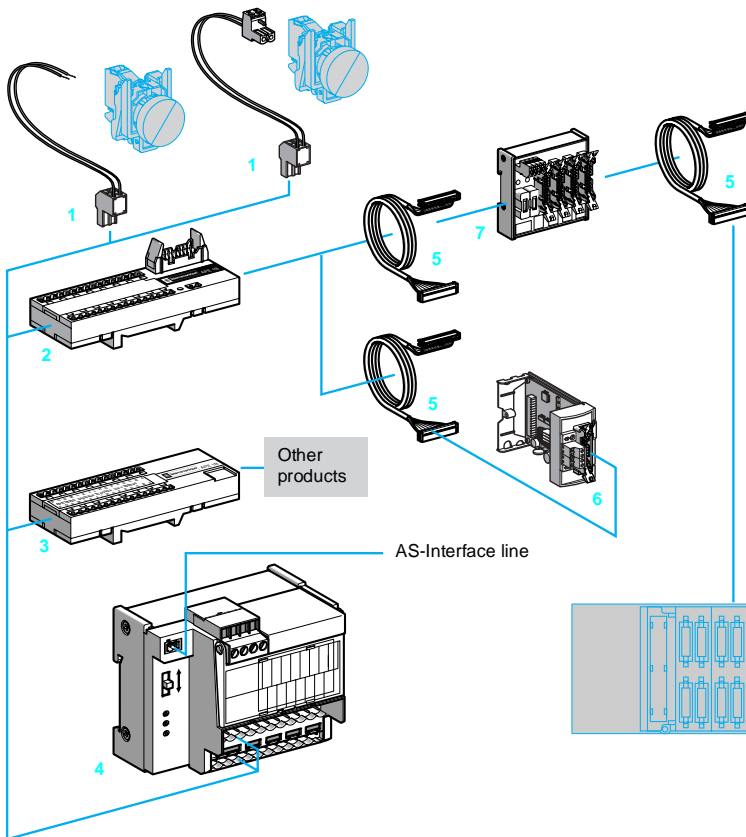
#### ■ Tool Kit 5

The installation of dialogue and display units requires cut-outs to be made through the polycarbonate film. To simplify this operation, the plate is marked with cut-out guides and a tool kit is available, comprising cutting tools and replacement blades.

#### ■ Pre-assembled kits

Dialboard and Dialpack with pre-assembled plates and cross-pieces are available.

### Standard connections



Tego Dial offers a range of interface components and cabling accessories that simplify connection of control and signalling units to PLCs, buses and other products.

The main components which make up this range are:

- prefabricated connection cables and self-stripping connectors **1**, on 5 mm pitch, for connecting control and signalling units to Dialbase interfaces,
- Dialbase 8I/8O or 16I interfaces **2**, with integrated commons, for connecting control and signalling units to PLCs via prefabricated Telefast connection cables **5**,
- an active splitter block **7** for connecting a Dialbase 8I/8O interface to PLCs with a connection modularity greater than 8I/8O,
- a Dialbase 230 V interface **3** for connecting control and signalling units to any product up to 230V,
- a Dialbase AS-Interface 4I/4O module **4**, with integrated commons for connecting control and signalling units to the AS-Interface line.

The selection guide on page 2/62 indicates the type and quantity of components (Dialbase interfaces, active splitter block, Telefast connection cables) required to connect the control and signalling units to various types of PLC. The most efficient connection is achieved using the Dialbase 8I/8O interface and the Telemecanique TSX Micro PLC card TSX DMZ16DTK **6**.

2

### Dialfix and Dialmove suspension arms



The Dialpack control console can be fitted directly using four adjustable lugs, AE3-FX122. However, for improved ergonomics, it is usually mounted on a suspension arm. This can be either fixed (Dialfix) or moving (Dialmove).

#### Dialfix fixed arms

Two versions are available:

- a straight fixed arm kit, comprising a straight Ø 70 mm tube, 500 or 1000 mm in length, and a pair of clamps (one for each end). Depending on which way round the clamps are fitted, an inclination of +/- 15° from the neutral position can be achieved.
- an elbowed (90°) fixed arm kit, 500 mm in length. This kit also includes the pair of clamps described above.

#### Arms for corrosive environments

These arms, in 304 type stainless steel, provide 350° rotation on the Dialpack fixing side. Two versions are available:

- straight arm kit, length 1000 mm.
- 90° elbowed arm kit, length 500 mm.

#### Dialmove moving arms

This arm enables an extensive choice of mounting configurations. The cabling runs through the elements which have removable side covers for easy access.

Various configurations can be achieved by combining the following components:

- straight tubes (100 to 1000 mm long),
- 90° joint,
- wall fixing brackets (straight or elbowed, fixed or mobile),
- straight fixing plates (one fixed, one rotating) for Dialpack,
- 15° tilted joints,
- rotating joint allowing -90° to +90° rotation in the same plane.

## Environment

Product type		Dialboard APD 1B●●	Dialpack APD 1P●●			Dialpack APD 1P●●S				
Protective treatment			"TC"			"TH"				
Ambient air temperature	Storage	°C	- 25...+ 55							
	Assembly	°C	- 5...+ 40							
Operating conditions			For indoor use only							
Vibration resistance	Conforming to Bureau VERITAS		5...100 Hz, 0.7 gn							
Resistance to mechanical shock	Conforming to IEC 68-2-27		11 ms (half sine wave), 15 gn (acceleration)							
Resistance to external mechanical impact	Conforming to EN-50-102		IK9							
Degree of protection	IEC 529 - DIN40050 NFC 20-010		IP 55 (Dialboard mounted in its cut-out)		IP 65					
Resistance to incandescent wire	Conforming to IEC 695-2-1	°C	960							
Maximum thermal resistance		W	–	1P34 50	1P64 100	1P94 160	1P34S 40	1P64S 90	1P94S 130	1P96S 160
Product certifications			UL, CSA BV (pending)							

## Mechanical characteristics

Material	Front panel film		Polycarbonate (Vinyl-acrylic Co-polymer protection)		
	Frame		Aluminium	Aluminium (outside of Dialpack)	Aluminium (inside of Dialpack)
	Door		–	Aluminium + polycarbonate	Stainless steel type 304 + polycarbonate
	Rear console		–	Sheet steel, folded and welded	Stainless steel type 304
Paint finish	Frame		Textured, 100 % polyester powder over chromate primer		Clear anodising (inside of Dialpack)
	Rear console		–	Textured 100 % polyester over zinc phosphate primer	–
Colour	Frame		Grey RAL 7016		–
	Rear console		–	Grey RAL 7016	–
Door opening			–	Hinged, 120° opening	Hinged, 120° opening (can be lifted off hinges)
Closure system			–	1/4-turn device with stop, Ronis key n° 455	1/4-turn device with stainless steel stop, double bar key
Plates/frame earth continuity			Via construction + screw		
Earthing			By screw on frame	M6 studs + earth cable	
Permissible load			25 kg evenly distributed		
Sealing gasket			Polyurethane continuous seal		
Fixing			By clamps (included)	Drilled (positions premarked)	Drilled

## Characteristics of front panel film: resistance to chemical products (1)

Chemical products			Immersion in the product		Depositing of drips	
Family	Type	Concentration/pH	External panel	Internal panel	External panel	Internal panel
Solvents	Trichlo	100 %	Not resistant	Not resistant	Resistant	Not resistant
	Acetone	100 %	Not resistant	Not resistant	Resistant	Not resistant
	Balthane	100 %	Not resistant	Not resistant	Resistant	Not resistant
Hydrocarbons	Petrol	100 %	Resistant	Resistant 24 H	Resistant	Resistant
Cutting oil	40R oil	100 %	Resistant	Resistant	Resistant	Resistant
Alcohol	Methanol	100 %	Not resistant	Not resistant	Resistant	Resistant
	Ethanol	100 %	Not resistant	Not resistant	Resistant	Resistant
Miscellaneous	White spirit	100 %	Resistant	Resistant	Resistant	Resistant
Acids	Chlorine	30 %	Resistant	Resistant	Resistant	Resistant
	Lactic acid	pH4	Resistant	Resistant	Resistant	Resistant
Others	Sulphur	pH13	Resistant	Resistant	Resistant	Resistant
	Industrial detergent	pH10	Resistant	Resistant	Resistant	Resistant

(1) Information given is typical. Special conditions (temperature, dilution rates, mixing of products, etc) may cause results to vary.  
Please consult your Regional Sales Office which will be happy to provide samples for your tests.

Environment							
Product types			APE 1B24●, 1R1628, 1FASI1			APE 1PAD21	APE 1PR21
Protective treatment				“TC”		–	–
Degree of protection (against direct contact)	Conforming to IEC 529			IP 20		IP 20	IP 20
Product certifications	UL, CSA			Yes		Yes	Pending
	BV			Pending		Pending	Pending
	AS-Interface (for APE 1FASI1 only)			N° 179		–	–
Resistance to incandescent wire	Conforming to IEC 695-2-1		°C	750: extinction < 30 s		–	–
Resistance to mechanical shock	Conforming to IEC 68-2-27		ms	11 (half sine wave)		–	–
			gn	15 (acceleration)		–	–
Vibration resistance	Conforming to Bureau VERITAS		Hz	5...100		–	–
			gn	0.7 (acceleration)		–	–
Resistance to electrostatic discharge	Conforming to IEC 1000-4-2			Level 3		–	–
Resistance to radiated fields	Conforming to IEC 1000-4-3		MHz	Level 3		–	–
Resistance to fast transients	Conforming to IEC 1000-4-4			Level 3		–	–
Electrical surge withstand	Conforming to IEC 1000-4-5		kV	1 at 2 Ω (series mode), 2 at 12 Ω (common mode)		–	–
Ambient air temperature							
Operation	Conforming to IEC 1131-2		°C	- 5...+ 60		–	–
	Conforming to IEC 998-2-3/999-8-8		°C	–		< 60	< 55
Storage	Conforming to IEC 1131-2		°C	- 40...+ 80		–	–
Insulation voltage	Terminals/mounting rails		kV	2 (for 1 minute)		–	4 (for 1 minute)
	Conforming to IEC 998-1		kV	–		0.5	0.5
Permissible voltage	Conforming to IEC 998-2-3		kV (c)	–		< 0.25	< 0.25
Permissible current	Conforming to IEC 998-2		A	–		< 9	< 12
Resistance to withdrawal of cable			N	–		30	50 (for 2.5 mm²)
Installation category	Conforming to IEC 664			II		–	–
Degree of pollution	Conforming to IEC 664			2		–	–
Mounting	Standard mounting rail or support supplied			Height of standard □□ mounting rail 7.5 or 15 mm		–	–
Connectors							
Base type	APE 1B24M	APE 1B24E	APE 1B230	APE 1R1628	APE 1FASI1	APE 1PAD21	APE 1PR21
Number of channels and functions	8 inputs and 8 outputs	16 inputs	–	16 I + 16 O in 2 x 8 I/8 O	4 inputs 4 solid state outputs	–	–
Number of active ways	–	–	16, volt-free	–	–	2	2
Connector type, component side	2-way, 5 mm pitch per channel	2-way, 5 mm pitch per channel	Up to 16-way, 5 mm pitch	2 x HE 10, 20-way	2-way, 5 mm pitch per channel	2-way, 5 mm pitch per channel	2-way, 5 mm pitch
Connector type / number of ways, PLC side	1 x HE 10, 20-way	1 x HE 10, 20-way	–	2 x HE 10, 20-way	–	–	–
Connector type, AS-Interface side	–	–	–	–	2 x 2-way, 5 mm pitch	–	–
Connection, cable side	–	–	–	–	–	Manual, cannot be disconnected	Spring, can be disconnected
Compatible cable	–	–	–	–	–	AWG-18-1007 or HO5VK 0.75 mm² (1)	0.14 to 2.5 mm² (1) 0.2 to 2.5 mm² (2)

(1) Flexible cable, multicore, copper

(2) Rigid cable.

#### Supply characteristics

Base type			APE 1B24M		APE 1B24E	APE 1B230	APE 1R1628	APE 1FASI1
Connector type	Accessory plug		2-way, 5 mm pitch (1)	2-way, 5 mm pitch (1)	—	—	—	—
	Supply plug		—	—	—	4-way, 5 mm pitch (1)	2 x 4-way, 5 mm pitch (1) inputs via AS-Interface line, outputs via external --- 24 V supply	
Supply indicator		—	Green LED on inputs			—	Green LED on inputs Green LED on outputs	Green LED on inputs (via AS-Interface line) Green LED on outputs (external)
Supply voltage		---	V	Separate inputs and outputs 19 to 30 conforming to DIN, IEC 1131 (Un = 24)		≤ 250 ~	Inputs and outputs 19 to 30 conforming to DIN, IEC 1131 (Un = 24)	Inputs: via AS-Interface line Outputs: external 19 to 30 (conforming to DIN)
Maximum permissible supply current	Inputs		A	1	2	—	0.9	< 0.25 (via AS-Interface line)
	Outputs		A	1	—	—	1.8	4 (external)
Maximum current from accessory plug		---	A	1 (less current drawn by inputs)	2 (less current drawn by inputs)	—	—	—
Voltage drop at supply fuse		---	V	—	—	—	0.3	0.2
Supply overload and short-circuit protection	Inputs	---	A	1 upstream per APE 1R1628 or PLC supply (2)	2 upstream per PLC supply (2) or per accessory plug (2)	—	1 per "quick- blow" fuse (included)	0.2 per current limiter (via AS-Interface line)
	Outputs	---	A	1 upstream per APE 1R1628 or PLC supply (2)	—	—	2 per "quick- blow" fuse (included)	4 per HPC" quick-blow" fuse (included) (external)

#### Input and output circuit characteristics (active side)

Maximum permissible current		—	A	0.5 per channel	0.5 per channel	8 per way	0.5 per channel (1 A max. per group of 8 channels) (3)	Inputs: type II 1131-2 Outputs: 0.5 per channel, auto- protected
Maximum length of supply connection cables, for 1 volt voltage drop (4)	AWG 22 (5)	m	17.5 (1 A)	35 (1 A) - 18 (2 A)	—	—	—	—
	AWG 26 (6)	m	7.5 (1 A)	15 (1 A) - 10 (1.8 A)	—	—	—	—
	AWG 28 (7)	m	5 (1 A)	10 (1 A)	—	—	—	—

(1) Compatible with 5.08 mm pitch.

(2) "Quick-blow" fuse (5 x 20 or 10 x 38) not included.

(3) Output channels auto-protected against short-circuits and overloads ≥ 0.75 A.

(4) For n volts tolerance, multiply length by n.

(5) AWG 22, c.s.a. 0.324 mm<sup>2</sup>, connection cables TSXCDP...3 and ABF A....

(6) AWG 26, c.s.a. 0.13 mm<sup>2</sup>, connection cables ABF ...

(7) AWG 28, c.s.a. 0.008 mm<sup>2</sup>, connection cables TSXCDP...2 and ABF H....

#### Dialfix suspension arms APD 1F●●● and APD 1S●K●

Reference		APD 1F●K●		APD 1S●K●	APD 1FSF1
Component		Tube	Clamp	Stainless steel arm	Support foot
Material		Aluminium 6060, treated	CFA glass fibre reinforced polyamide	Stainless steel type 304	Sheet steel, folded and welded
Paint finish		100 % polyester powder	Tinted throughout	–	100 % polyester powder
Colour		Grey RAL 7016	Grey RAL 7016	Satin finish stainless steel	Grey RAL 7016
Tube/clamp fixing		By 2 screws, Ø 4.2 (included) + 4 HCM6 screws (included)	–	By 2 screws (included)	–
Clamp fixing on Dialpack or support		–	By 4 M6 screws (included)	By 4 screws (included)	–
Earth continuity and earth connection		By cable (included)	–	By construction	By construction
Permanent permissible load		8 kg at 1 m, 16 kg at 0.5 m	8 kg at 1 m, 16 kg at 0.5 m	12 kg at 1 m, 24 kg at 0.5 m	8 kg at 1 m, 16 kg at 0.5 m
Fleeting permissible overload		30 kg at 1 m, 60 kg at 0.5 m	30 kg at 1 m, 60 kg at 0.5 m	40 kg at 1 m, 80 kg at 0.5 m	30 kg at 1 m, 60 kg at 0.5 m
Degree of protection of mounted assembly conforming to standards	IEC 529	IP 55	IP 55	IP 65	IP 55
	DIN 40050	IP 55	IP 55	IP 65	IP 55
	NF C 20-010	IP 55	IP 55	IP 65	IP 55
Continuous sealing gasket		Polychloroprene	Polychloroprene	Nitrile elastomer	Polybutadiene nitrile acrylic
Protective treatment		"TC"	"TC"	–	"TC"
Product certifications		BV (pending)	BV (pending)	BV (pending)	BV (pending)

#### Dialmove suspension arms APD-1M●●●

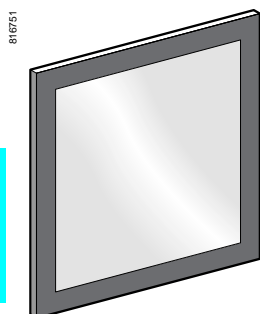
Component		Tubes APD 1M●●● except APD 1M1FDR and APD 1M1RDR	Tube APD 1M1FDR	Tube APD 1M1RDR	Cover for APD 1M●●●
Material		Aluminium	Aluminium	Aluminium-bronze	ABS
Paint finish		100 % polyester powder	100 % polyester powder	100 % polyester powder	Tinted throughout
Colour		Grey RAL 7016	Grey RAL 7016	Grey RAL 7016	Grey RAL 7016
Earth continuity		By construction	By construction	By construction	–
Earthing		By construction	By construction	By construction	–
Maximum permissible distance of load		1600 mm	600 mm	850 mm	–
Permanent permissible load		30 kg	15 kg	15 kg	–
Degree of protection of mounted assembly conforming to standards	IEC 529	IP 55 (assembly mounted)	IP 55 (assembly mounted)	IP 55 (assembly mounted)	IP 44 (cover on tubes)
	DIN 40050	IP 55 (assembly mounted)	IP 55 (assembly mounted)	IP 55 (assembly mounted)	IP 44 (cover on tubes)
	NF C 20-010	IP 55 (assembly mounted)	IP 55 (assembly mounted)	IP 55 (assembly mounted)	IP 44 (cover on tubes)
Fixing components sealing gasket		NBR 50-60 SHORE seal	NBR 50-60 SHORE seal	–	–
Protective treatment		"TC"	"TC"	"TC"	"TC"
Maximum number of cables (1)		4 x Ø 13 mm	4 x Ø 13 mm	4 x Ø 13 mm	–
Maximum room for connectors		60 x 25 mm	60 x 25 mm	60 x 25 mm	–
Product certifications		BV (pending)	BV (pending)	BV (pending)	BV (pending)

(1) Total number in the two spaces on either side of the arm.

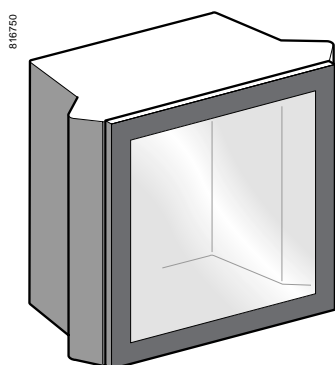
# Installation system

Tego Dial for Human-Machine interfaces  
Dialboard front panels and Dialpack control consoles  
Plates for Ø 22 control and signalling units

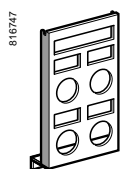
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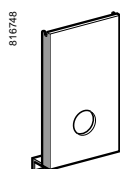
APD 1B●●



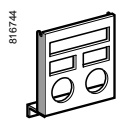
APD 1P●●



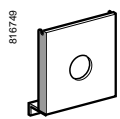
APD 1D2431●



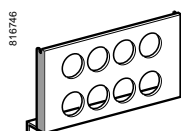
APD 1D21310



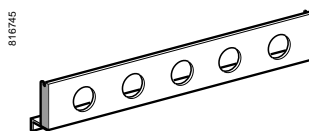
APD 1D2221●



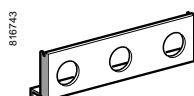
APD 1D21210



APD 1D28220



APD 1D25140



APD 1D23120

## Dialboard front panels

Number of modules		Reference	Weight kg
H	W		
3	4	APD 1B34	0.600
	6	APD 1B36	0.800
6	4	APD 1B64	1.200
9	2	APD 1B92	1.150
9	4	APD 1B94	1.500
	6	APD 1B96	1.850

## Dialpack control consoles (front panel included)

Number of modules		Material	Key supplied	Reference	Weight kg
H	W				
3	4	Sheet steel	N° 455	APD 1P34	3.300
		Stainless steel type 304	Double bar	APD 1P34S	5.900
6	4	Sheet steel	N° 455	APD 1P64	4.750
		Stainless steel type 304	Double bar	APD 1P64S	7.300
9	4	Sheet steel	N° 455	APD 1P94	6.000
		Stainless steel type 304	Double bar	APD 1P94S	9.200
6		Sheet steel	N° 455	APD 1P96	8.500
		Stainless steel type 304	Double bar	APD 1P96S	13.000

## Plates for Ø 22 control and signalling units

No. of modules	Finish (1)		No. of units	Pitch between units		No. of legend holders (2)	Reference	Weight kg
	H	W		Horiz. mm	Vertical mm			
3	1	Drilled	4	37.5	55.5	3	APD 1D24310	0.120
		Knock-outs	4	37.5	55.5	3	APD 1D24311	0.130
		Drilled	1	—	—	0	APD 1D21310	0.130
2	1	Drilled	2	37.5	—	2	APD 1D22210	0.085
		Knock-outs	2	37.5	—	2	APD 1D22211	0.095
		Drilled	1	—	—	0	APD 1D21210	0.095
2	2	Drilled (3)	8	30	40	0	APD 1D28220	0.160
1	4	Drilled (3) (4)	5	56.25	—	0	APD 1D25140	0.230
1	2	Drilled (3) (4)	3	57	—	0	APD 1D23120	0.120

(1) The plates are supplied either pre-drilled or with knock-outs, depending on the reference. For the latter version, the required knock-outs must be removed in order to mount Ø 22 control and signalling units.

(2) Legend holders included with plates.

(3) Side covers included with plates.

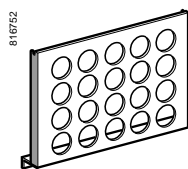
(4) The selector switches must be mounted horizontally.

# Installation system

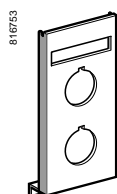
Tego Dial for Human-Machine interfaces

Plates for Ø 16 and Ø 30 control and signalling units

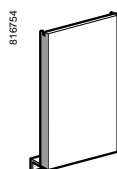
Solid plates and plates for other units



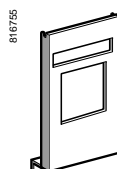
APD 1D1X220



APD 1D32310



APD 1V21



APD 1A21D44

## Plates for Ø 16 and Ø 30 control and signalling units

Units Ø	No. of modules		Finish	Pitch between units	Pitch between units		No. of legend holders (2)	Reference	Weight kg
	No.	H			Horiz. mm	Vertical mm			
16	5	1	2	Drilled (1)	24	—	—	APD 1D15120	0.120
	12	2	1	Drilled (1)	24	19	—	APD 1D1X210	0.085
	20	2	2	Drilled (1)	24	19	—	APD 1D1X220	0.160
30	2	3	1	Drilled (1)	—	60	1	APD 1D32310	0.120

## Solid plates

Number of modules		Reference	Weight kg
H	W		
1	1	APD 1V11	0.064
	2	APD 1V12	0.130
	4	APD 1V14	0.250
2	1	APD 1V21	0.100
	2	APD 1V22	0.195
	4	APD 1V24 (3)	0.565
3	1	APD 1V31	0.135
	2	APD 1V32	0.255
	4	APD 1V34 (3)	0.680
4	1	APD 1V41	0.200
	4	APD 1V44 (3)	0.830
	6	APD 1V46 (3)	1.320
5	1	APD 1V51	0.235
	4	APD 1V54 (3)	0.950
	6	APD 1V56 (3)	1.500
6	1	APD 1V61	0.270
	4	APD 1V64 (3)	1.180
	6	APD 1V66 (3)	1.670
7	4	APD 1V74 (3)	1.310
	6	APD 1V76 (3)	1.850

## Plates for DIN format display units

Type of DIN products		No. of modules		No. of products	No. of legend holders (2)	Reference	Weight kg
Height mm	width mm	H	W				
24	48	1	2	2 (1)	—	APD 1A12D24	0.115
		2	1	1	1	APD 1A21D24	0.085
		2	1	1	1	APD 1A21D44	0.065
72	72	2	1	1	—	APD 1A21D77	0.080
48	96	2	2	1	—	APD 1A22D49	0.160
24	48	3	1	2 (1)	2	APD 1A31D24	0.120
48	48	3	1	2 (1)	1	APD 1A31D44	0.100
96	48	3	1	1	0	APD 1A31D94	0.100

(1) Side covers included with plates.

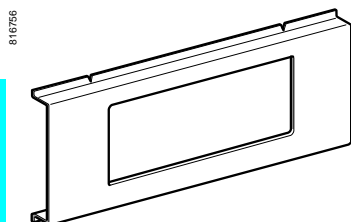
(2) Legend holders included with plates.

(3) This plate must be mounted on the first row at the top of Dialboard unit APD 1B●● or of the door of Dialpack unit APD 1P●●.

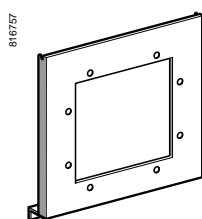
# Installation system

Tego Dial for Human-Machine interfaces  
Plates for other units, pre-assembled kits

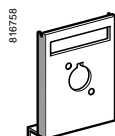
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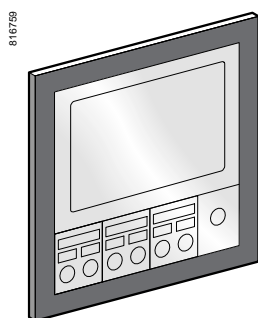
APD 1A34H00



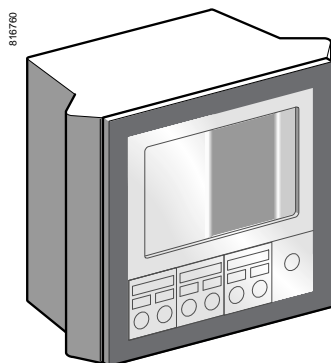
APD 1A32C12



APD 1A21XDA



APD 1ZB64PA



APD 1ZP64PA

## Plates for Magelis operator terminals and display units (1)

Product type	No. of modules		No. of products	Reference	Weight kg
	H	W			
XBT H	3	4	1	APD 1A34H00	0.550
XBT HM	3	4	1	APD 1A34HM0	0.545
XBT P, XBT PM	4	4	1	APD 1A44P00	0.580
XBT F032	4	4	1	APD 1A44F32	0.630
XBT E	5	4	1	APD 1A54E00	0.560
XBT F033/034/FC044/ FC064/FC084, TXBT F034 (3)	5	4	1	APD 1A54F33 (4)	0.560
	5	6	1	APD 1A56F33	1.000
XBT F01	6	4	1	APD 1A64F1	0.778
XBT F02, TXBT F02 (3)	7	4	1	APD 1A74F2 (4)	0.650
	7	6	1	APD 1A76F2	1.025

## Plates for various operator terminals and display units (1)

Product type	No. of modules		No. of products	Reference	Weight kg
	H	W			
T CCX17●OL●	5	4	1	APD 1A5417L	0.730
Siemens OP3, PILZ PX 30	3	4	1	APD 1A34S03	0.580
Siemens OP5, PILZ PXT 305	4	4	1	APD 1A44S05	0.650
Siemens OP07	4	4	1	APD 1A44S07	0.650
Siemens OP17	5	4	1	APD 1A54S17	0.600
Siemens OP25 and OP27	5	4	1	APD 1A54S25	0.600
Lauer PCS090	4	4	1	APD 1A44L90	0.650
Lauer PCS095	5	4	1	APD 1A54L95	0.600
Omron NT20S	3	4	1	APD 1A34O20	0.560

## Plates for keypads

Product type	No. of modules		No. of products	Reference	Weight kg
	H	W			
XBL C1012/C5012R581	3	2	1	APD 1A32C12	0.215
XBL C1016	3	2	1	APD 1A32C16	0.205
XBL C1020	3	2	1	APD 1A32C20	0.195

## Plates for various other products

Product type	No. of modules		No. of products	No. of legend holders (2)	Reference	Weight kg
	H	W				
Joystick controller XDA ●11 Mini-vario VN12, VN20 Vario V0 to V2, K cam switch	2	1	1	1	APD 1A21XDA	0.090
Joystick controller XDA ●11 Mini-vario VN12, VN20 Vario V0 to V2 K cam switch	3	1	1	1	APD 1A31XDA	0.130

## Pre-assembled kits for Magelis XBT P (size 6H x 4W)

Type	Composition				Reference	Weight kg
	Support	Plate	Buttons	Cross-piece		
Dialboard kit	Dialboard	APD	1 x APD 1D21210	1	APD 1ZB64PA	2.180
	APD 1B64	1A44P00	3 x APD 1D22211			
Dialpack kit	Dialboard	APD	1 x APD 1D21210	1	APD 1ZP64PA	5.730
	APD 1P64	1A44P00	3 x APD 1D22211			

(1) This plate must be mounted on the first row at the top of Dialboard unit APD 1B●● or of the door of Dialpack unit APD 1P●●

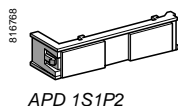
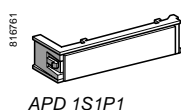
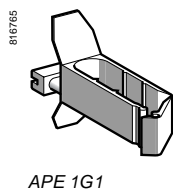
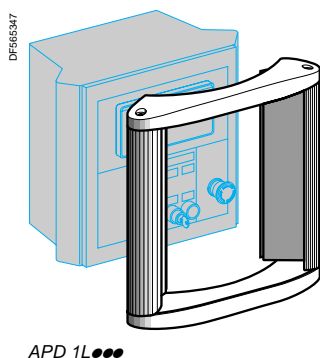
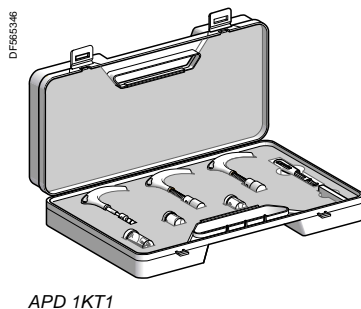
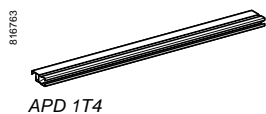
(2) Legend holders included with plates.

(3) A TXBT cannot be fitted in Dialpack consoles APD 1P●4.

(4) These plates are not compatible with Dialboard front panels and Dialpack APD 1●●6 terminals.

# Installation system

Tego Dial for Human-Machine interfaces  
Accessories



## Cross-pieces

Description	Use	No. of modules W	Reference	Weight kg
Plate support cross-pieces	Dialboard	2	APD 1T2	0.045
	Dialboard or Dialpack	4	APD 1T4	0.085
		6	APD 1T6	0.125

## Tego Dial Design

Description	Language	Version	Medium	Reference	Weight kg
Definition software	English and French	02	CD-Rom	APD 1C00M	0.100

## Tools

Description	Use	Reference	Weight kg
Tool kit	For making Ø 22, 16, 5 and other size cut-outs	APD 1KT1	1.130
1 replacement blade	Ø 22 cut-out tool	APD 1KT2	0.009
	Ø 16 cut-out tool	APD 1KT16	0.023
1 pack of 10 replacement blades	Stanley knife	APD 1KTCU	0.050

## Customising components for Dialpack

Description	For Dialpack Reference	Finish	Reference	Weight kg
Customising components/gripping handles	APD 1P34	Yellow	APD 1L34Y	0.820
		Unpainted	APD 1L340	0.820
	APD 1P64	Yellow	APD 1L64Y	1.120
		Unpainted	APD 1L640	1.120
	APD 1P94	Yellow	APD 1L94Y	1.420
		Unpainted	APD 1L940	1.420

## Accessories

Description	Use	Material	Sold in lots of	Unit reference	Weight kg
Wire guide	Dialboard and Dialpack	Black polyamide	10	APE 1G1	0.005
Ducting support (1)	Dialboard and Dialpack	Black polyamide	10	APE 1G2	0.006
Self-adhesive Ø 60 yellow sticker, Emergency Stop	Ø 22 plates APD 1D21●1●	—	10	APD 1YARJ	0.002

## Replacement legend holder

Description	Use	Sold in lots of	Unit reference	Weight kg
Legend holder	1 function	10	APD 1S1P1	0.045
	2 functions	10	APD 1S1P2	0.045

## Separate locks for Dialpack APD 1P●●

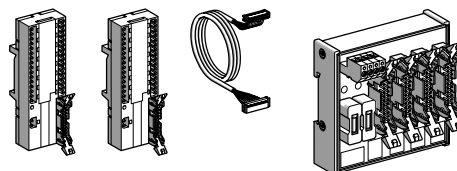
Description	Use	Sold in lots of	Unit reference	Weight kg
Lock with double bar key		1	XAP P9110	0.100
Lock with triangular key	CNOMO n° 8	1	XAP P9111	0.100
	CNOMO n° 6.5	1	APD 1YST6	0.100

## Fixing lugs for Dialpack APD 1P●●

Description	Use	Material	Sold in lots of	Unit reference	Weight kg
Rotatable fixing lugs	—	Steel	4	AE3 FX122	0.080

(1) Recommended ducting: AK2 GD2525 and AK2 GD2550 with cover AK2 CD25.

PLCs					Components required for connection to the PLC			
Brand	Type	Modularity of connection to the PLC	PLC terminal blocks	Compatible PLC cards	Tego Dialbase		Telefast cables	Splitter block
					APE 1B24M 8 I/8 O	APE 1B24E 16 I	ABF H20H●●0 or TSXCDP●●3	APE 1R1628

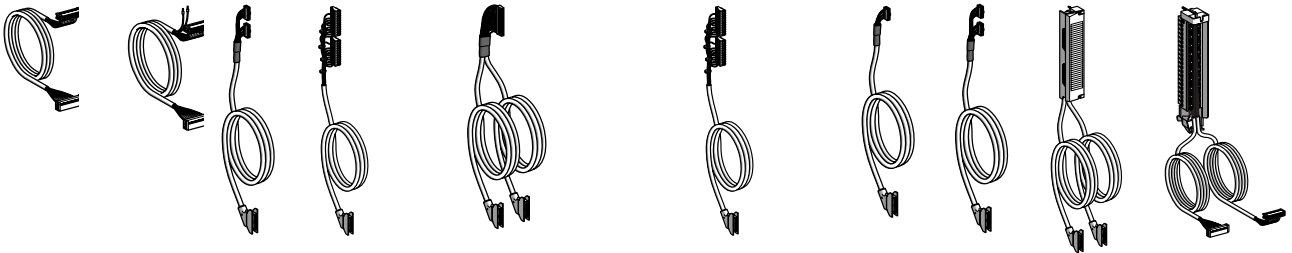


Telemecanique	TSX Micro	8 I + 8 O	–	TSXDMZ16DTK	1	–	–	–
		16 I + 16 O	–	TSXDMZ64DTK	1 (1)	–	1	1
		16 I	–	TSXDMZ64DTK/DMZ28DTK	–	1	–	–
Telemecanique	TSX premium	16 I + 16 O	–	TSXDEY16FK/32D2K/64D2K, TSXDSY32T2K/64T2K	1 (1)	–	1	1
		16 I	–	TSXDEY16FK/32D2K/64D2K	–	–	1	–
Telemecanique	TSX 47-107	16 I + 16 O	–	TSXBLK71 + TSXDET32●●, TSXBLK91 + TSXDST3292	1 (1)	–	1	1
		16 I	–	TSXBLK71 + TSXDET32●●	–	–	1	–
Modicon	Compact 984/A120	16 I + 16 O	–	DA0216, DAP216/217, DE0216, DEP217/220	1 (1)	–	1	1
		16 I	–	DE0216, DEP217, DEP220	1	–	–	–
Modicon	Quantum	32 I + 32 O	–	DDI353/853, DD0353	1 (1)	–	1	1
		32 I	–	DDI353/853	–	1	–	–
April	Series 1000	32 I + 32 O	–	IDB3224, QDB/QPA3205	1 (1)	–	1	1
		32 I	–	IDB3224	–	–	1	–
Siemens	95U and 100U	8 I + 8 O	Included with cable	4218MA12, 4318MA11, 4418MA11, 4518MA11	1 (1)	–	–	–
		16 I + 16 O	6EP5●●●●1AA00	4828MA13	1 (1)	–	1	1
		8 I + 8 I	Included with cable	4218MA12, 4318MA11	–	1	–	–
		16 I	6EP5●●●●1AA00	4228MA11, 4828MA13	–	1	–	–
Siemens	115U	8 I + 8 O	6EP5●●●●1AA00	4207LA11, 4307LA12, 4417LA11, 4517LA11/21	1	–	–	–
	135/155U	8 I + 8 O	6EP5●●●●1AA00	4204UA14, 4304UA14, 4414UA14, 4514UA14	–	–	–	–
	115U	8 I	6EP5●●●●1AA00	4207LA11, 4307LA12, 4517LA21	–	1	–	–
	135/155U	8 I	6EP5●●●●1AA00	4204UA14	–	–	–	–
Siemens	S7-300	8 I + 8 O	6ES79213AB00-0AA0	3211B●0●-0AA0, 3221B●0●-0AA0	1	–	–	–
	S7-400	8 I + 8 O	6ES79214AB00	4211B●0●-0AA0, 4221B●0●-0AA0	1	–	–	–
	S7-300	8 I	6ES79213AB00	3211B●0●-0AA0	1	–	–	–
	S7-400	8 I	6ES79214AB00	4211B●0●-0AA0	1	–	–	–
Allen Bradley	SLC500	16 I + 16 O	–	1746OB16, 1746IB16	1 (1)	–	1	1
		32 I + 32 O	–	1746IB32, 1746OB32/V32	1 (1)	–	1	1
		16 I	–	1746IB16	–	1	–	–
		32 I	–	1746IB32	–	–	1	–

(1) For connection of a second Dialbase APE 1B24M, use 2 x ABF H20H●●0 or TSXDP●●3. connecting cables.

Telefast cables for connection to the PLC

ABF H20H●●0 or TSX CDP●●●	ABF H20H●●1	ABF H28H●●0	ABF S16H●●0	ABF H40H●●0	ABF H40H●●1	ABF R16H●●0	ABF R16H●●1	ABF M16H●●0	ABF H16H●●0	ABF H32H●●0	ABF M32H●●0	ABF A32H●●0
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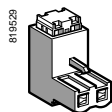


2

1	-	-	-	-	-	-	-	-	-	-	-	-
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2	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-
-	2	-	-	-	-	-	-	-	-	-	-	-
-	1	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	2	-	-	-	-
-	-	-	-	-	-	-	-	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	2	-
-	-	-	-	-	-	-	-	-	-	-	1	-
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-	-	-	-	1	1	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-	-	-
-	-	-	-	-	1	-	-	-	-	-	-	-

# Installation system

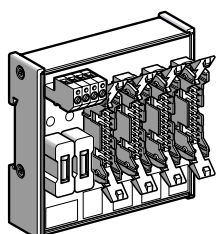
## Tego Dial for Human-Machine interfaces Connectors



APE 1PAD21

### Connectors and cables for control and signalling units

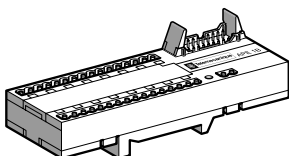
Description	For units	Wire c.s.a. mm <sup>2</sup>	Cable length mm	Sold in lots of	Unit reference	Weight kg
<b>Self-stripping connector</b> 2-way, 5 mm pitch	Ø 22	0.75	–	1	APE 1PAD21	0.003
<b>Spring terminal connections</b> 2-way, 5 mm pitch	Ø 22	0.2 to 2.5	–	10	APE 1PRE21	0.003
<b>Cable with 1 connector</b> 2-way, 5 mm pitch	Ø 22	0.75	500 (1)	1	APE 1C2150	0.120
<b>Cable with 2 self-stripping connectors</b> 2-way, 5 mm pitch	Ø 22	0.75	500 (1)	1	APE 1C2250	0.130
<b>Cable with 2 self-stripping connectors</b> 2-way, 5 mm pitch and 2-way Faston connector	Ø 16	0.75	500 (1)	1	APE 1C1250	0.130



APE 1R1628

### Active splitter

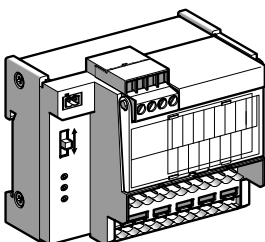
Description	Voltage Us	Output type	Reference	Weight kg
<b>Active splitter HE10</b> 16 I/16 O in 2 x 8 I/8 O	24 V Ue 30 V max	Tungsten filament 2.6 W pilot light	APE 1R1628	0.130



APE 1B24M

### Dialbase for PLC and AS-Interface line connections

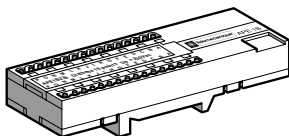
Description	Connector type to Components	PLC or AS-Interface line	Voltage Ue	Number of inputs	Number of outputs	Reference	Weight kg
<b>Dialbase 24 V-8I/8O</b>	2-way, 5 mm pitch per channel	PLC HE10, 20-way	24	8 channels	8 channels	APE 1B24M	0.080
<b>Dialbase 24 V-16I</b>	2-way, 5 mm pitch per channel	PLC HE10, 20-way	24	16 channels	–	APE 1B24E	0.080
<b>Dialbase AS-Interface 4I/4O</b>	2-way, 5 mm pitch per channel	AS-Interface line 2 x 2-way, 5 mm pitch	24	4 channels, 4 solid state supplied via channels	AS-interface external line supply	APE 1FASI1	0.240



APE 1FASI1

### Dialbase for connection to other products (operating part)

Description	Connector type to components and other products	Voltage Ue	Number of ways	Reference	Weight kg
<b>Dialbase 230 V</b>	2 to 16-way, 5 mm pitch, modular	~ 5...130 ~ 5...240	16-way, volt-free	APE 1B230	0.075



APE 1B230

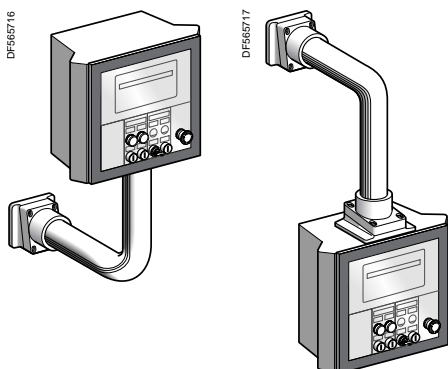
(1) The length of the cable can be reduced if necessary.

Description	Material	Tube		Rotation, Dialpack side	Number of clamps (included)	Inclination per clamp	Reference	Weight	
		Max. int. Ø	L (1)						
		mm	mm						kg
Dialfix fixed suspension arms for normal industrial environments									
Fixed 90° elbowed arm kit	Painted alu./ polyamide	60	500	(2)	2	0°, +15°, -15°	APD 1F5KC	3.750	
500 mm straight arm kit	Painted alu./ polyamide	60	500	(2)	2	0°, +15°, -15°	APD 1F5KD	3.350	
1000 mm straight arm kit	Painted alu./ polyamide	60	1000	(2)	2	0°, +15°, -15°	APD 1F10KD	5.150	
Floor fixing support foot (3)	Painted sheet steel	60	—	—	0	—	APD 1FSF1	1.550	
Dialfix rotating suspension arms for corrosive environments									
90° elbowed arm kit	Stainless steel 304	40	500	350° (2)	2	APD 1S1RIR	APD 1S5KC	6.550	
1000 mm straight arm kit	Stainless steel 304	40	1000	350° (2)	2	APD 1S1RIR	APD 1S10KD	7.200	
Tilted joint	Stainless steel 304	40	—	—	—	—	APD 1S1RIR	0.700	

## Mounting examples

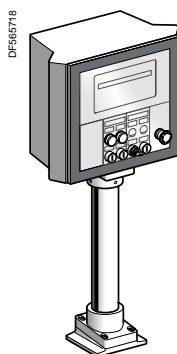
### APD 1F5KC

Dialfix, fixed 90° elbowed arm kit



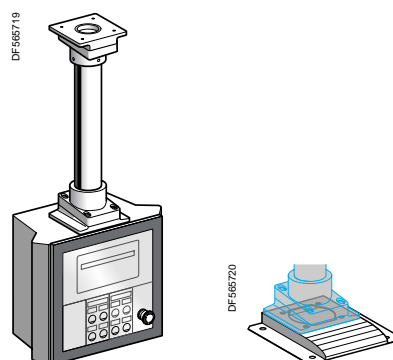
### APD 1F5KD

Dialfix, fixed straight arm kit



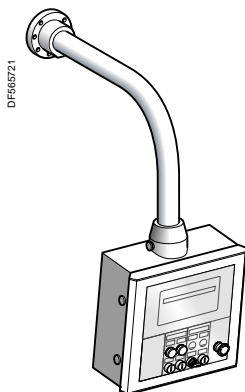
### APD 1FSF1

Floor fixing support foot



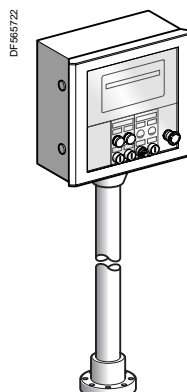
### APD 1S5KC with APD 1S1RIR

Dialfix, rotating 90° elbowed arm kit



### APD 1S10KD

Dialfix, rotating straight arm kit



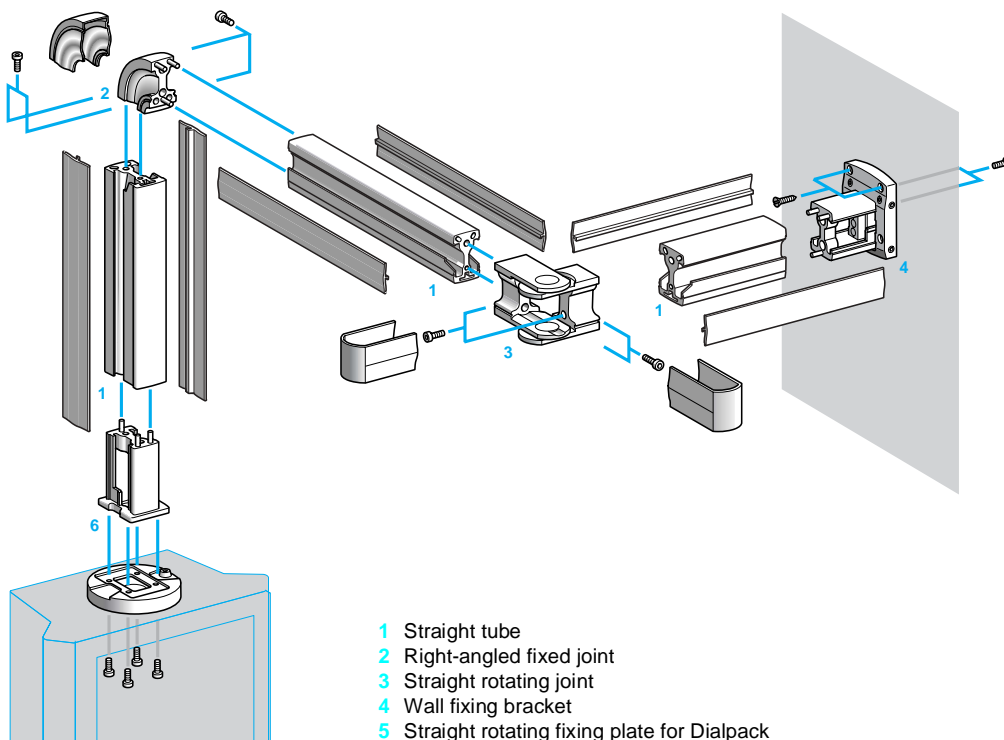
(1) Cut to required length.

(2) 360° mounting option, then fixed in operation. Reinforcement plate included.

(3) Compatible with Dialfix **APD 1F●●●●** and Dialmove **APD 1M1FDF**.

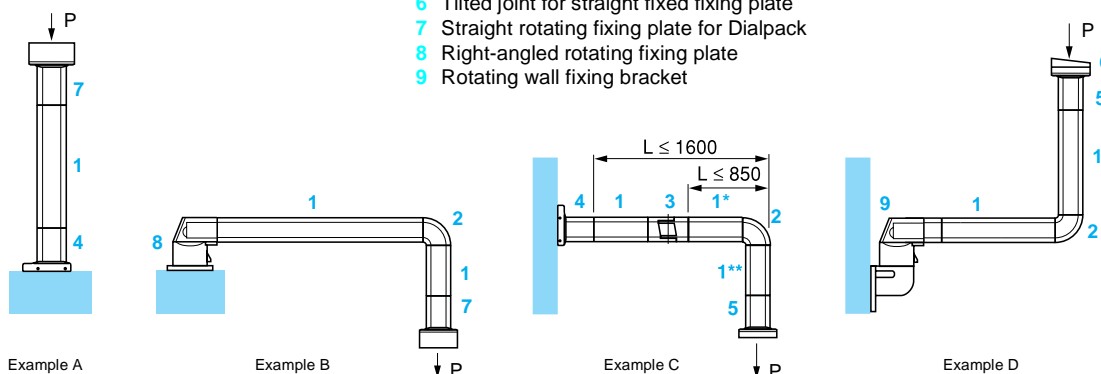
## Presentation

By using combinable modular elements, Dialmove moving suspension arms allow total configuration freedom. The exploded view shown below details the modular elements, their connection, fixing method and cable covers.



## Mounting examples

- 1 Straight tube  
2 Right-angled fixed joint (can be fitted either way up)  
3 Straight rotating joint  
4 Wall fixing bracket  
5 Straight fixed fixing plate for Dialpack  
6 Tilted joint for straight fixed fixing plate  
7 Straight rotating fixing plate for Dialpack  
8 Right-angled rotating fixing plate  
9 Rotating wall fixing bracket



### Example of load limit calculation

- Examples A and B: the load is limited by component 7

Maximum weight = 15 kg.

- Example C: the load is limited by component 3

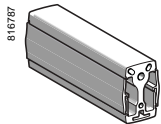
- if  $1^* = 750$  mm and  $1^{**} = 250$  mm, maximum weight = 15 kg - weight of  $(1^* + 1^{**} + 2 + 5) = 4.5$  kg

- if  $1^* = 100$  mm and  $1^{**} = 250$  mm, maximum weight = 15 kg - weight of  $(1^* + 1^{**} + 2 + 5) = 10$  kg

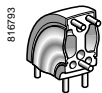
- Example D: the load is limited by component 9, if  $1 = 1000$  mm, maximum weight = 30 kg - weight of  $(1 + 1 + 2 + 5 + 6) = 12$  kg.

# Installation system

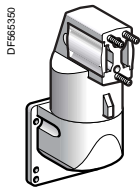
Tego Dial for Human-Machine interfaces  
Dialmove moving suspension arms



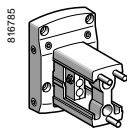
APD 1M025L



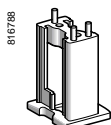
APD 1M1EF0



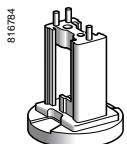
APD 1M1FMR



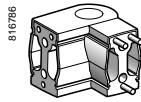
APD 1M1FM0



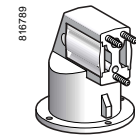
APD 1M1FDF



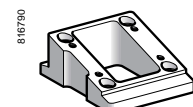
APD 1M1FDR



APD 1M1RDR



APD 1M1FER



APD 1M1RIF



APD 1M1RIR

## Dialmove moving suspension arms

Description	Usable length	Effect on angle	Angular movement from...to	Sold in lots of	Unit reference	Weight
	mm					kg
Straight tubes	100	—	—	1	APD 1M010L	0.900
	250	—	—	1	APD 1M025L	2.240
	500	—	—	1	APD 1M050L	4.370
	750	—	—	1	APD 1M075L	6.320
	1000	—	—	5	APD 1M100L	8.430
	1250	—	—	5	APD 1M125L	10.600
	1500	—	—	5	APD 1M150L	12.800
Right-angled fixed joint	102	90°	—	1	APD 1M1EF0	0.730
Straight rotating joint (1)	150 (when straight)	—	+90°...-90°	1	APD 1M1RDR	3.480
Rotating wall fixing bracket (2)	149	—	+160°...-160°	1	APD 1M1FMR	7.900
Right-angled rotating fixing plate (2)	85	90°	+160°...-160°	1	APD 1M1FER	5.700
Wall fixing bracket (2)	133	—	—	1	APD 1M1FM0	1.700
Straight fixed fixing plate for Dialpack	130	—	—	1	APD 1M1FDF	1.070
Tilted joint for straight fixed fixing plate	25	15°	—	1	APD 1M1RIF	0.296
Straight rotating fixing plate for Dialpack (3)	155	—	+160°...-160°	1	APD 1M1FDR	1.930
Tilted joint for straight rotating fixing plate	20	15°	—	1	APD 1M1RIR	0.442
Reinforcement plate for Dialpack	—	—	—	1	APD 1MYP1	0.600

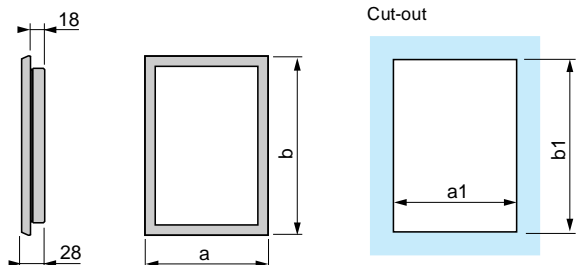
(1) Weight limit 15 kg at horizontal distance of 850 mm.

(2) Weight limit 30 kg at horizontal distance of 1600 mm.

(3) Weight limit 15 kg at horizontal distance of 600 mm.

### Dialboard front panels

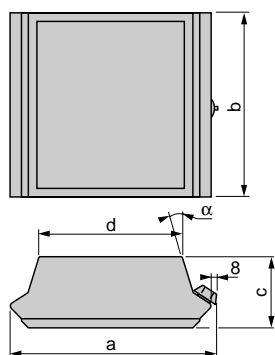
#### APD 1B●●



APD	a	b	a1 ± 1	b1 ± 1
1B34	359	201	334	175
1B36	509	201	484	175
1B64	359	351	334	325
1B92	209	501	184	475
1B94	359	501	334	475
1B96	509	501	484	475

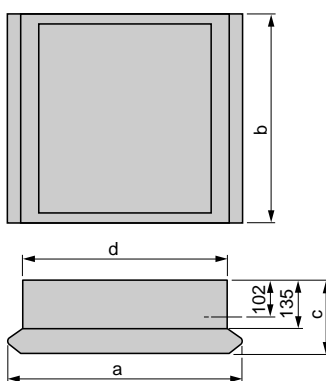
### Dialpack control consoles

#### APD 1P●●



APD	a	b	c	d	α	no. of locks
1P34	401	204	151	278	13°	1
1P64	401	354	151	278	13°	1
1P94	401	504	151	278	13°	1
1P96	501	504	200	428	8°	2

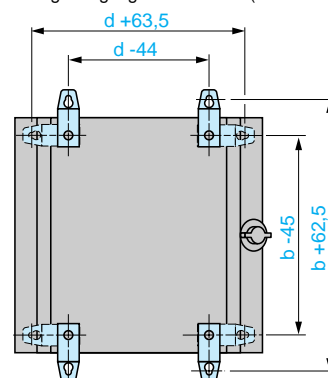
#### APD 1P●●S



APD	a	b	c	d	no. of locks
1P34S	440	250	177	400	1
1P64S	440	400	177	400	2
1P94S	440	550	177	400	2
1P96S	590	550	177	550	2

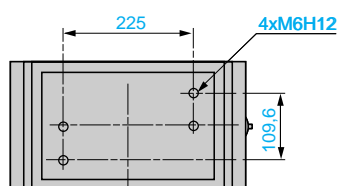
#### APD 1P●●

Fixing using lugs AE3 FX122 (rear view)

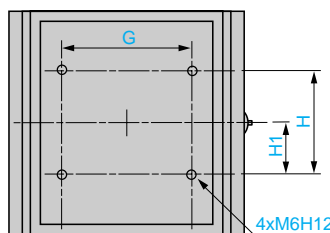


### Fixing accessories for mounting (Plates, tubes, etc...)

#### APD 1P34



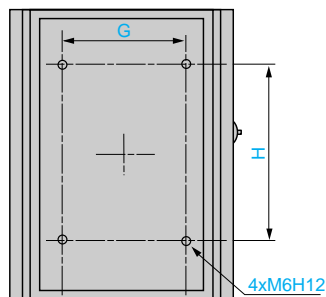
#### APD 1P64, APD 1P64S and APD 1P34S



APD	G	H	H1	Plates (1)
1P94	225	171.6	105.5	—
1P64S	325	225	62.5	AM3 PA43
1P34S	325	100	25	—

(1) Compatible Telequick mounting plates.

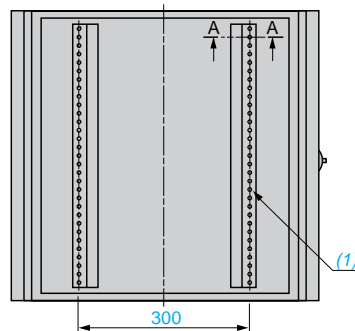
#### APD 1P94, APD 1P94S and APD 1P96S



APD	G	H	Plates (1)
1P94	225	321.6	—
1P94S	325	325	AM3 PA44
1P96S	325	325	AM3 PA44

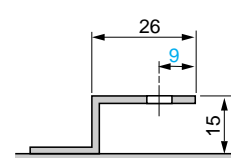
(1) Compatible Telequick mounting plates.

#### APD 1P96



(1) Ø 6.5 at intervals of 15 mm.

#### Detail A



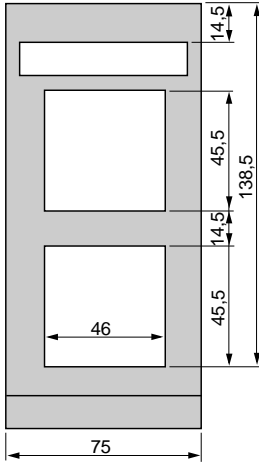
#### Plates (1)

AM1 PA030, PA130, PA230, PA330, PA430

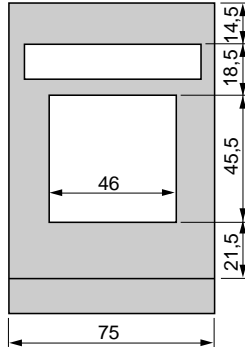
(1) Compatible Telequick mounting plates.

## Plates for DIN 48 x 48 display units

### APD 1A31D44

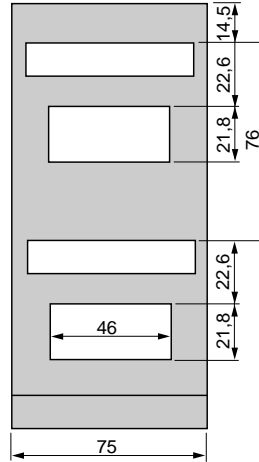


### APD 1A21D44

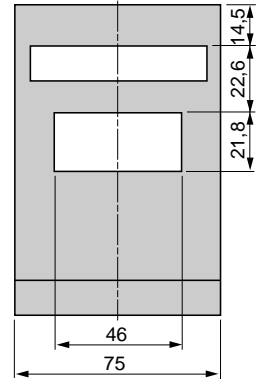


## Plates for DIN 24 x 48 display units

### APD 1A31D24

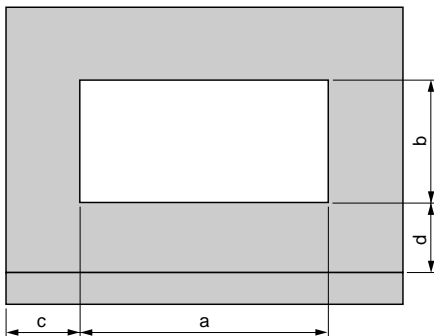


### APD 1A21D24



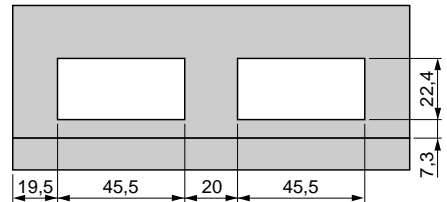
## Plates for DIN 48 x 96 display units

### APD 1A●●●●



APD	a	b	c	d
1A34S03	138	68	81.5	36.2
1A44F32	187	137	57	26.7
1A44L90	194	128	53.5	31.2
1A44P00	237	135	32	27.6
1A44S05	110	158	95.5	16.2
1A44S07	134	170	83.5	10.2
1A44S267	204	148	48.5	21.2
1A5417L	209	135	46	77.7
1A54E00	265.5	184	13.5	31
1A54F33	285	211	8	21.4
1A54L95	204	188	48.5	26.2
1A54S17	231.5	195.5	34.8	22.5
1A54S25	283	179	9	30.7
1A56F33	285	211	83	21
1A64F1	209	243	46	23.7
1A74F2	285	309	8	23.4
1A76F2	285	309	83	23

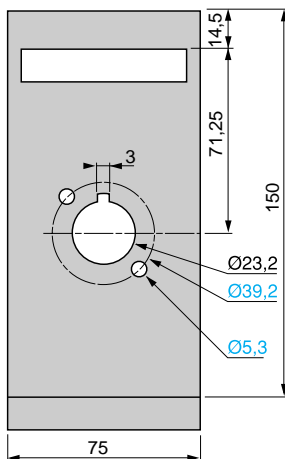
### APD 1A12D24



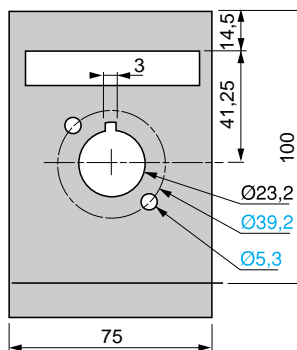
APD	a	b	c	d
1A21D77	68.5	68.5	3.15	10
1A22D49	93	46	28.5	27
1A31D96	92.8	45.5	29.6	27.5
1A34H00	186	92	54.5	24.2
1A34HM0	191	94	55	23.2
1A34O20	178	100	61.5	16.9

## Plates for XDA joystick controllers, Vario or K cam switch

### APD 1A31XDA

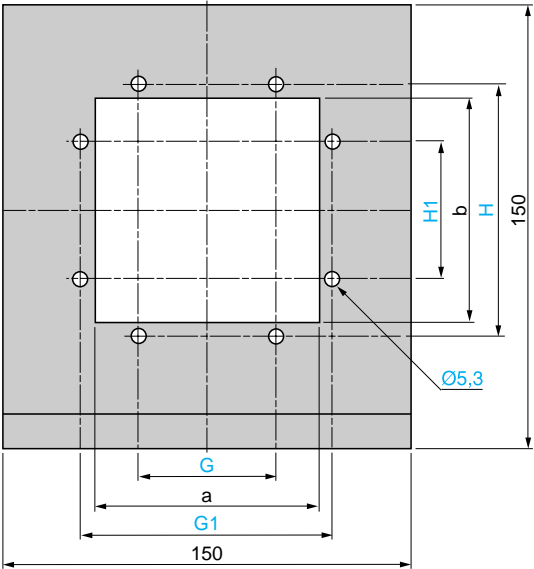


### APD 1A21XDA



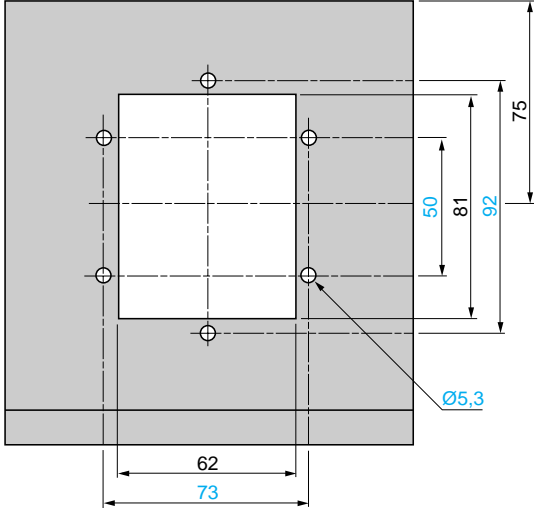
2

Plates for keypads XBL C1016 and XBL C1020  
APD 1A32C16, APD 1A32C20



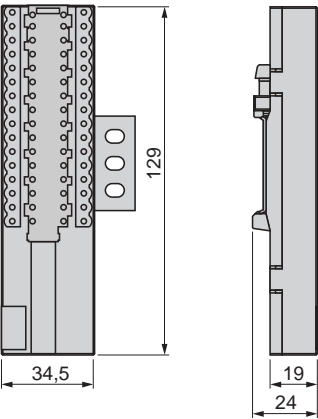
APD	a	b	G	G1	H	H1
1A32C16	81	81	50	92	92	50
1A32C20	97.5	78.5	57	114	95	38

Plates for keypads XBL C1012 and XBL C5012R581  
APD 1A32C12



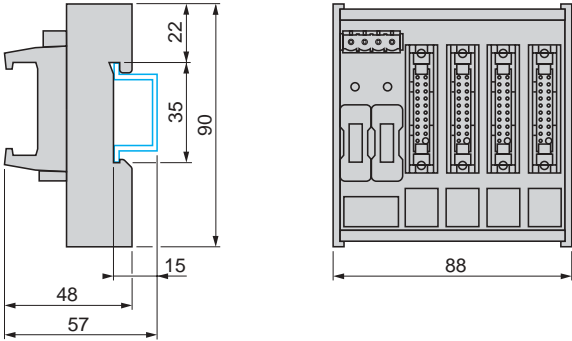
Dialbase

APE 1B24, APE 1B230



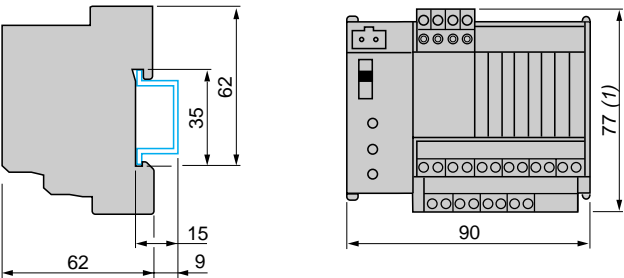
Active splitter

APE 1R1628



Dialbase

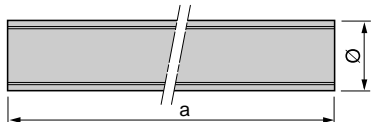
APE 1FASI1



(1) Connector fitted

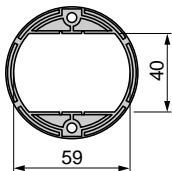
## Fixed suspension arms - Dialfix straight

APD 1F5KD, APD 1S10KD



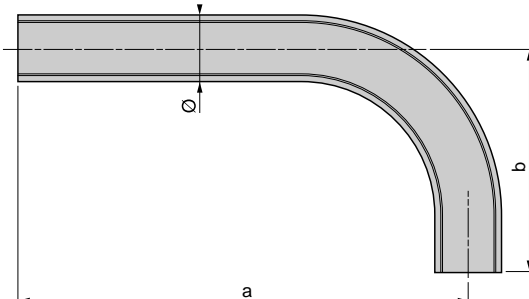
## Available cross-section for cable outlet

APD 1F5KD



## Fixed suspension arms - Dialfix elbowed

APD 1F5KC, APD 1S5KC



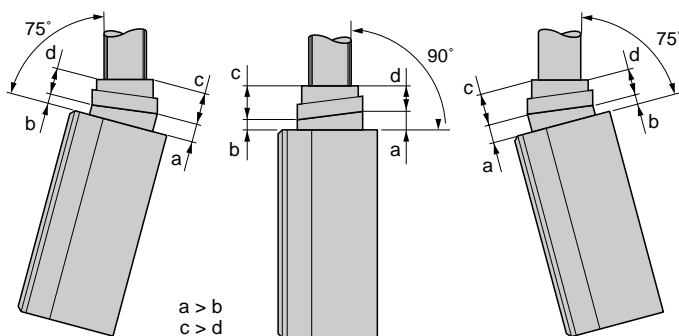
	a	Ø
APD 1F5KD	500 (1)	70
APD 1F10KD	1000 (1)	70
APD 1S10KD	1000 (1)	48

(1) Cut to required length.

	a	b	Ø
APD 1F5KC	465	250	70
APD 1S5KC	500	350	48

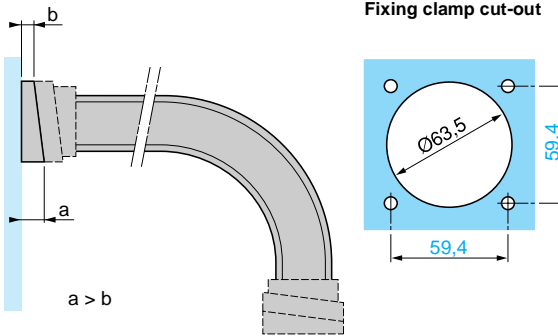
## Orientation of Dialpack in relation to positioning of clamp parts

APD 1F5KD



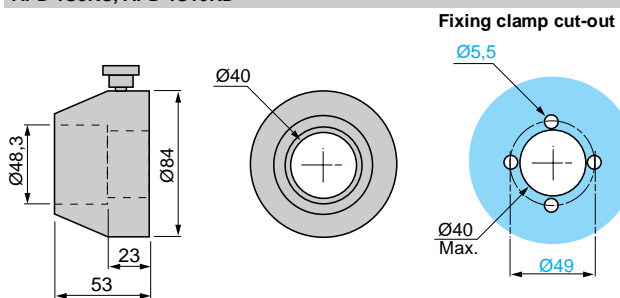
## Mounting arm and clamp

APD 1F5KC



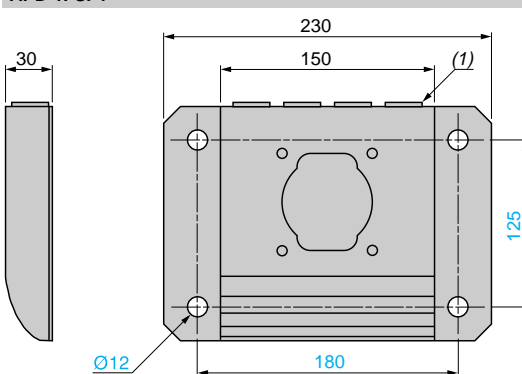
## Rotating fixing clamp for Dialpack

APD 1S5KC, APD 1S10KD



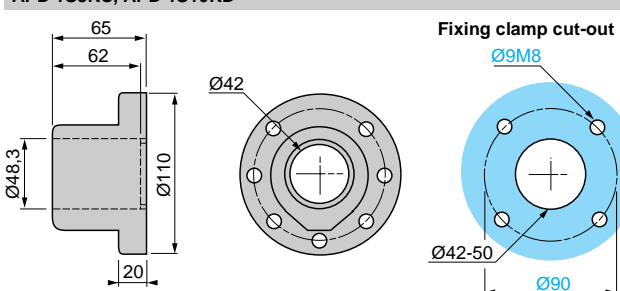
## Floor fixing support foot

APD 1FSF1



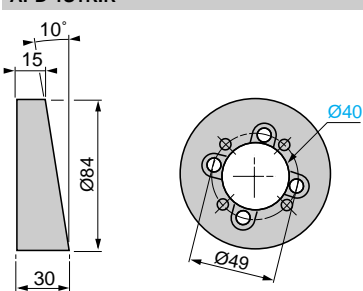
## Wall and floor fixing clamp

APD 1S5KC, APD 1S10KD



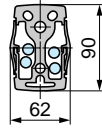
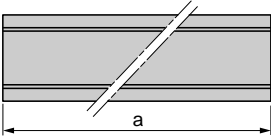
## Tilted joint

APD 1S1RIR



## Straight tubes

APD 1M●●●●

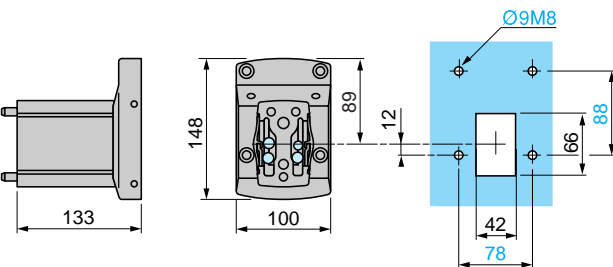


APD	a
1M010L	100
1M025L	250
1M050L	500
1M075L	750

APD	a
1M100L	1000
1M125L	1250
1M150L	1500

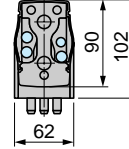
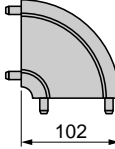
## Wall fixing bracket

APD 1M1FMO



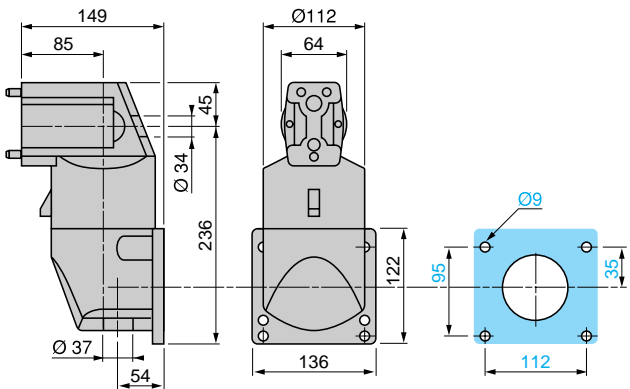
## Right-angled fixed joint

APD 1M1EFO



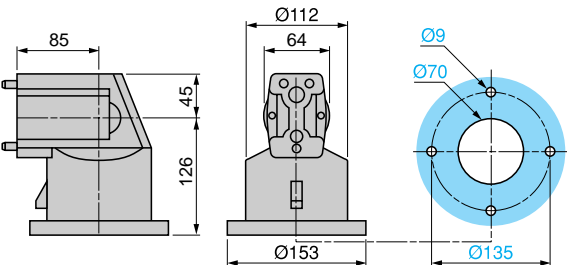
## Rotating wall fixing bracket

APD 1M1FMR



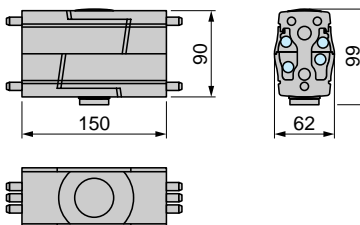
## Right-angled rotating fixing plate

APD 1M1FER



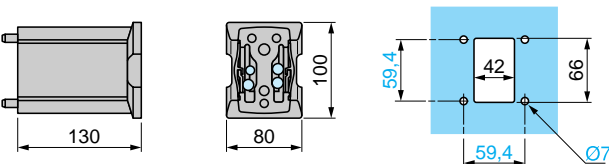
## Straight rotating joint

APD 1M1RDR



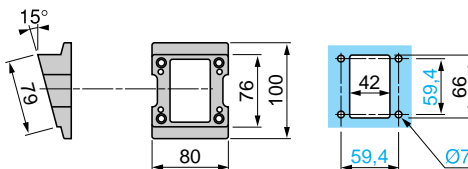
## Straight fixed fixing plate for Dialpack

APD 1M1FDF



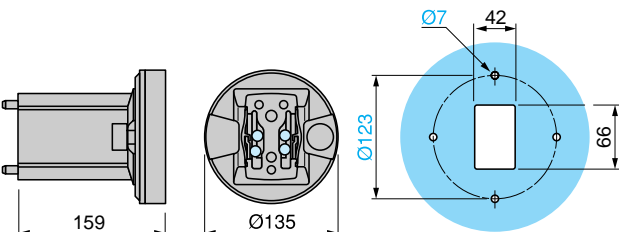
## Tilted joint for straight fixed fixing plate

APD 1M1RIF



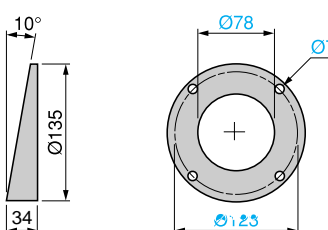
## Straight rotating fixing plate for Dialpack

APD 1M1FDR

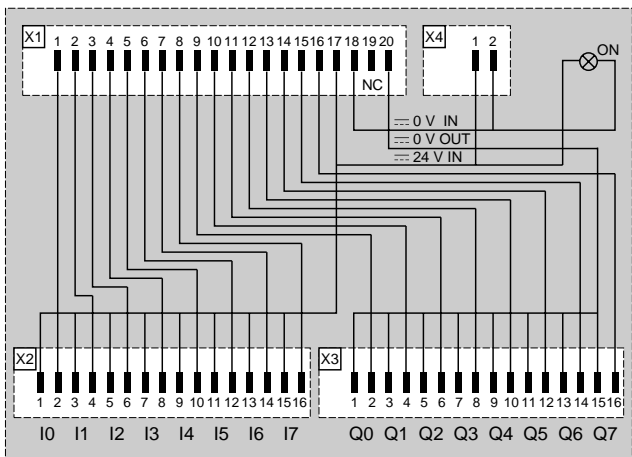


## Tilted joint for straight rotating fixing plate

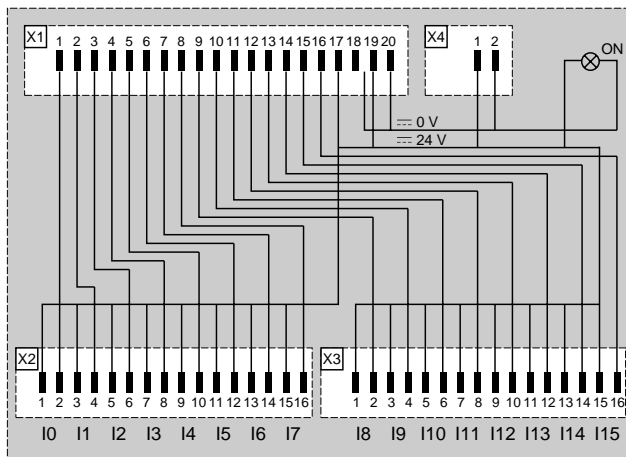
APD 1M1RIR



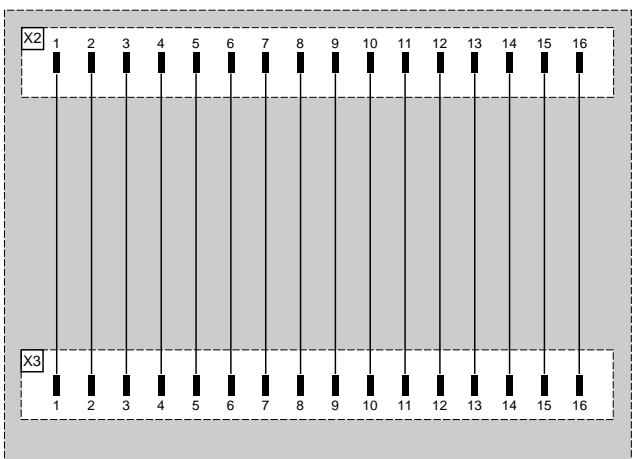
## Dialbase APE 1B24M



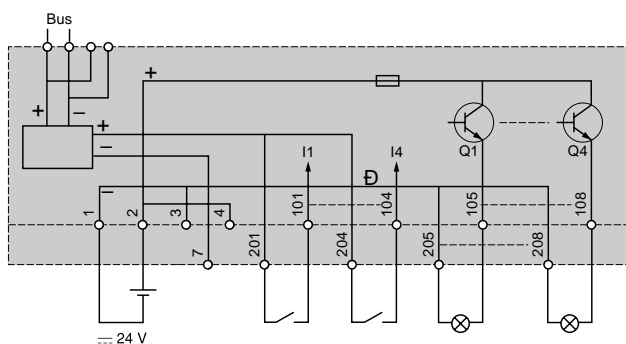
## Dialbase APE 1B24E



## Dialbase APE 1B230



## Dialbase APE 1FAS11



### Active splitter APE 1R1628

