

## Panel Mounted

Range:	Type	Popular Products	Popular Products	Page
Push Button	TP2	TP21LAAC1C1A4CN TP21LDAC1C1D4CN TP21MAAC1C1A4CN	TP21MDAC1C1D4CN TP22LFAC1C1F4CN TP22MFAC1C1F4CN	220
	TP5	TP51LAA2A4CN TP51LDA2D4CN TP51MAA2A4CN	TP51MDA2D4CN TP52LFD2F4CN TP52MFD2F4CN	227
	TP4	TP41LAJ2A4NXX TP41LEJ2E4NXX TP41MAJ2A4NXX	TP41MEJ2E4NXX TP42LHJ2H4NXX TP42MHJ2H4NXX	232
	TP8	TP82MDOA30		236
	TP9	TP92MFOA000 TP92MFOA002	TP92MFOA004 TP92MFOA005	239
	TP7	TP71MD1B04XX TP71MD1B02XX TP71MD1B05XX TP71MD1B00XX	TP72MF1B00XX TP72MG4B00C2 TP72MG2B00C4	243
	3300	3300-001 3300-003 3300-002 3300-004		251
Indicators	TI2	TI21VAAF4CN	TI22VFAF4CN	252
	TI5	TI51VALA4CN	TI52VFSF4CN	257
	TI9	TI92VFOA500		261
Emergency Stop	TE8	TE82KJB1XX	TE81RGP2A1	264
Keyswitch	TK2	TK21B2A001C1C1A	TK22B2E001C1C1E	268
Rotary	TR2	TR21A2AC1C1A TR22A2CC1C1E	TR21C2AC1C1A TR22C2CC1C1E	274

# TP2

## Panel Mounted

Push Button

### TP2

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- momentary or latching
  - sealed IP40, IP65 or IP67
  - wide range of bezels
  - with or without illumination
  - NO, NC, CO
  - gold plated single or double pole contact blocks

Rating 250 VAC, 5 A

Dimensions (mm) 18 × 24  
18 × 18  
 $\varnothing$  18  
 $\varnothing$  25

Actuator ■ lenses in different shapes and colours

Approvals UL, CSA, VDE



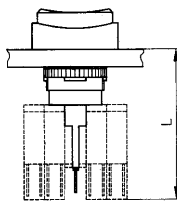
### Popular products

Ordering Reference	Panel cut-out	Function	Actuator style	Terminals	Electrical rating
TP21LAAC1C1A4CN	$\varnothing$ 16.2 mm	Latching; IP40	18 × 24 mm, red Illumination	2.8 × 0.5 mm faston	250 VAC, 5A
TP21LDAC1C1D4CN	$\varnothing$ 16.2 mm	Latching; IP40	$\varnothing$ 18 mm, red Illumination	2.8 × 0.5 mm faston	250 VAC, 5A
TP21MAAC1C1A4CN	$\varnothing$ 16.2 mm	Momentary; IP40	18 × 24 mm, red Illumination	2.8 × 0.5 mm faston	250 VAC, 5A
TP21MDAC1C1D4CN	$\varnothing$ 16.2 mm	Momentary; IP40	$\varnothing$ 18 mm, red Illumination	2.8 × 0.5 mm faston	250 VAC, 5A
TP22LFAC1C1E4CN	$\varnothing$ 22.5 mm	Latching; IP65	$\varnothing$ 25 mm, red Illumination	2.8 × 0.5 mm faston	250 VAC, 5A
TP22MFAC1C1E4CN	$\varnothing$ 22.5 mm	Momentary; IP65	$\varnothing$ 25 mm, red Illumination	2.8 × 0.5 mm faston	250 VAC, 5A

## Specifications

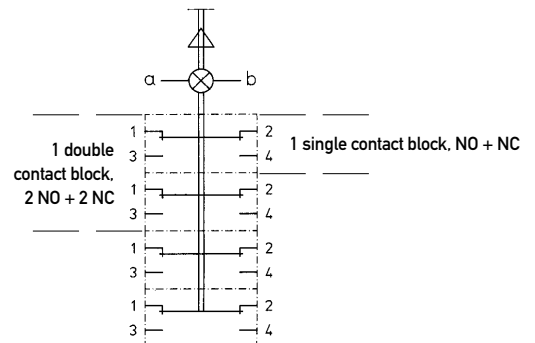
Mechanism	Bi-functional – momentary or latching
Actuating force	Approximately 2.5N – 1 contact block
Mounting	Central fixing with metal lock nut
Protection	IP40, IP65, IP67
Bezel material	Thermoplastic or anodized aluminium alloy
Lens material	Polycarbonate – engravable
Illumination	T1 ¾ midget grooved lamps – incandescent lamps, LEDs, multi LEDs 60 V, 1.2W maximum Lamp contact "b" = cathode (-) Appropriate safety regulations should be respected when using the indicator light.
Temperature range °C	-25°C to +85°C
Mechanical life	10 <sup>6</sup> cycles
Contact block	Slide-on assembly by the user with locking mechanism
Contact block housing	Self-extinguishing duroplastic (UL 94 plus V0)
Terminal material	Silver alloy with 0.2 µm silver plating, 0.4 µm gold plating
Contact resistance	<30 mOhm
Number of contact blocks	User configurable NO or NC types up to a maximum of 2 double contact blocks
Terminals	Solder – suitable for wire diameter 1 × 1.00 mm <sup>2</sup> (braided), 2 × 0.75 mm (stranded) Faston – 2.8 mm × 0.5 mm
Vibration resistance	1.5 mm pp amplitude at 55 Hz

Dimensions

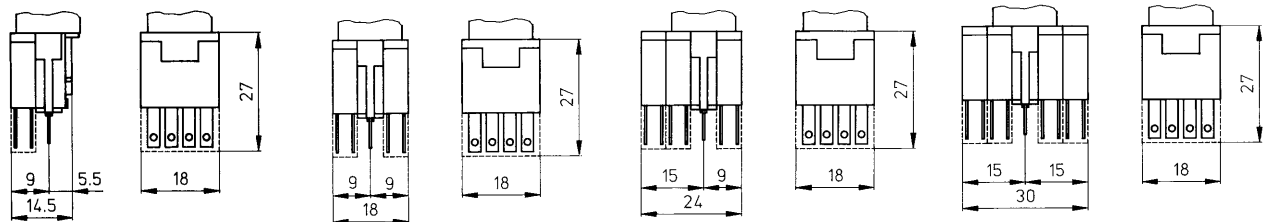


Length in mm (with contact block)	
plastic bezels	43.0
aluminium bezels	42.0
aluminium bezels concealed mounting	50.0

Circuit diagram (2 double contact blocks)



Contact blocks 1 single contact block      2 single contact blocks      1 single contact block + 1 double contact block      2 double contact blocks

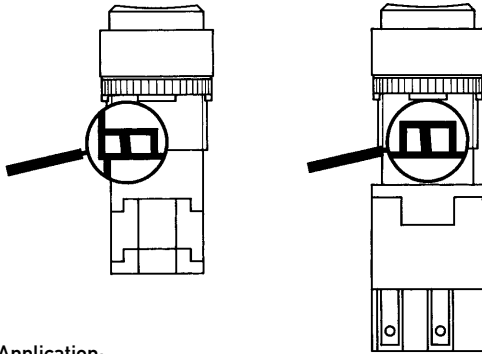


## Recommended maximum electrical ratings

Voltage (max)	Resistive load (A)	Inductive load (A)	Approval
250 VAC	5.0 (0.7 pf)	L/R = 15 ms	UL, CSA, VDE - max. admissible circuit breaker C6A
12 VDC	5.0	3.0	General rating
24 VDC	4.0	2.0	General rating
36 VDC	3.0	1.7	General rating
48 VDC	2.0	1.5	General rating
60 VDC	1.5	1.2	General rating
125 VDC	0.5	0.3	General rating
250 VDC	0.3	0.2	General rating
Electrical life	50,000 cycles at 5A, 250 VAC, 0.7 pf		

Bi-functional selection

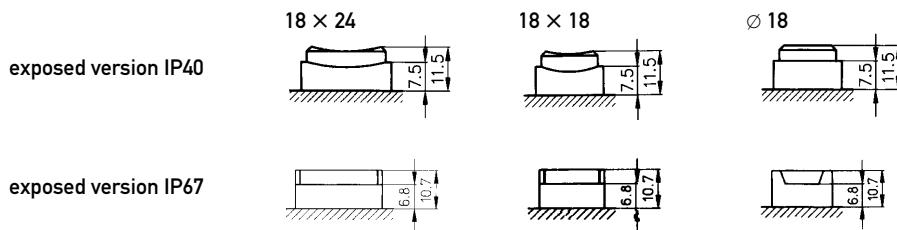
All latching switches in the range incorporate a simple selector mechanism for modifying the function of the switch. This function is not available with momentary switches.



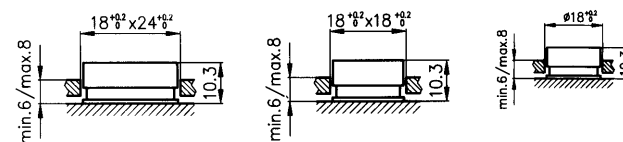
Application:

When the switch is in the off position the selector mechanism can be moved to the right to obtain a momentary function, or to the left to return to a latching function.

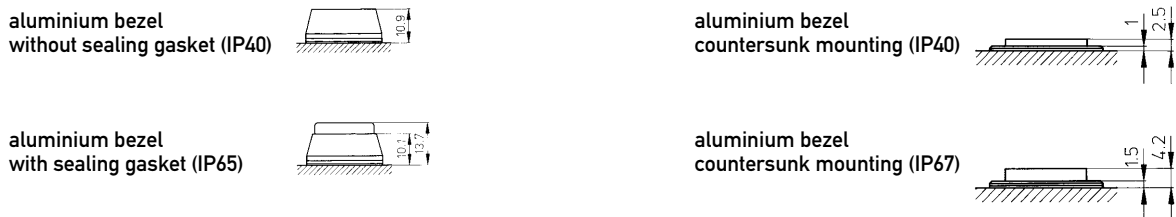
Plastic bezel and lens heights in mm (switch off position)



Panel cut-out exposed version 16.2 ±0.1 mm



Aluminium bezel ∅ 25 and lens heights in mm (switch off position)



Panel cut-out 22.5 ±0.1 mm

Front panel thickness	plastic bezel	1.0 mm to 6.5 mm
	aluminium bezel	1.0 mm to 5.0 mm
	countersunk mounting	2.0 mm to 15.0 mm

Type coding key for standard products

Basic type	TP2						Example: TP2	1	MAA	A1	A1	A0	A	N
Panel cut-out	1	Ø 16.2 mm												
Switch body (A)	MAA	Function	Actuator	Housing (plastic)	Part No.									
	MAB	Momentary	18 × 24 mm	Exposed ; IP40; faston	TH501008000									
	MAC	Momentary	18 × 24 mm	Concealed ; IP40; faston	TH501002000									
	LAA	Latching_	18 × 24 mm	Exposed ; IP67; faston	TH501015000									
	LAB	Latching_	18 × 24 mm	Exposed ; IP40; faston	TH511008000									
	LAC	Latching_	18 × 24 mm	Concealed ; IP40; faston	TH511002000									
					Exposed ; IP67; faston	TH511015000								
	(B)	MBA	Momentary	18 × 18 mm	Exposed ; IP40; faston	TH503008000								
		MBB	Momentary	18 × 18 mm	Concealed ; IP40; faston	TH503002000								
		MBC	Momentary	18 × 18 mm	Exposed ; IP67; faston	TH503015000								
		LBA	Latching_	18 × 18 mm	Exposed ; IP40; faston	TH513008000								
		LBB	Latching_	18 × 18 mm	Concealed ; IP40; faston	TH513002000								
		LBC	Latching_	18 × 18 mm	Exposed ; IP67; faston	TH513015000								
	(C)	MDA	Momentary	Ø 18 mm	Exposed ; IP40; faston	TH505008000								
		MDB	Momentary	Ø 18 mm	Concealed ; IP40; faston	TH505002000								
		MDC	Momentary	Ø 18 mm	Exposed ; IP67; faston	TH505015000								
		LDA	Latching_	Ø 18 mm	Exposed ; IP40; faston	TH515008000								
		LDB	Latching_	Ø 18 mm	Concealed ; IP40; faston	TH515002000								
LDC		Latching_	Ø 18 mm	Exposed ; IP67; faston	TH515015000									
Contact block, gold Position 1	XX	No Contact Blocks		Terminals	Part No.									
	A1	NO		2.8 × 0.5mm	TH593566020									
	A9	NO		Insulated faston	TH593560020									
	A8	NO		Solder	TH593561020									
	B1	NC		2.8 × 0.5mm	TH593566050									
	B9	NC		Insulated faston	TH593560050									
	B8	NC		Solder	TH593561050									
	C1	1 NO + 1 NC		2.8 × 0.5mm	TH593566000									
	C9	1 NO + 1 NC		Insulated faston	TH593560000									
	C8	1 NO + 1 NC		Solder	TH593561000									
	D1	2 NO + 2 NC		2.8 × 0.5mm	TH593567000									
	D9	2 NO + 2 NC		Insulated faston	TH593563000									
	D8	2 NO + 2 NC		Solder	TH593564000									
	Contact block, gold Position 2	XX	No Contact Blocks		Terminals	Part No.								
A1		NO		2.8 × 0.5mm	TH593566020									
A9		NO		Insulated faston	TH593560020									
A8		NO		Solder	TH593561020									
B1		NC		2.8 × 0.5mm	TH593566050									
B9		NC		Insulated faston	TH593560050									
B8		NC		Solder	TH593561050									
C1		1 NO + 1 NC		2.8 × 0.5mm	TH593566000									
C9		1 NO + 1 NC		Insulated faston	TH593560000									
C8		1 NO + 1 NC		Solder	TH593561000									
D1		2 NO + 2 NC		2.8 × 0.5mm	TH593567000									
D9		2 NO + 2 NC		Insulated faston	TH593563000									
D8		2 NO + 2 NC		Solder	TH593564000									
Lens, transparent For Switch body style (A)		A0	White	Exposed 15 × 21 mm	Concealed 18 × 24 mm	Exposed IP40 TH461021000	Concealed IP 40 TH461017000	Exposed IP67 TH561011000						
	A1	Yellow	15 × 21 mm	18 × 24 mm	TH461121000	TH461117000	TH561111000							
	A2	Green	15 × 21 mm	18 × 24 mm	TH461221000	TH461217000	TH561211000							
	A3	Blue	15 × 21 mm	18 × 24 mm	TH461321000	TH461317000	TH561311000							
	A4	Red	15 × 21 mm	18 × 24 mm	TH461421000	TH461417000	TH561411000							
	A6	Orange	15 × 21 mm	18 × 24 mm	TH461621000	TH461617000	TH561611000							
	For Switch body style (B)	B0	White	15 × 15 mm	18 × 18 mm	TH463021000	TH463018000	TH563011000						
		B1	Yellow	15 × 15 mm	18 × 18 mm	TH463121000	TH463118000	TH563111000						
		B2	Green	15 × 15 mm	18 × 18 mm	TH463221000	TH463218000	TH563211000						
		B3	Blue	15 × 15 mm	18 × 18 mm	TH463321000	TH463318000	TH563311000						
		B4	Red	15 × 15 mm	18 × 18 mm	TH463421000	TH463418000	TH563411000						
		B6	Orange	15 × 15 mm	18 × 18 mm	TH463621000	TH463618000	TH563611000						
For Switch body style (C)	D0	White	Ø 15 mm	Ø 18 mm	TH465021000	TH465015000	TH565011000							
	D1	Yellow	Ø 15 mm	Ø 18 mm	TH465121000	TH465115000	TH565111000							
	D2	Green	Ø 15 mm	Ø 18 mm	TH465221000	TH465215000	TH565211000							
	D3	Blue	Ø 15 mm	Ø 18 mm	TH465321000	TH465315000	TH565311000							
	D4	Red	Ø 15 mm	Ø 18 mm	TH465421000	TH465415000	TH565411000							
	D6	Orange	Ø 15 mm	Ø 18 mm	TH465621000	TH465615000	TH565611000							
Illumination	X	Non illuminated												
	A	6V												
	B	12V												
	C	24V												
	F	48V												
Illumination Colour	X	Non illuminated												
	N	Incandescent lamp	6V, 200 mA TH590000000	12V, 80 mA TH590001000	24V, 50 mA TH590006000	48V, 25 mA TH590004000								
	1	Yellow LED	6V AC/DC, 45 mA TH590231000	12V AC/DC, 25 mA TH590234000	24V AC/DC, 12.5 mA TH590237000	48V AC/DC, 12.5 mA TH590240000								
	2	Green LED	TH590232000	TH590235000	TH590238000	TH590241000								
	4	Red LED	TH590230000	TH590233000	TH590236000	TH590239000								

Note: Contact blocks will be supplied unassembled

Type coding key for standard products

Basic type	TP2						Example: TP2	1	MAD	A1	A1	A0	A	N
Panel cut-out	1	Ø 16.2 mm												
Switch body (A)	MAD	Function	Actuator	Housing (plastic)	Part No.									
	MAE	Momentary	18 × 24 mm	Exposed ; IP40; solder	TH501108000									
	MAF	Momentary	18 × 24 mm	Concealed ; IP40; solder	TH501102000									
	LAD	Latching_	18 × 24 mm	Exposed ; IP67; solder	TH501115000									
	LAE	Latching_	18 × 24 mm	Exposed ; IP40; solder	TH511108000									
	LAE	Latching_	18 × 24 mm	Concealed ; IP40; solder	TH511102000									
	LAF	Latching_	18 × 24 mm	Exposed ; IP67; solder	TH511115000									
	(B)	MBD	Momentary	18 × 18 mm	Exposed ; IP40; solder	TH503108000								
	MBE	Momentary	18 × 18 mm	Concealed ; IP40; solder	TH503102000									
	MBF	Momentary	18 × 18 mm	Exposed ; IP67; solder	TH503115000									
	LBD	Latching_	18 × 18 mm	Exposed ; IP40; solder	TH513108000									
	LBE	Latching_	18 × 18 mm	Concealed ; IP40; solder	TH513102000									
	LBF	Latching_	18 × 18 mm	Exposed ; IP67; solder	TH513115000									
	(C)	MDD	Momentary	Ø 18 mm	Exposed ; IP40; solder	TH505108000								
	MDE	Momentary	Ø 18 mm	Concealed ; IP40; solder	TH505102000									
	MDF	Momentary	Ø 18 mm	Exposed ; IP67; solder	TH505115000									
	LDD	Latching_	Ø 18 mm	Exposed ; IP40; solder	TH515108000									
	LDE	Latching_	Ø 18 mm	Concealed ; IP40; solder	TH515102000									
LDF	Latching_	Ø 18 mm	Exposed ; IP67; solder	TH515115000										
Contact block, gold Position 1	XX	No Contact Blocks		Terminals		Part No.								
	A1	NO		2.8 × 0.5mm		TH593566020								
	A9	NO		Insulated faston		TH593560020								
	A8	NO		Solder		TH593561020								
	B1	NC		2.8 × 0.5mm		TH593566050								
	B9	NC		Insulated faston		TH593560050								
	B8	NC		Solder		TH593561050								
	C1	1 NO + 1 NC		2.8 × 0.5mm		TH593566000								
	C9	1 NO + 1 NC		Insulated faston		TH593560000								
	C8	1 NO + 1 NC		Solder		TH593561000								
	D1	2 NO + 2 NC		2.8 × 0.5mm		TH593567000								
	D9	2 NO + 2 NC		Insulated faston		TH593563000								
	D8	2 NO + 2 NC		Solder		TH593564000								
	Contact block, gold Position 2	XX	No Contact Blocks		Terminals		Part No.							
A1		NO		2.8 × 0.5mm		TH593566020								
A9		NO		Insulated faston		TH593560020								
A8		NO		Solder		TH593561020								
B1		NC		2.8 × 0.5mm		TH593566050								
B9		NC		Insulated faston		TH593560050								
B8		NC		Solder		TH593561050								
C1		1 NO + 1 NC		2.8 × 0.5mm		TH593566000								
C9		1 NO + 1 NC		Insulated faston		TH593560000								
C8		1 NO + 1 NC		Solder		TH593561000								
D1		2 NO + 2 NC		2.8 × 0.5mm		TH593567000								
D9		2 NO + 2 NC		Insulated faston		TH593563000								
D8		2 NO + 2 NC		Solder		TH593564000								
Lens, transparent For Switch body style (A)		A0	White	Exposed 15 × 21 mm	Concealed 18 × 24 mm	Exposed IP40 TH461021000	Concealed IP 40 TH461017000	Exposed IP67 TH561011000						
	A1	Yellow	15 × 21 mm	18 × 24 mm	TH461121000	TH461117000	TH561111000							
	A2	Green	15 × 21 mm	18 × 24 mm	TH461221000	TH461217000	TH561211000							
	A3	Blue	15 × 21 mm	18 × 24 mm	TH461321000	TH461317000	TH561311000							
	A4	Red	15 × 21 mm	18 × 24 mm	TH461421000	TH461417000	TH561411000							
	A6	Orange	15 × 21 mm	18 × 24 mm	TH461621000	TH461617000	TH561611000							
	For Switch body style (B)	B0	White	15 × 15 mm	18 × 18 mm	TH463021000	TH463018000	TH563011000						
B1		Yellow	15 × 15 mm	18 × 18 mm	TH463121000	TH463118000	TH563111000							
B2		Green	15 × 15 mm	18 × 18 mm	TH463221000	TH463218000	TH563211000							
B3		Blue	15 × 15 mm	18 × 18 mm	TH463321000	TH463318000	TH563311000							
B4		Red	15 × 15 mm	18 × 18 mm	TH463421000	TH463418000	TH563411000							
B6		Orange	15 × 15 mm	18 × 18 mm	TH463621000	TH463618000	TH563611000							
For Switch body style (C)	D0	White	Ø 15 mm	Ø 18 mm	TH465021000	TH465015000	TH565011000							
	D1	Yellow	Ø 15 mm	Ø 18 mm	TH465121000	TH465115000	TH565111000							
	D2	Green	Ø 15 mm	Ø 18 mm	TH465221000	TH465215000	TH565211000							
	D3	Blue	Ø 15 mm	Ø 18 mm	TH465321000	TH465315000	TH565311000							
	D4	Red	Ø 15 mm	Ø 18 mm	TH465421000	TH465415000	TH565411000							
	D6	Orange	Ø 15 mm	Ø 18 mm	TH465621000	TH465615000	TH565611000							
Illumination	X	Non illuminated												
	A	6V												
	B	12V												
	C	24V												
F	48V													
Illumination Colour	X	Non illuminated												
	N	Incandescent lamp	6V, 200 mA TH590000000	12V, 80 mA TH590001000	24V, 50 mA TH590006000	48V, 25 mA TH590004000								
	1	Yellow LED	6V AC/DC, 45 mA TH590231000	12V AC/DC, 25 mA TH590234000	24V AC/DC, 12.5 mA TH590237000	48V AC/DC, 12.5 mA TH590240000								
	2	Green LED	TH590232000	TH590235000	TH590238000	TH590241000								
	4	Red LED	TH590230000	TH590233000	TH590236000	TH590239000								

Note: Contact blocks will be supplied unassembled

Type coding key for standard products

Basic type	TP2					Example: TP2	2	MFA	A1	A1	E0	A	N
Panel cut-out	2					Ø 22.5 mm							
Switch body (A)	MFA	Function	Actuator	Housing	Part No.								
	LFA	Momentary	Ø 25	Exposed plastic; IP65; faston	TH505020000								
	LFA	Latching_	Ø 25	Exposed plastic; IP65; faston	TH515020000								
	(B)	MFB	Momentary	Ø 25	Exposed aluminium; IP40 / IP65*; faston	TH505018000							
		LFB	Latching_	Ø 25	Exposed aluminium; IP40 / IP65*; faston	TH515018000							
	MFC	Momentary	Ø 25	Exposed aluminium; IP65* with silicon cap; faston	TH505033000								
	LFC	Latching_	Ø 25	Exposed aluminium; IP65* with silicon cap; faston	TH515033000								
	MFD	Momentary	Ø 25	Flush-aluminium; IP40; faston	TH505050000								
	LFD	Latching_	Ø 25	Flush-aluminium; IP40; faston	TH515050000								
	MFE	Momentary	Ø 25	Flush-aluminium; IP67; faston	TH505051000								
	LFE	Latching_	Ø 25	Flush-aluminium; IP67; faston	TH515051000								
	Contact block, gold Position 1	XX	No contact blocks		Terminals	Part No.							
A1		NO		2.8 × 0.5mm	TH593566020								
A9		NO		Insulated faston	TH593560020								
A8		NO		Solder	TH593561020								
B1		NC		2.8 × 0.5mm	TH593566050								
B9		NC		Insulated faston	TH593560050								
B8		NC		Solder	TH593561050								
C1		1 NO + 1 NC		2.8 × 0.5mm	TH593566000								
C9		1 NO + 1 NC		Insulated faston	TH593560000								
C8		1 NO + 1 NC		Solder	TH593561000								
D1		2 NO + 2 NC		2.8 × 0.5mm	TH593569000								
D9		2 NO + 2 NC		Insulated faston	TH593563000								
D8		2 NO + 2 NC		Solder	TH593564000								
Contact block, gold Position 2		XX	No contact blocks		Terminals	Part No.							
	A1	NO		2.8 × 0.5mm	TH593566020								
	A9	NO		Insulated faston	TH593560020								
	A8	NO		Solder	TH593561020								
	B1	NC		2.8 × 0.5mm	TH593566050								
	B9	NC		Insulated faston	TH593560050								
	B8	NC		Solder	TH593561050								
	C1	1 NO + 1 NC		2.8 × 0.5mm	TH593566000								
	C9	1 NO + 1 NC		Insulated faston	TH593560000								
	C8	1 NO + 1 NC		Solder	TH593561000								
	D1	2 NO + 2 NC		2.8 × 0.5mm	TH593569000								
	D9	2 NO + 2 NC		Insulated faston	TH593563000								
	D8	2 NO + 2 NC		Solder	TH593564000								
	Lens, transparent For Switch body style (A)	E0	White	Ø 21	TH565024000	} For Plastic Bezel only IP65							
E1		Yellow	Ø 21	TH565124000									
E2		Green	Ø 21	TH565224000									
E3		Blue	Ø 21	TH565324000									
E4		Red	Ø 21	TH565424000									
E6		Orange	Ø 21	TH565624000									
For Switch body style (B)	F0	White	Ø 18	TH465015000	IP40/IP65	IP65 with Silion cap	IP67						
	F1	Yellow	Ø 18	TH465115000	TH465001000	TH465101000	TH565025000						
	F2	Green	Ø 18	TH465215000	TH465201000	TH465301000	TH565125000						
	F3	Blue	Ø 18	TH465315000	TH465401000	TH465501000	TH565225000						
	F4	Red	Ø 18	TH465415000	TH465601000	TH465701000	TH565325000						
	F6	Orange	Ø 18	TH465615000	TH465801000	TH465901000	TH565425000	} For Aluminium Bezel only					
Illumination	X	Non illuminated											
	A	6V											
	B	12V											
	C	24V											
	F	48V											
Illumination Colour	X	Non illuminated											
	N	Incandescent lamp		6V, 200 mA	12V, 80 mA	24V, 50 mA	48V, 25 mA						
				TH590000000	TH590001000	TH590006000	TH590004000						
	1	Yellow LED		6V AC/DC, 45 mA	12V AC/DC, 25 mA	24V AC/DC, 12.5 mA	48V AC/DC, 12.5 mA						
	2	Green LED		TH590231000	TH590234000	TH590237000	TH590240000						
	4	Red LED		TH590232000	TH590235000	TH590238000	TH590241000						
				TH590230000	TH590233000	TH590236000	TH590239000						

Note: Contact blocks will be supplied unassembled

Type coding key for standard products

Basic type	TP2					Example: TP2	2	MFF	A1	A1	E0	A	N
Panel cut-out	2 Ø 22.5 mm												
Switch body (A)		Function	Actuator	Housing	Part No.								
	MFF	Momentary	Ø 25	Exposed plastic; IP65; solder	TH505120000								
	LFF	Latching	Ø 25	Exposed plastic; IP65; solder	TH515120000								
	(B)	MFG	Momentary	Ø 25	Exposed aluminium; IP40 / IP65*; solder	TH505118000							
	LFG	Latching	Ø 25	Exposed aluminium; IP40 / IP65*; solder	TH515118000								
	MFH	Momentary	Ø 25	Exposed aluminium; IP65* with silicon cap; solder	TH505133000								
	LFH	Latching	Ø 25	Exposed aluminium; IP65* with silicon cap; solder	TH515133000								
	MFJ	Momentary	Ø 25	Flush-aluminium; IP40; solder	TH505150000								
	LFJ	Latching	Ø 25	Flush-aluminium; IP40; solder	TH515150000								
	MFK	Momentary	Ø 25	Flush-aluminium; IP67; solder	TH505151000								
LFK	Latching	Ø 25	Flush-aluminium; IP67; solder	TH515151000									
Contact block, gold Position 1	XX	No Contact Blocks		Terminals	Part No.								
	A1	NO		2.8 × 0.5mm	TH593566020								
	A9	NO		Insulated faston	TH593560020								
	A8	NO		Solder	TH593561020								
	B1	NC		2.8 × 0.5mm	TH593566050								
	B9	NC		Insulated faston	TH593560050								
	B8	NC		Solder	TH593561050								
	C1	1 NO + 1 NC		2.8 × 0.5mm	TH593566000								
	C9	1 NO + 1 NC		Insulated faston	TH593560000								
	C8	1 NO + 1 NC		Solder	TH593561000								
	D1	2 NO + 2 NC		2.8 × 0.5mm	TH593567000								
	D9	2 NO + 2 NC		Insulated faston	TH593563000								
	D8	2 NO + 2 NC		Solder	TH593564000								
	Contact block, gold Position 2	XX	No Contact Blocks		Terminals	Part No.							
A1		NO		2.8 × 0.5mm	TH593566020								
A9		NO		Insulated faston	TH593560020								
A8		NO		Solder	TH593561020								
B1		NC		2.8 × 0.5mm	TH593566050								
B8		NC		Solder	TH593561050								
C1		1 NO + 1 NC		2.8 × 0.5mm	TH593566000								
C9		1 NO + 1 NC		Insulated faston	TH593560000								
C8		1 NO + 1 NC		Solder	TH593561000								
D1		2 NO + 2 NC		2.8 × 0.5mm	TH593567000								
D9		2 NO + 2 NC		Insulated faston	TH593563000								
D8		2 NO + 2 NC		Solder	TH593564000								
Lens, transparent For Switch body style (A)		E0	White	Ø 21	TH565024000	} For Plastic Bezel only IP65							
		E1	Yellow	Ø 21	TH565124000								
	E2	Green	Ø 21	TH565224000									
	E3	Blue	Ø 21	TH565324000									
	E4	Red	Ø 21	TH565424000									
	E6	Orange	Ø 21	TH565624000									
For Switch body style (B)	F0	White	Ø 18	IP40/IP65 TH465015000	IP65 with Silicon cap TH465001000	IP67 TH565025000	} For Aluminium Bezel only						
	F1	Yellow	Ø 18	TH465115000	TH465101000	TH565125000							
	F2	Green	Ø 18	TH465215000	TH465201000	TH565225000							
	F3	Blue	Ø 18	TH465315000	TH465301000	TH565325000							
	F4	Red	Ø 18	TH465415000	TH465401000	TH565425000							
	F6	Orange	Ø 18	TH465615000	TH465601000	TH565625000							
Illumination	X	Non illuminated											
	A	6V											
	B	12V											
	C	24V											
	F	48V											
Illumination Colour	X	Non illuminated											
	N	Incandescent lamp		6V, 200 mA TH590000000	12V, 80 mA TH590001000	24V, 50 mA TH590006000	48V, 25 mA TH590004000						
	1	Yellow LED	6V AC/DC, 45 mA	TH590231000	12V AC/DC, 25 mA TH590234000	24V AC/DC, 12.5 mA TH590237000	48V AC/DC, 12.5 mA TH590240000						
	2	Green LED	TH590232000	TH590235000	TH590238000	TH590241000							
	4	Red LED	TH590230000	TH590233000	TH590236000	TH590239000							

Note: Contact blocks will be supplied unassembled



# TP5

## Panel Mounted

Push Button

### TP5

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- momentary or latching
  - sealed IP40 or IP65
  - wide range of bezels
  - shallow mounting depth
  - with or without illumination
  - NO, NC
  - gold plated contact blocks

Rating 250 VAC, 5 A

Dimensions (mm) 18 × 24  
18 × 18  
 $\varnothing$  18  
 $\varnothing$  25

Actuator ■ lenses in different shapes and colours

Approvals UL, CSA, VDE



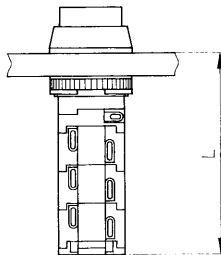
### Popular Products

Ordering Reference	Panel cut-out	Function	Actuator style	Terminals	Electrical rating
TP51LAA2A4CN	$\varnothing$ 16.2 mm	Latching; IP40	18 × 24 mm, red Illumination	Solder; gold	250 VAC, 5A
TP51LDA2D4CN	$\varnothing$ 16.2 mm	Latching; IP40	$\varnothing$ 18 mm, red Illumination	Solder; gold	250 VAC, 5A
TP51MAA2A4CN	$\varnothing$ 16.2 mm	Momentary; IP40	18 × 24 mm, red Illumination	Solder; gold	250 VAC, 5A
TP51MDA2D4CN	$\varnothing$ 16.2 mm	Momentary; IP40	$\varnothing$ 18 mm, red Illumination	Solder; gold	250 VAC, 5A
TP52LFD2F4CN	$\varnothing$ 22.5 mm	Latching; IP40	$\varnothing$ 25 mm, red Illumination	Solder; gold	250 VAC, 5A
TP52MFD2F4CN	$\varnothing$ 22.5 mm	Momentary; IP40	$\varnothing$ 25 mm, green Illumination	Solder; gold	250 VAC, 5A

## Specifications

Mechanism	Bi-functional – momentary or latching
Actuating force	Approximately 2.5N – 1 contact block
Mounting	Central fixing with metal lock nut
Protection	IP40, IP65
Bezel material	Thermoplastic or anodized aluminium alloy
Lens material	Polycarbonate – engravable
Illumination	T13/4 midget grooved lamps – incandescent lamps , LEDs, multi LEDs 60 V, 1.2 W maximum Lamp contact "a" = cathode (-) Appropriate safety regulations should be respected when using the indicator light.
Temperature range °C	-30°C to +80°C
Mechanical life	10 <sup>6</sup> cycles
Contact block (blocks)	Supplied fitted
Contact block housing	Self-extinguishing duroplastic (UL 94 V0)
Terminal material	Silver alloy with 0.2 µm silver plating plus 0.4 µm gold plating
Contact resistance	< 30mOhm
Number of contact blocks	1 NO + 1 NC per contact block, up to a maximum of 3 contact blocks per switch
Terminals	Patented flexible solder - suitable for wire diameter 2 × 1.00 mm <sup>2</sup> (braided), 4 × 0.75 mm (stranded)
Vibration resistance	1.5 mm pp amplitude at 55 Hz

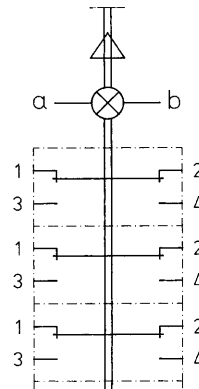
Dimensions



Length in mm (countersunk mounting version)

Panel cut-out	16.2 ±0.1	22.5 ±0.1
N° of contact blocks 1	27.5	26.5 (35.0)
2	36.0	35.0 (43.5)
3	44.5	43.5 (52.0)

Circuit diagram (3 contact blocks)

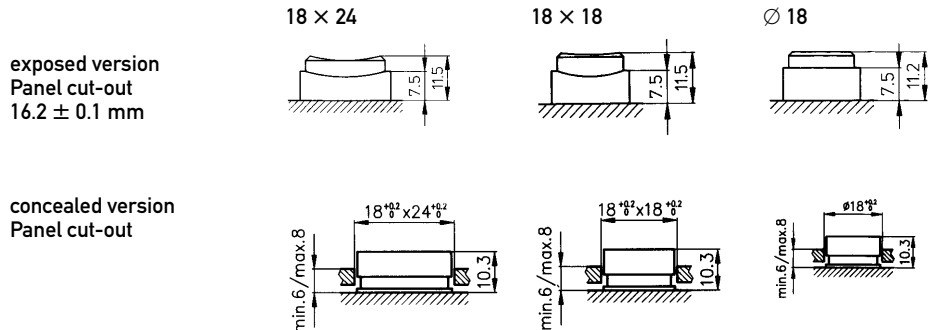


## Recommended maximum electrical ratings

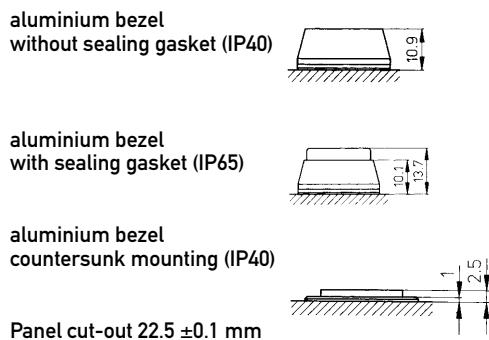
Voltage (max)	Resistive load (A)	Inductive load (A)	Approval
250 VAC	5.0 (0.7 pf)		UL, CSA, VDE - max. admissible circuit breaker C6A
12 VDC	5.0	3.0	General rating
24 VDC	4.0	2.0	General rating
36 VDC	3.0	1.7	General rating
48 VDC	2.0	1.5	General rating
60 VDC	1.5	1.2	General rating
125 VDC	0.5	0.3	General rating
250 VDC	0.3	0.2	General rating
Electrical life	70,000 cycles at 5A, 250 VAC, 0.7 pf		

# TP5

Dimensions Plastic bezel and lens heights in mm (switch off position)



Aluminium bezel ∅ 25 and lens heights in mm (switch off position)

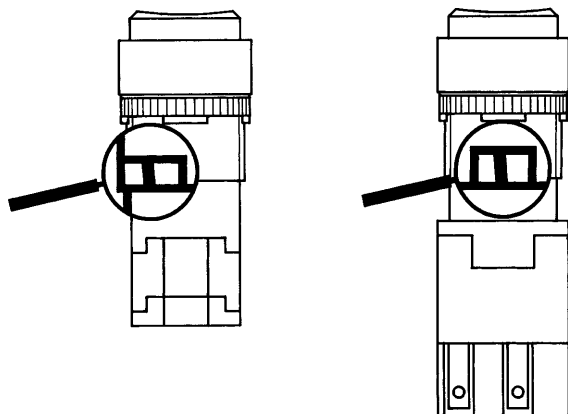


Front panel thickness	plastic bezel	1.0 mm to 5.5 mm
	aluminium bezel	1.0 mm to 5.0 mm
	countersunk mounting	2.0 mm to 20.0 mm

## Bi-functional selection

All latching switches in the range incorporate a simple selector mechanism for modifying the function of the switch.

This function is not available with momentary or interlocking switches.



## Application:

When the switch is in the off position the selector mechanism can be moved to the right to obtain a momentary function, or to the left to return to a latching function.

Type coding key for standard products

Basic type		TP5					Example: TP5 1 MAA0 A0 A N					
Panel cut-out		1 Ø 16.2 mm										
Switch body (A)	MAA0	Momentary	18 × 24 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH50008000					
	MAA1	Momentary	18 × 24 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH500208000					
	MAA2	Momentary	18 × 24 mm	Exposed; IP40; solder	None	3 NO + 3 NC	TH500308000					
	MAA3	Momentary	18 × 24 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH510008000					
	LAA0	Latching	18 × 24 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH510108000					
	LAA1	Latching	18 × 24 mm	Exposed; IP40; solder	None	3 NO + 3 NC	TH510208000					
	LAA2	Latching	18 × 24 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH510308000					
	LAA3	Latching	18 × 24 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH500002000					
	MAB0	Momentary	18 × 24 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH500102000					
	MAB1	Momentary	18 × 24 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH500202000					
	MAB2	Momentary	18 × 24 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH500302000					
	MAB3	Momentary	18 × 24 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH510002000					
	LAB0	Latching	18 × 24 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH510102000					
	LAB1	Latching	18 × 24 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH510202000					
	LAB2	Latching	18 × 24 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH510302000					
	LAB3	Latching	18 × 24 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH510000000					
	LAB3	Latching	18 × 24 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH510302000					
	Switch body (B)	MBA0	Momentary	18 × 18 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH502008000				
		MBA1	Momentary	18 × 18 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH502108000				
		MBA2	Momentary	18 × 18 mm	Exposed; IP40; solder	None	3 NO + 3 NC	TH502208000				
		MBA3	Momentary	18 × 18 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH502308000				
LBA0		Latching	18 × 18 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH512008000					
LBA1		Latching	18 × 18 mm	Exposed; IP40; solder	None	3 NO + 3 NC	TH512108000					
LBA2		Latching	18 × 18 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH512208000					
LBA3		Latching	18 × 18 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH512308000					
MBB0		Momentary	18 × 18 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH502002000					
MBB1		Momentary	18 × 18 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH502102000					
MBB2		Momentary	18 × 18 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH502202000					
MBB3		Momentary	18 × 18 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH502302000					
LBB0		Latching	18 × 18 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH512002000					
LBB1		Latching	18 × 18 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH512102000					
LBB2		Latching	18 × 18 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH512202000					
LBB3		Latching	18 × 18 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH512302000					
Switch body (C)		MDA0	Momentary	Ø 18 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH504008000				
		MDA1	Momentary	Ø 18 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH504108000				
	MDA2	Momentary	Ø 18 mm	Exposed; IP40; solder	None	3 NO + 3 NC	TH504208000					
	MDA3	Momentary	Ø 18 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH504308000					
	LDA0	Latching	Ø 18 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH514008000					
	LDA1	Latching	Ø 18 mm	Exposed; IP40; solder	None	3 NO + 3 NC	TH514108000					
	LDA2	Latching	Ø 18 mm	Exposed; IP40; solder	None	1 NO + 1 NC	TH514208000					
	LDA3	Latching	Ø 18 mm	Exposed; IP40; solder	None	2 NO + 2 NC	TH514308000					
	MDB0	Momentary	Ø 18 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH504002000					
	MDB1	Momentary	Ø 18 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH504102000					
	MDB2	Momentary	Ø 18 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH504202000					
	MDB3	Momentary	Ø 18 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH504302000					
	LDB0	Latching	Ø 18 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH514002000					
	LDB1	Latching	Ø 18 mm	Concealed; IP40; solder	None	3 NO + 3 NC	TH514102000					
	LDB2	Latching	Ø 18 mm	Concealed; IP40; solder	None	1 NO + 1 NC	TH514202000					
	LDB3	Latching	Ø 18 mm	Concealed; IP40; solder	None	2 NO + 2 NC	TH514302000					
	Transparent Lens For Switch body style (A)	A0	White	15 × 21 mm	Exposed	18 × 24 mm	Concealed	Exposed	Concealed	TH461021000	TH461017000	
		A1	Yellow	15 × 21 mm	Exposed	18 × 24 mm	Concealed	Exposed	Concealed	TH461121000	TH461117000	
		A2	Green	15 × 21 mm	Exposed	18 × 24 mm	Concealed	Exposed	Concealed	TH461221000	TH461217000	
		A3	Blue	15 × 21 mm	Exposed	18 × 24 mm	Concealed	Exposed	Concealed	TH461321000	TH461317000	
		A4	Red	15 × 21 mm	Exposed	18 × 24 mm	Concealed	Exposed	Concealed	TH461421000	TH461417000	
A6		Orange	15 × 21 mm	Exposed	18 × 24 mm	Concealed	Exposed	Concealed	TH461621000	TH461617000		
For Switch body style (B)	B0	White	15 × 15 mm	Exposed	18 × 18 mm	Concealed	Exposed	Concealed	TH463021000	TH463018000		
	B1	Yellow	15 × 15 mm	Exposed	18 × 18 mm	Concealed	Exposed	Concealed	TH463121000	TH463118000		
	B2	Green	15 × 15 mm	Exposed	18 × 18 mm	Concealed	Exposed	Concealed	TH463221000	TH463218000		
	B3	Blue	15 × 15 mm	Exposed	18 × 18 mm	Concealed	Exposed	Concealed	TH463321000	TH463318000		
	B4	Red	15 × 15 mm	Exposed	18 × 18 mm	Concealed	Exposed	Concealed	TH463421000	TH463418000		
	B6	Orange	15 × 15 mm	Exposed	18 × 18 mm	Concealed	Exposed	Concealed	TH463621000	TH463618000		
For Switch body style (C)	D0	White	Ø 15 mm	Exposed	Ø 18 mm	Concealed	Exposed	Concealed	TH465021000	TH465015000		
	D1	Yellow	Ø 15 mm	Exposed	Ø 18 mm	Concealed	Exposed	Concealed	TH465121000	TH465115000		
	D2	Green	Ø 15 mm	Exposed	Ø 18 mm	Concealed	Exposed	Concealed	TH465221000	TH465215000		
	D3	Blue	Ø 15 mm	Exposed	Ø 18 mm	Concealed	Exposed	Concealed	TH465321000	TH465315000		
	D4	Red	Ø 15 mm	Exposed	Ø 18 mm	Concealed	Exposed	Concealed	TH465421000	TH465415000		
	D6	Orange	Ø 15 mm	Exposed	Ø 18 mm	Concealed	Exposed	Concealed	TH465621000	TH465615000		
Illumination	X	Non illuminated										
	A	6V										
	B	12V										
	C	24V										
Illumination Colour	X	Non illuminated										
	N	Incandescent lamp	6V, 200 mA TH590000000	12V, 80 mA TH590010000	24V, 50 mA TH590006000	48V, 25 mA TH590004000						
1	Yellow LED	6V AC/DC, 45 mA	TH590231000	12V AC/DC, 25 mA	TH590234000	24V AC/DC, 12.5 mA	TH590237000	48V AC/DC, 12.5 mA	TH590240000			
	Green LED		TH590232000		TH590235000		TH590238000		TH590241000			
	Red LED		TH590230000		TH590233000		TH590236000		TH590239000			

Type coding key for standard products

Basic type	TP5					Example: TP5 2 MFC0 F0 A N				
Panel cut-out	2 Ø 22.5 mm									
Switch body	Function	Actuator	Housing (Aluminium)			Contact blocks	Part No.			
	MFC0 Momentary	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			None	TH504018000			
	MFC1 Momentary	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			1 NO + 1 NC	TH504118000			
	MFC2 Momentary	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			2 NO + 2 NC	TH504218000			
	MFC3 Momentary	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			3 NO + 3 NC	TH504318000			
	LFC0 Latching_	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			None	TH514018000			
	LFC1 Latching_	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			1 NO + 1 NC	TH514118000			
	LFC2 Latching_	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			2 NO + 2 NC	TH514218000			
	LFC3 Latching_	Ø 25 mm	Exposed Aluminium; IP40 / IP65*; solder			3 NO + 3 NC	TH514318000			
	MFD0 Momentary	Ø 25 mm	Flush Aluminium; IP40; solder			None	TH504050000			
	MFD1 Momentary	Ø 25 mm	Flush Aluminium; IP40; solder			1 NO + 1 NC	TH504150000			
	MFD2 Momentary	Ø 25 mm	Flush Aluminium; IP40; solder			2 NO + 2 NC	TH504250000			
	MFD3 Momentary	Ø 25 mm	Flush Aluminium; IP40; solder			3 NO + 3 NC	TH504350000			
	LFD0 Latching_	Ø 25 mm	Flush Aluminium; IP40; solder			None	TH514050000			
	LFD1 Latching_	Ø 25 mm	Flush Aluminium; IP40; solder			1 NO + 1 NC	TH514150000			
	LFD2 Latching_	Ø 25 mm	Flush Aluminium; IP40; solder			2 NO + 2 NC	TH514250000			
	LFD3 Latching_	Ø 25 mm	Flush Aluminium; IP40; solder			3 NO + 3 NC	TH514350000			
	MFK0 Momentary	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			None	TH504033000			
	MFK1 Momentary	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			1 NO + 1 NC	TH504133000			
	MFK2 Momentary	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			2 NO + 2 NC	TH504233000			
	MFK3 Momentary	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			3 NO + 3 NC	TH504333000			
	LFK0 Latching_	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			None	TH514033000			
	LFK1 Latching_	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			1 NO + 1 NC	TH514133000			
	LFK2 Latching_	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			2 NO + 2 NC	TH514233000			
LFK3 Latching_	Ø 25 mm	Exposed Aluminium with silicon cap; IP65*; solder			3 NO + 3 NC	TH514333000				
Lens, transparent	F0 White	Ø 18	IP40/IP65			IP65 with sealing ring				
	F1 Yellow	Ø 18	TH465015000			TH465001000				
	F2 Green	Ø 18	TH465115000			TH465101000				
	F3 Blue	Ø 18	TH465215000			TH465201000				
	F4 Red	Ø 18	TH465315000			TH465301000				
	F6 Orange	Ø 18	TH465415000			TH465401000				
Illumination	X	Non illuminated								
	A	6V								
	B	12V								
	C	24V								
	F	48V								
Illumination Colour	N	Non illuminated Incandescent lamp	6V, 200 mA TH590000000	12V, 80 mA TH59001000	24V, 50 mA TH590006000	48V, 25 mA TH590004000				
	1	Yellow LED	6V AC/DC, 45 mA TH590231000	12V AC/DC, 25 mA TH590234000	24V AC/DC, 12.5 mA TH590237000	48V AC/DC, 12.5 mA TH590240000				
	2	Green LED	TH590232000	TH590235000	TH590238000	TH590241000				
	4	Red LED	TH590230000	TH590233000	TH590236000	TH590239000				

# TP4

## Panel Mounted

Push Button

### TP4

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- mushroom
  - momentary or latching
  - sealed IP40 or IP65
  - wide range of bezels
  - NO, NC
  - gold plated contact blocks

Rating 250 VAC, 5 A

Dimensions (mm) 18 × 24  
24 × 24  
 $\varnothing$  24  
 $\varnothing$  30

Actuator ■ mushroom cap in different shapes and colours

Approvals UL, CSA, VDE



### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator size (mm)	Actuator style	Environmental protection	Terminals	Electrical rating
TP41LAJ2A4NXX	$\varnothing$ 16.2	Latching	18 × 24	mushroom, red	IP40	Solder	250 VAC, 5A
TP41LEJ2E4NXX	$\varnothing$ 16.2	Latching	$\varnothing$ 24	mushroom, red	IP40	Solder	250 VAC, 5A
TP41MAJ2A4NXX	$\varnothing$ 16.2	Momentary	18 × 24	mushroom, red	IP40	Solder	250 VAC, 5A
TP41MEJ2E4NXX	$\varnothing$ 16.2	Momentary	$\varnothing$ 24	mushroom, red	IP40	Solder	250 VAC, 5A
TP42LHJ2H4NXX	$\varnothing$ 22.5	Latching	$\varnothing$ 30	mushroom, red	IP65	Solder	250 VAC, 5A
TP42MHJ2H4NXX	$\varnothing$ 22.5	Momentary	$\varnothing$ 30	mushroom, red	IP65	Solder	250 VAC, 5A

## Specifications

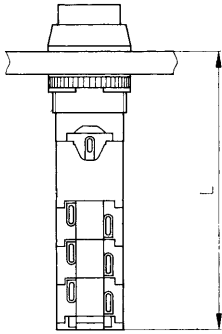
Mechanism	Momentary or latching
Actuating force	Approximately 2.5N – 1 contact block
Mounting	Central fixing with metal lock nut
Protection	IP40, IP65
Bezel material	Thermoplastic or anodized aluminium alloy
Lens material	Polycarbonate – engravable
Illumination	Non-illuminated
Temperature range °C	-30°C to +80°C
Mechanical life	10 <sup>6</sup> cycles
Contact block (blocks)	Supplied fitted
Contact block housing	Self-extinguishing duroplastic (UL 94 V0)
Terminal material	Silver alloy with 0.2 µm silver plating, plus 0.4 µm gold plating
Contact resistance	< 30mOhm
Number of contact blocks	1 NO + 1 NC per contact block, up to a maximum of 3 contact blocks per switch
Terminals	Patented flexible solder - suitable for wire diameter 2 × 1.00 mm <sup>2</sup> (braided), 4 × 0.75 mm (stranded)
Vibration resistance	1.5mm pp amplitude at 55 Hz

## Recommended maximum electrical ratings

Voltage (max)	Resistive load (A)	Inductive load (A)	Approval
250 VAC	5.0 (0.7 pf)		UL, CSA, VDE - max. admissible circuit breaker C6A
12 VDC	5.0	3.0	General rating
24 VDC	4.0	2.0	General rating
36 VDC	3.0	1.7	General rating
48 VDC	2.0	1.5	General rating
60 VDC	1.5	1.2	General rating
125 VDC	0.5	0.3	General rating
250 VDC	0.3	0.2	General rating
Electrical life	70,000 cycles at 5A, 250 VAC, 0.7 pf		

# TP4

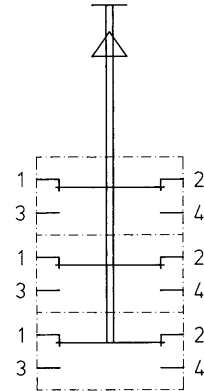
Dimensions



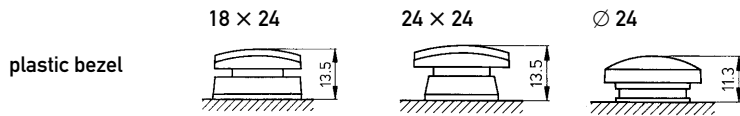
Length in mm

Panel cut-out	16.2 ± 0.1	22.5 ± 0.1
N° of contact blocks 1	44.5	43.5
2	53.0	52.0
3	61.5	60.5

Circuit diagrams (3 contact blocks)



Bezel and lens heights in mm (switch off position)



plastic bezel

aluminium bezel

panel cut-out 22.5 mm

Front panel thickness 1.0 mm to 10 mm (Aluminium bezel 1.0 mm to 6.5 mm)



Type coding key for standard products

Basic type		TP4				Example: TP4		1	MAJ0	A0	N	X	X
Panel cut-out	1	Ø 16.2 mm	Switch body 18 × 24; 24 × 24; Ø 24										
	2	Ø 22.5 mm	Switch body Ø 30 only										
			Function	Actuator style	Environmental protection	Contact blocks	Part No.						
Switch body	MAJ0	Momentary	18 × 24 mm	IP40	None	TH400004							
Panel cut-out 16.2 mm (A)	MAJ1	Momentary	18 × 24 mm	IP40	1NO + 1NC	TH400104							
	MAJ2	Momentary	18 × 24 mm	IP40	2 NO + 2 NC	TH400204							
	MAJ3	Momentary	18 × 24 mm	IP40	3 NO + 3 NC	TH400304							
	LAJ0	Latching	18 × 24 mm	IP40	None	TH410004							
	LAJ1	Latching	18 × 24 mm	IP40	1NO + 1NC	TH410104							
	LAJ2	Latching	18 × 24 mm	IP40	2 NO + 2 NC	TH410204							
	LAJ3	Latching	18 × 24 mm	IP40	3 NO + 3 NC	TH410304							
	Panel cut-out 16.2 mm (B)	MCJ0	Momentary	24 × 24 mm	IP40	None	TH402004						
		MCJ1	Momentary	24 × 24 mm	IP40	1NO + 1NC	TH402104						
MCJ2		Momentary	24 × 24 mm	IP40	2 NO + 2 NC	TH402204							
MCJ3		Momentary	24 × 24 mm	IP40	3 NO + 3 NC	TH402304							
LCJ0		Latching	24 × 24 mm	IP40	None	TH412004							
LCJ1		Latching	24 × 24 mm	IP40	1NO + 1NC	TH412104							
LCJ2		Latching	24 × 24 mm	IP40	2 NO + 2 NC	TH412204							
LCJ3		Latching	24 × 24 mm	IP40	3 NO + 3 NC	TH412304							
Panel cut-out 16.2 mm (C)		MEJ0	Momentary	Ø 24	IP40	None	TH404004						
	MEJ1	Momentary	Ø 24	IP40	1NO + 1NC	TH404104							
	MEJ2	Momentary	Ø 24	IP40	2 NO + 2 NC	TH404204							
	MEJ3	Momentary	Ø 24	IP40	3 NO + 3 NC	TH404304							
	LEJ0	Latching	Ø 24	IP40	None	TH414004							
	LEJ1	Latching	Ø 24	IP40	1NO + 1NC	TH414104							
	LEJ2	Latching	Ø 24	IP40	2 NO + 2 NC	TH414204							
	LEJ3	Latching	Ø 24	IP40	3 NO + 3 NC	TH414304							
	Panel cut-out 22.5 mm	MHJ0	Momentary	Ø 30	IP65	None	TH404019						
MHJ1		Momentary	Ø 30	IP65	1NO + 1NC	TH404119							
MHJ2		Momentary	Ø 30	IP65	2 NO + 2 NC	TH404219							
MHJ3		Momentary	Ø 30	IP65	3 NO + 3 NC	TH404319							
LHJ0		Latching	Ø 30	IP65	None	TH414019							
LHJ1		Latching	Ø 30	IP65	1NO + 1NC	TH414119							
LHJ2		Latching	Ø 30	IP65	2 NO + 2 NC	TH414219							
LHJ3		Latching	Ø 30	IP65	3 NO + 3 NC	TH414319							
Panel cut out 16.2 Actuator colour		A0	White	18 × 24 mm	Mushroom	THXXXXXX WHT							
	A1	Yellow	18 × 24 mm	Mushroom	THXXXXXX YEL								
	For Switch body (A)	A2	Green	18 × 24 mm	Mushroom	THXXXXXX GRN							
		A3	Blue	18 × 24 mm	Mushroom	THXXXXXX BLU							
		A4	Red	18 × 24 mm	Mushroom	THXXXXXX RED							
		A5	Black	18 × 24 mm	Mushroom	THXXXXXX BLK							
For Switch body style (B)	C0	White	24 × 24 mm	Mushroom	THXXXXXX WHT								
	C1	Yellow	24 × 24 mm	Mushroom	THXXXXXX YEL								
	C2	Green	24 × 24 mm	Mushroom	THXXXXXX GRN								
	C3	Blue	24 × 24 mm	Mushroom	THXXXXXX BLU								
	C4	Red	24 × 24 mm	Mushroom	THXXXXXX RED								
	C5	Black	24 × 24 mm	Mushroom	THXXXXXX BLK								
For Switch body style (C)	E0	White	Ø 24 mm	Mushroom	THXXXXXX WHT								
	E1	Yellow	Ø 24 mm	Mushroom	THXXXXXX YEL								
	E2	Green	Ø 24 mm	Mushroom	THXXXXXX GRN								
	E3	Blue	Ø 24 mm	Mushroom	THXXXXXX BLU								
	E4	Red	Ø 24 mm	Mushroom	THXXXXXX RED								
	E5	Black	Ø 24 mm	Mushroom	THXXXXXX BLK								
Panel cut-out 22.5	H0	White	Ø 30 mm	Mushroom	THXXXXXX WHT								
	H1	Yellow	Ø 30 mm	Mushroom	THXXXXXX YEL								
	H2	Green	Ø 30 mm	Mushroom	THXXXXXX GRN								
	H3	Blue	Ø 30 mm	Mushroom	THXXXXXX BLU								
	H4	Red	Ø 30 mm	Mushroom	THXXXXXX RED								
	H5	Black	Ø 30 mm	Mushroom	THXXXXXX BLK								
Housing Colour	N	Natural											
Illumination	X	Non illuminated											
Illumination colour	X	Non illuminated											

# TP8

## Panel Mounted

Push Button

### TP8

Panel cut-out (mm)  $\varnothing$  22.5

- Characteristics
- momentary
  - sealed IP67
  - round metal bezels
  - 1 NO + 1 NC, 2 NC, 2 NO
  - gold plated contact block

Rating 230 VAC, 6 A

Dimensions (mm)  $\varnothing$  25

Actuator ■ button and housing in different colours

Approvals none



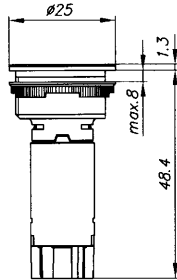
### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator style	Terminals (mm)	Electrical rating
TP82MDOA30	$\varnothing$ 22.5	Momentary	Non-illuminated Natural Aluminium	2.8 × 0.5 Faston	230 VAC 6 A

## Specifications

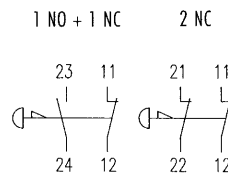
Mechanism	Momentary positive action with wiping contacts
Contact gap	>3 mm
Actuating force	Approximately 6.0N
Mounting	Central fixing with metal lock nut
Protection	IP67
Housing and actuator material	Anodised aluminium or stainless steel (upon request) Non-illuminated
Temperature range °C	-25°C to +55°C
Contact block	Supplied fitted
Contact block housing	Thermoplastic
Terminal material	Silver nickel with 0.4 µm gold plating
Contact resistance	<30mOhm
Number of contact blocks	1 NO + 1 NC or 2 NC or 2 NO (independent circuits)
Terminals	Faston - 2.8 mm × 0.5 mm, to DIN 46247

### Dimensions



Panel cut-out 22.5 ± 0.1 mm

### Circuit diagram



## Recommended maximum electrical ratings

Voltage (max) 230 VAC	Resistive load (A) 6.0	Inductive load (A)	Approval IEC 947-5-1, AC15 – recommended circuit breaker C6A
Electrical life	20,000 cycles at 10A, 24V, DC13 50,000 cycles at 5A, 24V, DC13 100,000 cycles at 5A, 12V, DC13 50,000 cycles at 6A, 250V, AC12 300,000 cycles at 2.5A, 250V, AC12		

Type coding key for standard products

Basic type	TP8					Example: TP8	2	MD0A	3	0
Panel cut-out	2	Ø 22.5 mm								
Switch body	MD0A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium natural; faston 2.8 mm × 0.5 mm				TH80750	X		00 X	
	MD1A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium yellow; faston 2.8 mm × 0.5 mm				TH80750	X		10 X	
	MD2A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium green; faston 2.8 mm × 0.5 mm				TH80750	X		20 X	
	MD4A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium red; faston 2.8 mm × 0.5 mm				TH80750	X		40 X	
	MD5A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium black; faston 2.8 mm × 0.5 mm				TH80750	X		50 X	
	MD8A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium dark blue; faston 2.8 mm × 0.5 mm				TH80750	X		80 X	
Contact (X)	3	Contact Block 1NO+1NC								
	4	Contact Block 2NC	←							
	5	Contact Block 2NO								
Actuator colour (X)	0	Neutral								
	1	Yellow								
	2	Green								
	4	Red	←							
	5	Black								
	8	Dark blue								

Note: Stainless steel versions available upon request.

# TP9

## Panel Mounted

Push Button

### TP9

Panel cut-out (mm)	Ø 16.2 or Ø 22.5
Characteristics	<ul style="list-style-type: none"><li>■ momentary short stroke switch</li><li>■ sealed IP65 or IP67</li><li>■ round metal bezels</li><li>■ NO</li><li>■ snap-in mounting option Ø 22.5 mm (IP65 only)</li></ul>
Rating	50 VAC/VDC, 50 mA
Dimensions (mm)	Ø 18 Ø 25
Actuator	■ button and housing in different colours
Approvals	none



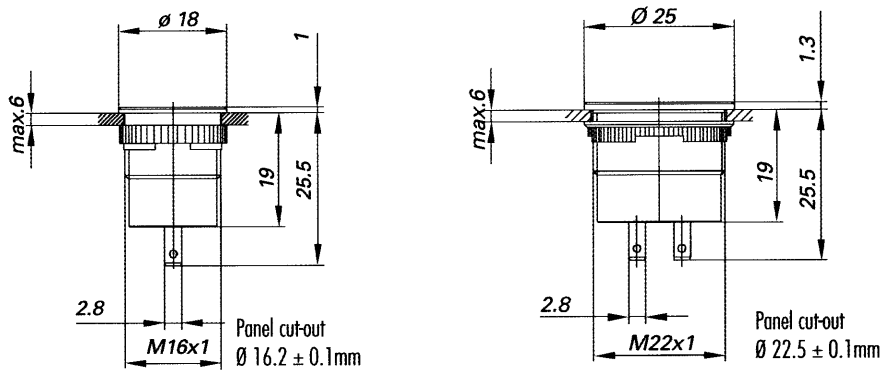
### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator size (mm)	Actuator style	Environmental protection	Terminals (mm)	Electrical rating
TP92MFOA000	Ø 22.5	Momentary 1NO	Ø 25	Non-illuminated natural aluminium	IP67	2.8 × 0.5 faston	50 VAC/VDC, 50 mA
TP92MFOA002	Ø 22.5	Momentary 1NO	Ø 25	Non-illuminated green anodised aluminium	IP67	2.8 × 0.5 faston	50 VAC/VDC, 50 mA
TP92MFOA004	Ø 22.5	Momentary 1NO	Ø 25	Non-illuminated red anodised aluminium	IP67	2.8 × 0.5 faston	50 VAC/VDC, 50 mA
TP92MFOA005	Ø 22.5	Momentary 1NO	Ø 25	Non-illuminated black anodised aluminium	IP67	2.8 × 0.5 faston	50 VAC/VDC, 50 mA

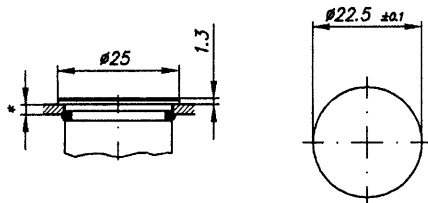
## Specifications

Mechanism	Momentary with 1 mm short-stroke action
Actuating force	3.5N maximum
Mounting	Central fixing with metal lock nut or front assembly snap-in
Protection	IP65 (snap-in) or IP67 (lock nut)
Housing and actuator material	Anodised aluminium or stainless steel (upon request)
Illumination	Non-illuminated versions available only
Temperature range °C	-30°C to +70°C
Mechanical life	>200,000 (18 mm switch), >500,000 (25 mm switch)
Number of contact blocks	1 NO
Terminals	Faston – 2.8 mm × 0.5 mm

### Dimensions Locknut mounting



### Snap-in mounting



## Recommended maximum electrical ratings

Voltage (max)	Resistive load (A)
50 VAC	50 mA

Type coding key for standard products

Basic type	TP9	Example: TP9	1	MD0A	00
Panel cut-out	1	Ø 16.2mm			
Switch body	MD0A	Ø 18 mm Momentary switch IP67; 1NO; Flush Aluminium natural; faston 2.8mm × 0.5mm		TH921000	XX3
	MD1A	Ø 18 mm Momentary switch IP67; 1NO; Flush Aluminium yellow; faston 2.8mm × 0.5mm		TH921001	XX3
	MD2A	Ø 18 mm Momentary switch IP67; 1NO; Flush Aluminium green; faston 2.8mm × 0.5mm		TH921002	XX3
	MD4A	Ø 18 mm Momentary switch IP67; 1NO; Flush Aluminium red; faston 2.8mm × 0.5mm		TH921004	XX3
	MD5A	Ø 18 mm Momentary switch IP67; 1NO; Flush Aluminium black; faston 2.8mm × 0.5mm		TH921005	XX3
	MD8A	Ø 18 mm Momentary switch IP67; 1NO; Flush Aluminium dark blue; faston 2.8mm × 0.5mm		TH921008	XX3
Actuator Colour (XX)	00	Neutral			
	01	Yellow			
	02	Green			
	04	Red	←		
	05	Black			
	08	Dark blue			

Stainless steel actuator and body styles, available upon request.



Type coding key for standard products

Basic type	TP9	Example: TP9	2	MF0A	0	00
Panel cut-out	2	Ø 22.5 mm				
Switch body	MF0A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium natural; faston 2.8mm × 0.5mm	TH920	X00	XX1	
	MF1A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium yellow; faston 2.8mm × 0.5mm	TH920	X01	XX1	
	MF2A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium green; faston 2.8mm × 0.5mm	TH920	X02	XX1	
	MF4A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium red; faston 2.8mm × 0.5mm	TH920	X04	XX1	
	MF5A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium black; faston 2.8mm × 0.5mm	TH920	X05	XX1	
	MF8A	Ø 25 mm Momentary switch IP67; 1NO; Flush Aluminium dark blue; faston 2.8mm × 0.5mm	TH920	X08	XX1	
Mounting (X)	0	Locknut (IP67)				
	4	Snap-in-mounting 1.5mm - 2.0 mm panel thickness IP65 only				
	5	Snap-in-mounting 2.0mm - 2.5 mm panel thickness IP65 only				
	6	Snap-in-mounting 2.5mm - 3.0 mm panel thickness IP65 only				
Actuator colour (XX)	00	Neutral				
	01	Yellow				
	02	Green				
	04	Red				
	05	Black				
	08	Dark blue				

Stainless steel actuator and body styles, available upon request.



# TP7

## Panel Mounted

Push Button

### TP7

Panel cut-out (mm) Ø 16.2, Ø 22.5, Ø 30.3, Ø 43.3

- Characteristics
- piezo technology
  - momentary
  - sealed IP68
  - with or without illumination, two colours
  - solid state output
  - NO

Rating 3 to 35 VAC/VDC, 200 mA

Dimensions (mm) Ø 18  
Ø 25  
Ø 36  
Ø 48

Actuator ■ housing in different colours

Approvals none



### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator size (mm)	Actuator style	Environmental protection	Terminals	Electrical rating
TP71MD1B04XX	Ø 16.2	Momentary 1NO	Ø 18	Non-illuminated, red anodised aluminium	IP68	Prewired	35 VAC/VDC max, 200 mA
TP71MD1B02XX	Ø 16.2	Momentary 1NO	Ø 18	Non-illuminated, green anodised aluminium	IP68	Prewired	35 VAC/VDC max, 200 mA
TP71MD1B05XX	Ø 16.2	Momentary 1NO	Ø 18	Non-illuminated, black anodised aluminium	IP68	Prewired	35 VAC/VDC max, 200 mA
TP71MD1B00XX	Ø 16.2	Momentary 1NO	Ø 18	Non-illuminated, natural aluminium	IP68	Prewired	35 VAC/VDC max, 200 mA
TP72MF1B00XX	Ø 22.5	Momentary 1NO	Ø 25	Non-illuminated, natural aluminium	IP68	Prewired	35 VAC/VDC max, 200 mA
TP72MG4B00C2	Ø 22.5	Momentary 1NO	Ø 25	Green illumination natural aluminium	IP68	Molex style 5 pin	35 VAC/VDC max, 200 mA
TP72MG2B00C4	Ø 22.5	Momentary 1NO	Ø 25	Red illumination natural aluminium	IP68	Molex style 5 pin	35 VAC/VDC max, 200 mA

## Specifications

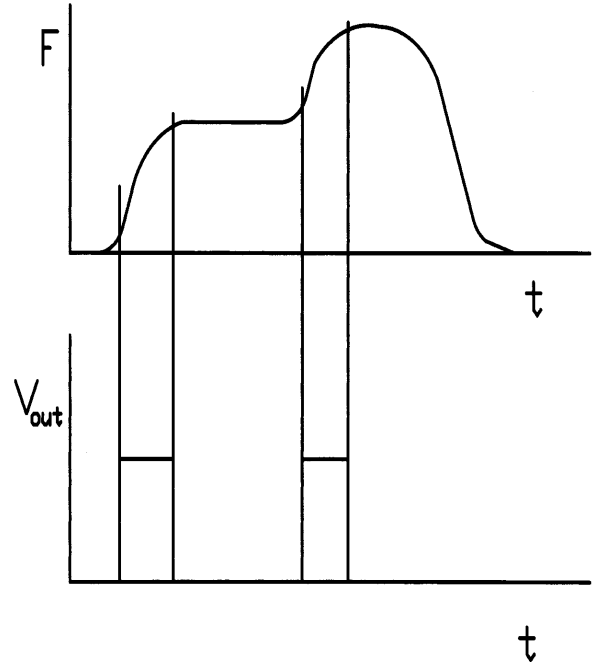
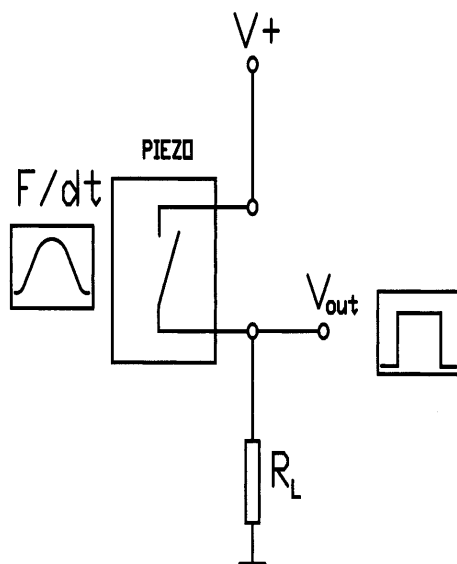
Mechanism	Piezo electronic, without auxilliary energy		
Actuating force	5N maximum at an actuating speed 500 to 1500 mm/s		
Closing impulse duration	10 to 1000 m/s - dependent on force and speed of actuation		
Mounting	Central fixing from the rear with metal lock nut		
Protection	IP68 (after installation)		
Housing and actuator material	Anodised aluminium and stainless steel		
Illumination	LED ( 18mm switch non-illuminated only)		
Temperature range °C	-40°C to +105°C (non-illuminated), -40°C to +85°C (illuminated)		
Life expectancy	>15 × 10 <sup>6</sup> cycles		
Contact resistance	<10 Ohm (on)		
Insulation resistance	>5M0hm (off)		
Terminals	Prewired; 2.8mm × 0.8mm faston; Molex-style 3,5 & 6 pin; AMP-style 4 pin		
Power consumption (illuminated types)	red or green:	12V IP = 40 mA	24V IF = 20 mA
	red/green:	12V IP = 2 × 20 mA	24V IF = 2 × 20 mA

## Technical information

The piezo sensor converts pressure into voltage signals. These analogue voltage signals are then processed within the switch to form switching signals, using field effect transistors (FET).

Due to the internal resistor, the circuit state is dependent upon actuating force and speed, means of operation and the discharge time of the R-C system. Standard digital or relay technology can be employed to create individual timed delay, flip-flop and power amplification circuits.

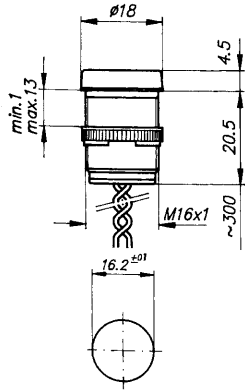
The circuit state diagram shows the approximate relationship between the force/time curve to the voltage circuit state:



## Recommended maximum electrical ratings

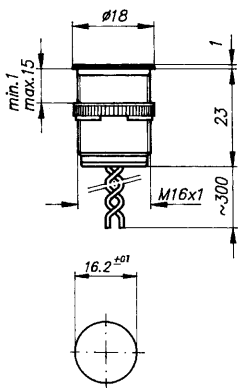
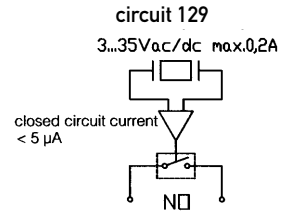
Voltage (max)	Resistive load (A)
3 to 35 VUC	0.2 A (0.7 pf)

Dimensions Non-illuminated

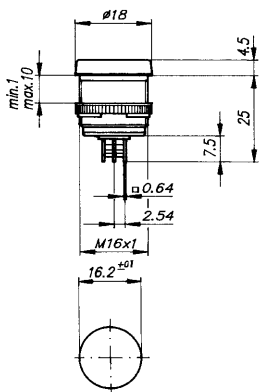
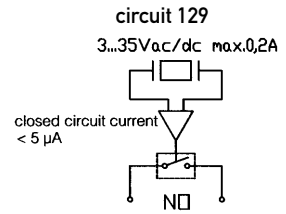


Ø 18, raised housing, prewired

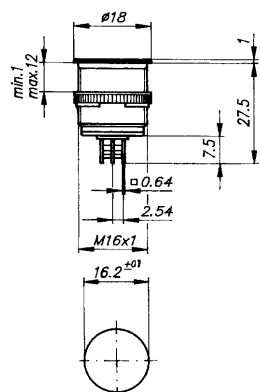
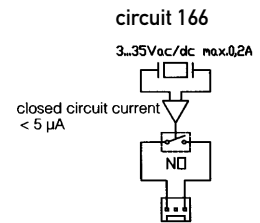
Circuit diagram



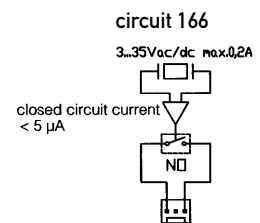
Ø 18, flush housing, prewired



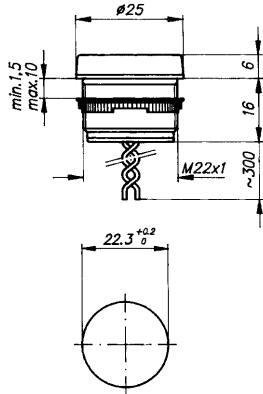
Ø 18, raised housing, Molex-style 3 pin



Ø 18, flush housing, Molex-style 3 pin

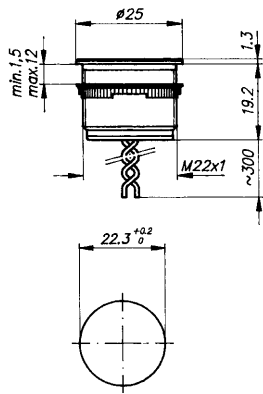
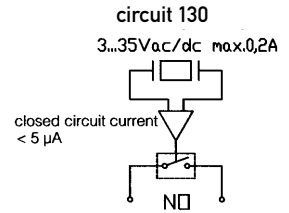


Dimensions Non-illuminated

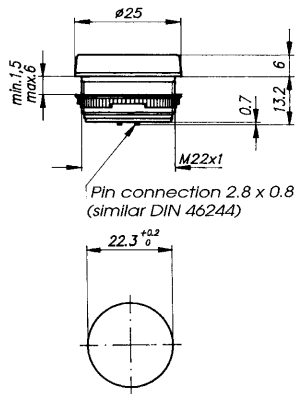
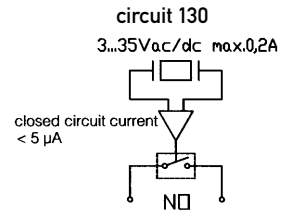


Ø 25, raised housing, prewired

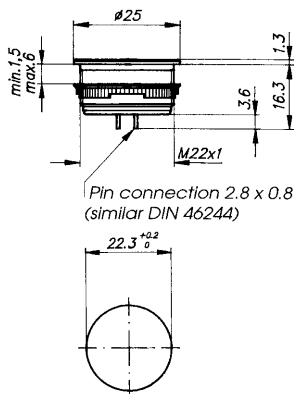
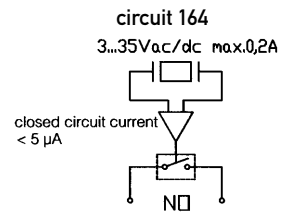
Circuit diagram



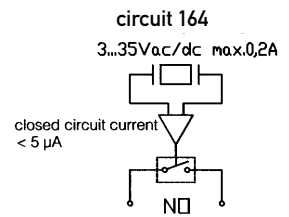
Ø 25, flush housing, prewired



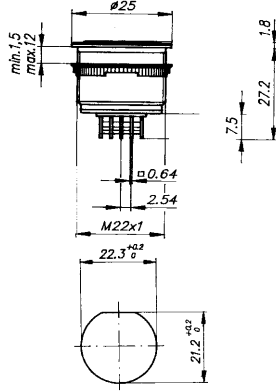
Ø 25, raised housing, solder connections 2.8 × 0.8



Ø 25, raised housing, solder connections 2.8 × 0.8

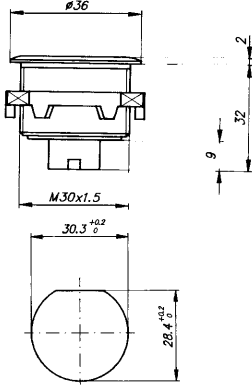
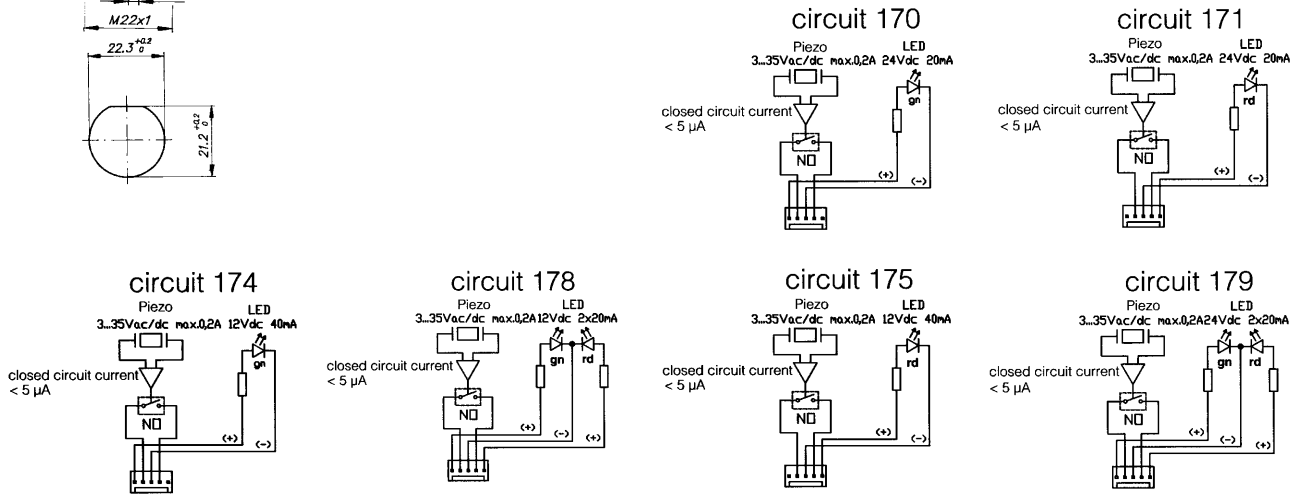


Dimensions Illuminated



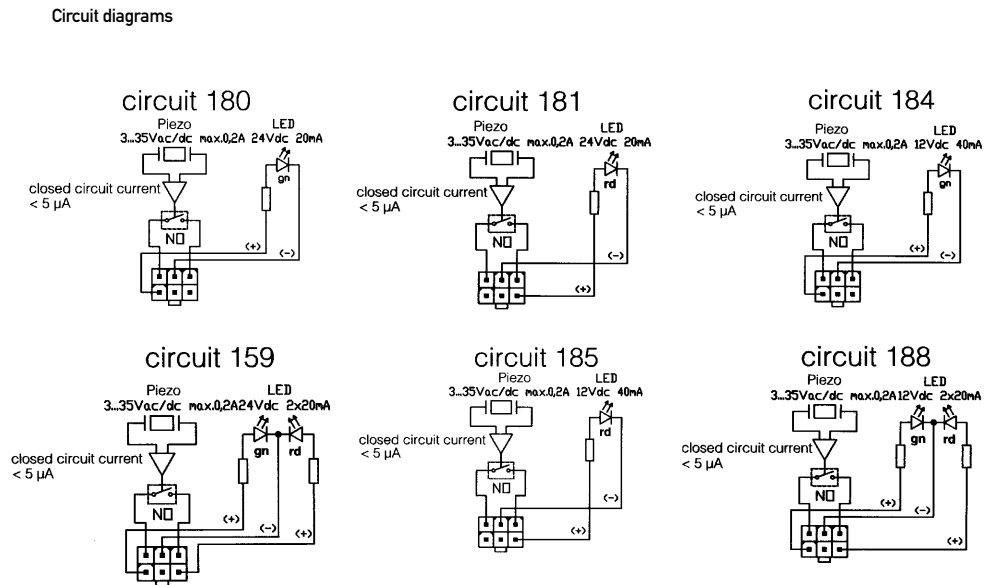
Ø 25. flush housing, Molex-style 5 pin

Circuit diagram

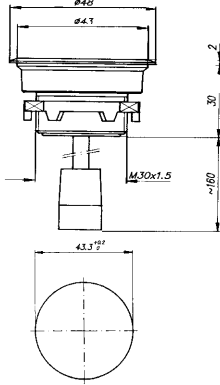


Ø 36. flush housing, Molex-style 6 pin

Circuit diagram



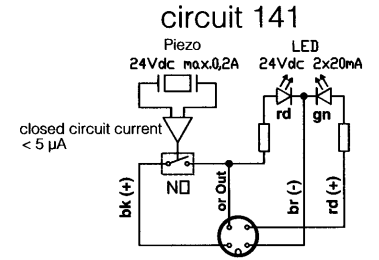
Dimensions Illuminated



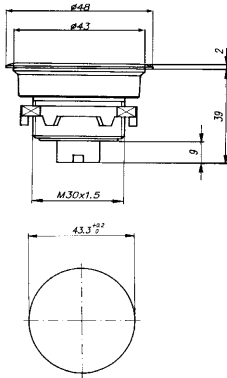
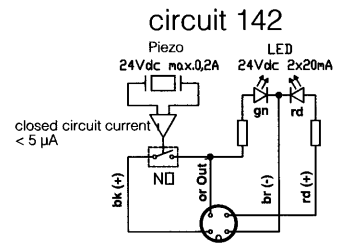
Ø 48, flush housing, wired with round connector  
AMP-style 4 pin

Internally wired visual indicator, red

Circuit diagram

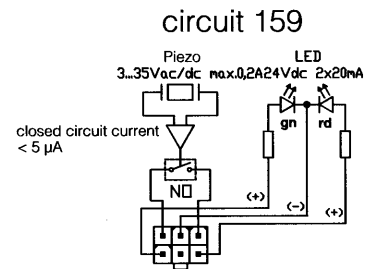
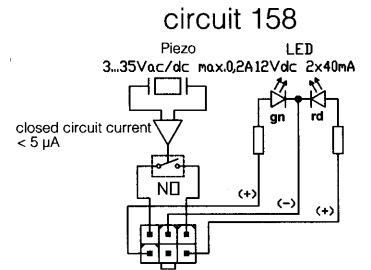


Internally wired visual indicator, green



Ø 48, flush housing, Molex-style 6 pin

Circuit diagram



Type coding key for standard products

Basic type		TP7						Example: TP7 1 MDIA 00 B 2				
Panel cut-out	1	Ø 16.2 mm (for Actuator Ø 18 mm only)										
	2	Ø 22.5 mm (for Actuator Ø 25 mm only)										
		Function	Actuator	Housing	Connector	Environmental protection	Part No. colour (XX)					
Switch body	MD1A	Momentary 1NO: 35V / 0.2A	Ø 18 mm	Raised Aluminium	Prewired	IP68	TH7020XX129					
	MD2A	Momentary 1NO: 35V / 0.2A	Ø 18 mm	Raised Aluminium	3 Pin MOLEX	IP68	TH7025XX166					
	MD1B	Momentary 1NO: 35V / 0.2A	Ø 18 mm	Flush Aluminium	Prewired	IP68	TH7021XX129					
	MD2B	Momentary 1NO: 35V / 0.2A	Ø 18 mm	Flush Aluminium	3 Pin MOLEX	IP68	TH7026XX166					
Non-illuminated	MF1A	Momentary 1NO: 35V / 0.2A	Ø 25 mm	Raised Aluminium	Prewired	IP68	TH7030XX130					
	MF2A	Momentary 1NC: 35V / 0.2A	Ø 25 mm	Raised Aluminium	Prewired	IP68	TH7030XX131					
	MF4A	Momentary 1NO: 35V / 0.2A	Ø 25 mm	Raised Aluminium	2.8 × 0.8 mm	IP68	TH7035XX164					
	MF1B	Momentary 1NO: 35V / 0.2A	Ø 25 mm	Flush Aluminium	Prewired	IP68	TH7031XX130					
	MF2B	Momentary 1NC: 35V / 0.2A	Ø 25 mm	Flush Aluminium	Prewired	IP68	TH7031XX131					
	MF4B	Momentary 1NO: 35V / 0.2A	Ø 25 mm	Flush Aluminium	2.8 × 0.8 mm	IP68	TH7036XX164					
	Illuminated	MG1B	Momentary 1NO: 35V / 0.2A 12V/40mA LED red	Ø 25 mm	Flush Aluminium	5 pin MOLEX	IP68	TH7055XX175				
		MG2B	Momentary 1NO: 35V / 0.2A 24V/20mA LED red	Ø 25 mm	Flush Aluminium	5 pin MOLEX	IP68	TH7055XX171				
MG3B		Momentary 1NO: 35V / 0.2A 12V/40mA LED green	Ø 25 mm	Flush Aluminium	5 pin MOLEX	IP68	TH7055XX174					
MG4B		Momentary 1NO: 35V / 0.2A 24V/20mA LED green	Ø 25 mm	Flush Aluminium	5 pin MOLEX	IP68	TH7055XX170					
MG5B		Momentary 1NO: 35V / 0.2A 12V/40mA LED red/green	Ø 25 mm	Flush Aluminium	5 pin MOLEX	IP68	TH7055XX178					
MG6B		Momentary 1NO: 35V / 0.2A 24V/20mA LED red/green	Ø 25 mm	Flush Aluminium	5 pin MOLEX	IP68	TH7055XX179					
Actuator colour (XX)	00	Natural	} Please select appropriate colour code reference to complete the switch part no. eg. TH702004129									
	01	Yellow										
	02	Green										
	04	Red										
	05	Black										
	08	Dark Blue										
Illumination	X	Non-illuminated										
	B	12V	(for illuminated switch bodies only)									
	C	24V	(for illuminated switch bodies only)									
Illumination colour	X	Non-illuminated										
	2	Green LED	(for illuminated switch bodies only)									
	4	Red LED	(for illuminated switch bodies only)									
	9	Red/Green LED	(for illuminated switch bodies only)									

Stainless steel versions, available upon request.

Type coding key for standard products

Basic type	TP7						Example: TP7	3	MH1B	00	B	4	
Panel cut-out	3	Ø 30.3 mm (for Actuator Ø 36 mm only)											
	4	Ø 43.3 mm (for Actuator Ø 48 mm only)											
		Function	Actuator	Housing	Connector	Environmental protection	Part No. colour (XX)						
Switch body Illuminated	MH1B	Momentary 1NO; 35V / 0.2 A 12V/40mA LED red	Ø 36 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7065XX185						
	MH2B	Momentary 1NO; 35V / 0.2 A 24V/20mA LED red	Ø 36 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7065XX181						
	MH3B	Momentary 1NO; 35V / 0.2 A 12V/40mA LED green	Ø 36 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7065XX184						
	MH4B	Momentary 1NO; 35V / 0.2 A 24V/20mA LED green	Ø 36 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7065XX180						
	MH5B	Momentary 1NO; 35V / 0.2 A 12V/2×20mA LED red/green	Ø 36 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7065XX188						
	MH6B	Momentary 1NO; 35V / 0.2 A 24V/2×20mA LED red/green	Ø 36 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7065XX159						
Illuminated	MJ1B	Momentary 1NO; 35V, 0.2 A 24V, 2×20 mA LED green/red	Ø 48 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7062XX159						
	MJ2B	Momentary 1NO; 35V, 0.2 A 12V, 2×40 mA LED green/red	Ø 48 mm	Flush Aluminium	6 pin MOLEX	IP68	TH7062XX158						
	MJ3B	Momentary 1NO; 24V, 0.2 A 24V, 2×20 mA LED red/green	Ø 48 mm	Flush Aluminium	4 pin AMP	IP68	TH7062XX141						
	MJ4B	Momentary 1NO; 24V, 0.2 A 24V, 2×20 mA LED green/red	Ø 48 mm	Flush Aluminium	4 pin AMP	IP68	TH7062XX142						
Actuator colour (XX)	00	Natural	}	Please select appropriate colour code reference to complete the switch part no. above eg. TH706502185									
	01	Yellow											
	02	Green											
	04	Red											
	05	Black											
	08	Dark Blue											
Illumination	B	12V											
	C	24 V)											
Illumination colour	2	Green LED											
	4	Red LED											
	9	Red/Green LED											

Stainless steel versions, available upon request.



# 3300

## Panel Mounted

Push Button

### 3300

- Characteristics
- momentary function
  - short travel 0.4 mm ca.
  - sealed IP67
  - vandal resistant
  - with or without illumination, two colours

Rating 12–24 VDC / 30 mA

Dimensions (mm) Ø 82

- Actuator
- anodised surface
  - plated surface
  - powder coated surface

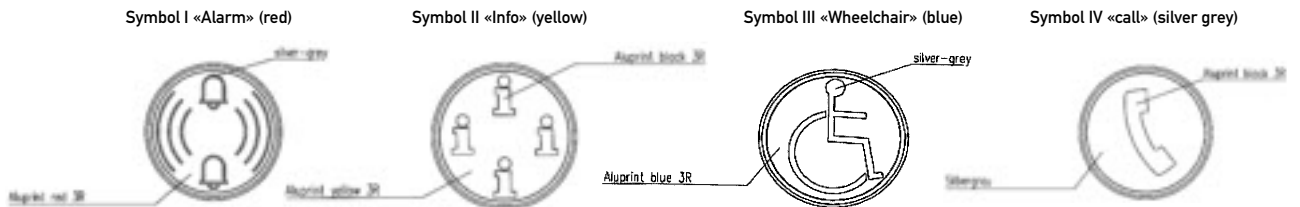
Approvals on request



### Popular products

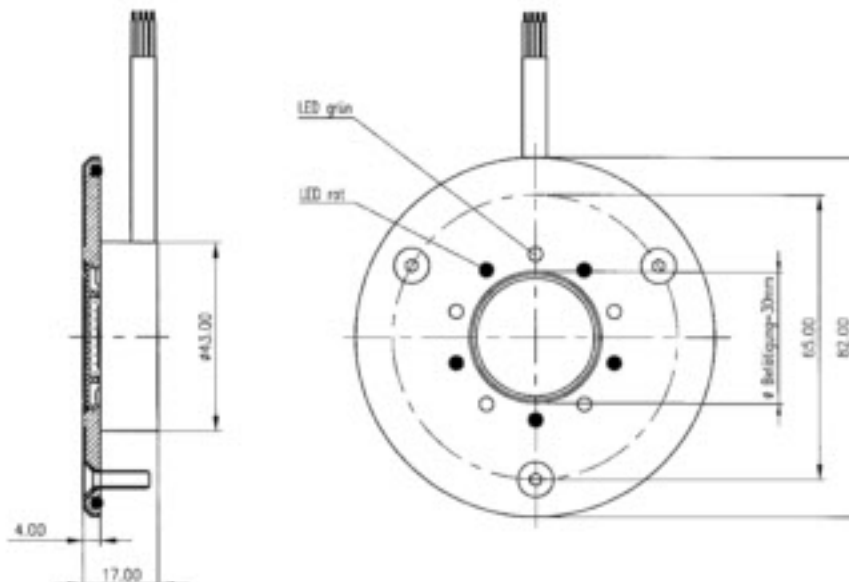
Ordering Reference	Function	Terminals	Symbol / Panel
3300-001	momentary	prewired	Alarm/red
3300-002	momentary	prewired	Info/yellow
3300-003	momentary	prewired	Wheelchair/blue
3300-004	momentary	prewired	Phone/silver grey

### Existent legends



other Symbol on request  
3300

### Dimensions



# TI2

## Panel Mounted

Indicators

### TI2

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- illuminated
  - sealed IP40, IP65 or IP67
  - wide range of bezels
  - midget grooved lamp/LED

Rating max. 60 VAC / VDC

Dimensions (mm)  $18 \times 24$   
 $18 \times 18$   
 $\varnothing 18$   
 $\varnothing 25$

Actuator ■ lenses in different shapes and colours

Approvals UL, CSA, VDE



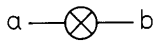
### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator style (mm)	Environmental Protection
TI21VAAF4CN	$\varnothing$ 16.2	Visual	$18 \times 24$	IP40
TI22VFAF4CN	$\varnothing$ 22.5	Visual	$\varnothing$ 25	IP65

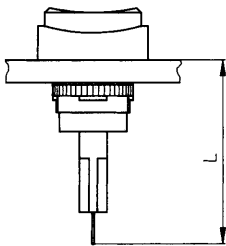
## Specifications

Mounting	Central fixing with metal lock nut
Protection	IP40, IP65, IP67
Bezel material	Thermoplastic or anodized aluminium alloy
Lens material	Polycarbonate - engravable
Illumination	T1 ¾ midget grooved lamps - incandescent lamps, LEDs, multi LEDs 60 V, 1.2 W maximum Lamp contact a = anode (+), b = cathode (-) Appropriate safety regulations should be respected when using the indicator light.
Temperature range °C	-25°C to +85°C
Terminals	Solder – suitable for wire diameter 1 × 1.00 mm <sup>2</sup> (braided), 2 × 0.75 mm (stranded) Faston – 2.8 mm × 0.5 mm
Vibration resistance	1.5 mm pp amplitude at 55 Hz

Circuit diagram



Dimensions



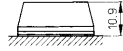
Length in mm	
plastic bezels	38 mm
countersunk mounting bezels	40 mm
aluminium bezels	48 mm
countersunk mounting	

Plastic bezel and lens heights in mm (switch off position)

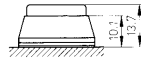
	18 × 24	18 × 18	Ø 18
exposed version IP40			
exposed version IP67			
panel cut-out 16.2 ± 0.1 mm			
concealed version IP40			

Dimensions Aluminium bezel  $\varnothing$  25, Lens heights in mm (switch off position)

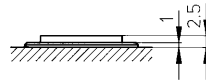
aluminium bezel  
without sealing gasket (IP40)



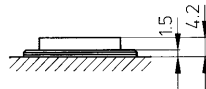
aluminium bezel  
with sealing gasket (IP65)



aluminium bezel  
countersunk mounting (IP40)



aluminium bezel  
countersunk mounting (IP67)



panel cut-out  $22.5 \pm 0.1$  mm

front panel thickness	plastic bezel 1	1.0 to 6.5 mm, 1.0 to 5.0 mm
	aluminium bezel	1.0 to 5.0 mm
	countersunk mounting	2.0 to 15.0 mm



Type coding key for standard products

Basic type	T12				Example: T12	1	VAA	F0	A	N
Panel cut-out	1				Ø 16.2 mm					
Switch body		Function	Actuator	Housing (plastic)	Part No.					
	VAA	Visual	18 × 24 mm	Exposed; IP40; faston	TH551008000					
	VAL	Visual	18 × 24 mm	Exposed; IP40; solder	TH551108000					
	VAB	Visual	18 × 24 mm	Concealed; IP40; faston	TH551002000					
	VAM	Visual	18 × 24 mm	Concealed; IP40; solder	TH551102000					
	VAD	Visual	18 × 24 mm	Exposed; IP67; faston	TH551015000					
	VAO	Visual	18 × 24 mm	Exposed; IP67; solder	TH551115000					
	VBA	Visual	18 × 18 mm	Exposed; IP40; faston	TH553008000					
	VBL	Visual	18 × 18 mm	Exposed; IP40; solder	TH553108000					
	VBB	Visual	18 × 18 mm	Concealed; IP40; faston	TH553002000					
	VBM	Visual	18 × 18 mm	Concealed; IP40; solder	TH553102000					
	VBC	Visual	18 × 18 mm	Exposed; IP67; faston	TH553015000					
	VBN	Visual	18 × 18 mm	Exposed; IP67; solder	TH553115000					
	VCA	Visual	Ø 18	Exposed; IP40; faston	TH555008000					
	VCL	Visual	Ø 18	Exposed; IP40; solder	TH555108000					
	VCB	Visual	Ø 18	Concealed; IP40; faston	TH555002000					
	VCM	Visual	Ø 18	Concealed; IP40; solder	TH555102000					
	VCC	Visual	Ø 18	Exposed; IP67; faston	TH555015000					
	VCN	Visual	Ø 18	Exposed; IP67; solder	TH555115000					
	Lens transparent				For body style	For body style	For body style			
				VAA/VAL (IP40)	VAB/VAM (IP40)	VAD/VAO (IP67)				
F0		White		TH461021000	TH461017000	TH561011000				
F1		Yellow		TH461121000	TH461117000	TH561111000				
F2		Green		TH461221000	TH461217000	TH561211000				
F3		Blue		TH461321000	TH461317000	TH561311000				
F4		Red		TH461421000	TH461417000	TH561411000				
F6		Orange		TH461621000	TH461617000	TH561611000				
				For body style	For body style	For body style				
				VBA/VBL (IP40)	VBB/VBM (IP40)	VBC/VBN (IP67)				
F0		White		TH463021000	TH463018000	TH563011000				
F1		Yellow		TH463121000	TH463118000	TH563111000				
F2		Green		TH463221000	TH463218000	TH563211000				
F3		Blue		TH463321000	TH463318000	TH563311000				
F4		Red		TH463421000	TH463418000	TH563411000				
F6		Orange		TH463621000	TH463618000	TH563611000				
				For body style	For body style	For body style				
				VCA/VCL (IP40)	VCB/VCM (IP40)	VCC/VCN (IP67)				
F0		White		TH465021000	TH465015000	TH565011000				
F1		Yellow		TH465121000	TH465115000	TH565111000				
F2		Green		TH465221000	TH465215000	TH565211000				
F3		Blue		TH465321000	TH465315000	TH565311000				
F4		Red		TH465421000	TH465415000	TH565411000				
F6		Orange		TH465621000	TH465615000	TH565611000				
Illumination	A	6V								
	B	12V								
	C	24V								
	F	48V								
Illumination colour	N	Incandescent lamp	6V, 200 mA	12V, 80 mA	24V, 50 mA	48V, 25 mA				
			TH590000000	TH590001000	TH590006000	TH590004000				
			6V AC/DC, 45 mA	12V AC/DC, 25 mA	24V AC/DC, 12.5 mA	48V AC/DC, 12.5 mA				
	1	Yellow LED	TH590231000	TH590234000	TH590237000	TH590240000				
	2	Green LED	TH590232000	TH590235000	TH590238000	TH590241000				
4	Red LED	TH590230000	TH590233000	TH590236000	TH590239000					

Acoustic versions available upon request

Type coding key for standard products

Basic type	T12				Example: T12	2	VFA	F0	A	N	
Panel cut-out	2				Ø 22.5 mm						
Switch body		Function	Actuator style	Housing	Part No.						
	VFA	Visual	Ø 25	Exposed plastic; IP65; faston	TH555020000						
	VFB	Visual	Ø 25	Exposed plastic; IP65; solder	TH555120000						
	VFC	Visual	Ø 25	Exposed aluminium; IP40/IP65*; faston	TH555018000						
	VFD	Visual	Ø 25	Exposed aluminium; IP40/IP65*; solder	TH555118000						
	VFE	Visual	Ø 25	Exposed aluminium; IP65 with silicon cap; faston	TH555033000						
	VFF	Visual	Ø 25	Exposed aluminium; IP65 with silicon cap; solder	TH555133000						
	VFG	Visual	Ø 25	Flush-aluminium; IP40; faston	TH555050000						
	VFH	Visual	Ø 25	Flush-aluminium; IP40; solder	TH555150000						
	VFJ	Visual	Ø 25	Flush-aluminium; IP67; faston	TH555051000						
VFK	Visual	Ø 25	Flush-aluminium; IP67; solder	TH555151000							
Lens transparent				For body style	VFC/VFD	With sealing ring					
				VFA/VFB (IP65)	VFG/VFH (IP40/IP65)	VFE/VFF (IP65)		VFJ/VFK (IP67)			
	F0	White		TH565024000	TH465015000	TH465001000		TH565025000			
	F1	Yellow		TH565124000	TH465115000	TH465101000		TH565125000			
	F2	Green		TH565224000	TH465215000	TH465201000		TH565225000			
	F3	Blue		TH565324000	TH465315000	TH465301000		TH565325000			
	F4	Red		TH565424000	TH465415000	TH465401000		TH565425000			
F6	Orange		TH565624000	TH465615000	TH465601000		TH565625000				
Illumination	A	6V									
	B	12V									
	C	24V									
	F	48V									
Illumination colour	N	Incandescent lamp		6V, 200 mA	12V, 80 mA	24V, 50 mA	48V, 25 mA				
				TH590000000	TH590001000	TH590006000	TH590004000				
				6V AC/DC, 45 mA	12V AC/DC, 25 mA	24V AC/DC, 12.5 mA	48V AC/DC, 12.5 mA				
	1	Yellow LED		TH590231000	TH590234000	TH590237000	TH590240000				
	2	Green LED		TH590232000	TH590235000	TH590238000	TH590241000				
4	Red LED		TH590230000	TH590233000	TH590236000	TH590239000					

Acoustic versions available upon request

# TI5

## Panel Mounted

### Indicators

#### TI5

Panel cut-out (mm)	Ø 16.2 or Ø 22.5
Characteristics	<ul style="list-style-type: none"><li>■ illuminated</li><li>■ sealed IP40 or IP65</li><li>■ wide range of bezels</li><li>■ midget grooved lamp/LED</li></ul>
Rating	max. 60 VAC/VDC
Dimensions (mm)	18 × 24 18 × 18 Ø 18 Ø 25
Actuator	■ lenses in different shapes and colours
Approvals	UL, CSA, VDE



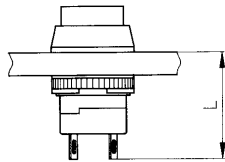
### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator style (mm)	Environmental Protection
TI51VALA4CN	Ø 16.2	Visual	18 × 24	IP40
TI52VFSF4CN	Ø 22.5	Visual	Ø 25	IP65

## Specifications

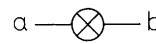
Mounting	Central fixing with metal lock nut
Protection	IP40, IP65
Bezel material	Thermoplastic or anodized aluminium alloy
Lens material	Polycarbonate – engravable
Illumination	T1 ¾ midget grooved lamps – incandescent lamps, LEDs, multi LEDs 60 V, 1.2 W maximum Lamp contact a = anode (+), b = cathode (-) Appropriate safety regulations should be respected when using the indicator light.
Temperature range °C	-25°C to +85°C
Terminal material	Silver alloy with 2 µm silver plating, 4 µm gold plating
Terminals	Patented flexible solder - suitable for wire diameter 2 × 1.00 mm <sup>2</sup> (braided), 4 × 0.75 mm (stranded)
Vibration resistance	1.5 mm pp amplitude at 55 Hz

Dimensions

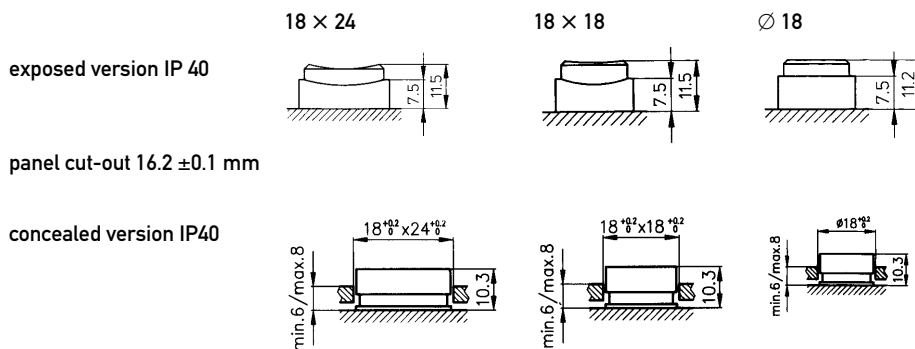


Length in mm	
plastic bezels	23.5
countersunk mounting bezels	22.5
aluminium bezels	32.0
countersunk mounting	

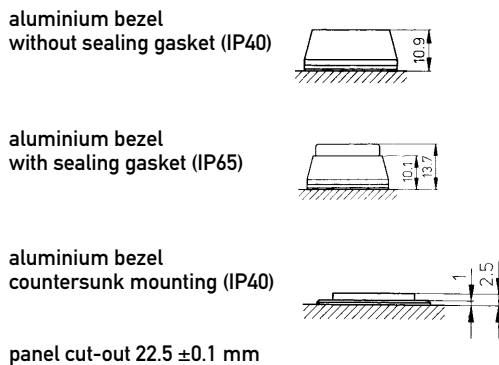
Circuit diagram



Plastic bezel and lens heights in mm (switch off position)



Aluminium bezel Ø 25 and lens height in mm (switch off position)



front panel thickness	plastic bezel (Ø 18 mm)	1.0 to 5.5 mm
	aluminium bezel (Ø 25 mm)	1.0 to 5.0 mm
	countersunk mounting (Ø 25 mm)	2.0 to 15.0 mm



Type coding key for standard products

Basic type	T15					Example: T15					
Panel cut-out	1	Ø 16.2 mm					1	VAL	A0	A	N
Switch body (A)	VAL	Function	Actuator style	Housing (plastic)		Part No.					
	VAM	Visual	18 × 24 mm	Exposed; IP40; solder		TH550008000					
		Visual	18 × 24 mm	Concealed; IP40; solder		TH550037000					
	(B)	VBL	Visual	18 × 18 mm	Exposed; IP40; solder		TH552008000				
		VBM	Visual	18 × 18 mm	Concealed; IP40; solder		TH552037000				
	(C)	VDL	Visual	Ø 18 mm	Exposed; IP40; solder		TH554008000				
	VDM	Visual	Ø 18 mm	Concealed; IP40; solder		TH554037000					
Lens, transparent For Switch body style (A)	A0	White	Exposed 15 × 21 mm	Concealed 18 × 24 mm	Exposed TH461021000	Concealed TH461017000					
	A1	Yellow	15 × 21 mm	18 × 24 mm	TH461121000	TH461117000					
	A2	Green	15 × 21 mm	18 × 24 mm	TH461221000	TH461217000					
	A3	Blue	15 × 21 mm	18 × 24 mm	TH461321000	TH461317000					
	A4	Red	15 × 21 mm	18 × 24 mm	TH461421000	TH461417000					
	A6	Orange	15 × 21 mm	18 × 24 mm	TH461621000	TH461617000					
For Switch body style (B)	B0	White	15 × 15 mm	18 × 18 mm	TH463021000	TH463018000					
	B1	Yellow	15 × 15 mm	18 × 18 mm	TH463121000	TH463118000					
	B2	Green	15 × 15 mm	18 × 18 mm	TH463221000	TH463218000					
	B3	Blue	15 × 15 mm	18 × 18 mm	TH463321000	TH463318000					
	B4	Red	15 × 15 mm	18 × 18 mm	TH463421000	TH463418000					
	B6	Orange	15 × 15 mm	18 × 18 mm	TH463621000	TH463618000					
For Switch body style (C)	D0	White	Ø 15 mm	Ø 18 mm	TH465021000	TH465015000					
	D1	Yellow	Ø 15 mm	Ø 18 mm	TH465121000	TH465115000					
	D2	Green	Ø 15 mm	Ø 18 mm	TH465221000	TH465215000					
	D3	Blue	Ø 15 mm	Ø 18 mm	TH465321000	TH465315000					
	D4	Red	Ø 15 mm	Ø 18 mm	TH465421000	TH465415000					
	D6	Orange	Ø 15 mm	Ø 18 mm	TH465621000	TH465615000					
Illumination	X	Non illuminated									
	A	6V									
	B	12V									
	C	24V									
	F	48V									
Illumination colour	X	Non illuminated									
	N	Incandescent lamp	6V, 200 mA		12V, 80 mA		24V, 50 mA		48V, 25 mA		
			TH590000000		TH590001000		TH590006000		TH590004000		
			6V AC/DC, 45 mA		12V AC/DC, 25 mA		24V AC/DC, 12.5 mA		48V AC/DC, 12.5 mA		
	1	Yellow LED	TH590231000		TH590234000		TH590237000		TH590240000		
	2	Green LED	TH590232000		TH590235000		TH590238000		TH590241000		
4	Red LED	TH590230000		TH590233000		TH590236000		TH590239000			

Acoustic versions available upon request

Type coding key for standard products

Basic type	T15					Example: T15					2	VFP	F0	A	N
Panel cut-out	2					Ø 22.5 mm									
Switch body	VFP	Visual	Function Ø 25 mm	Actuator style Exposed aluminium; IP40; solder	Housing (Aluminium)	Part No. TH554018000									
	VFQ	Visual	Ø 25 mm	Exposed aluminium; IP65; solder		TH554018000									
	VFR	Visual	Ø 25 mm	Exposed aluminium; IP65* with silicon cap; solder		TH554033000									
	VFS	Visual	Ø 25 mm	Flush-aluminium; IP40; solder		TH554050000									
Lens transparent Only for Visual Indicators	F0	White	Ø 18	Exposed IP40/IP65 Flush IP40		Exposed IP65 with sealing ring									
	F1	Yellow	Ø 18	TH465015000		TH465001000									
	F2	Green	Ø 18	TH465115000		TH465101000									
	F3	Blue	Ø 18	TH465215000		TH465201000									
	F4	Red	Ø 18	TH465315000		TH465301000									
	F6	Orange	Ø 18	TH465415000		TH465401000									
Illumination	X	Non illuminated													
	A	6V													
	B	12V													
	C	24V													
	F	48V													
Illumination colour	X	Non illuminated													
	N	Incandescent lamp	6V, 200 mA TH590000000		12V, 80 mA TH590001000		24V, 50 mA TH590006000		48V, 25 mA TH590004000						
	1	Yellow LED	6V AC/DC, 45 mA TH590231000		12V AC/DC, 25 mA TH590234000		24V AC/DC, 12.5 mA TH590237000		48V AC/DC, 12.5 mA TH590240000						
	2	Green LED	TH590232000		TH590235000		TH590238000		TH590241000						
	4	Red LED	TH590230000		TH590233000		TH590236000		TH590239000						

Acoustic versions available upon request

# T19

## Panel Mounted

---

Indicators

### T19

Panel cut-out (mm) Ø 22.5

- Characteristics
- illuminated
  - sealed IP67
  - round metal bezels
  - red LED
  - green LED
  - red-green LED

Rating 24 VDC 20 mA

Dimensions (mm) Ø 25

Actuator ■ aluminium housing in different colours

Approvals none

---



### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator style (mm)	Environmental Protection
T192VFOA500	Ø 22.5	Visual	Ø 25	IP67

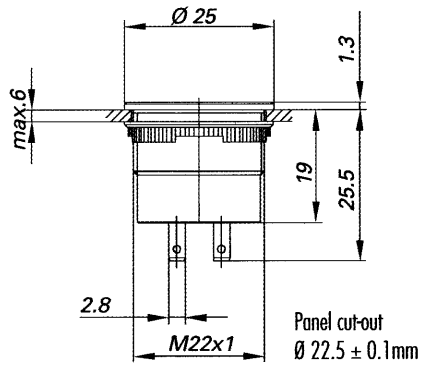
---



## Specifications

Mounting	Central fixing with metal lock nut
Protection	IP67
Housing and actuator material	Anodised aluminium or stainless steel (upon request)
Temperature range °C	-30°C to +70°C
Terminals	Faston - 2.8mm × 0.5mm

Dimensions



Type coding key for standard products

Basic type	T19			Example: T19	2	VF0A	504
Panel cut-out	2	Ø 22.5 mm					
Switch body	VF0A	Ø 25 mm Visual Indicator IP67; 1NO; Flush Aluminium natural; faston 2.8 mm × 0.5 mm				TH920000	XXX
	VF1A	Ø 25 mm Visual Indicator IP67; 1NO; Flush Aluminium yellow; faston 2.8 mm × 0.5 mm				TH920001	XXX
	VF2A	Ø 25 mm Visual Indicator IP67; 1NO; Flush Aluminium green; faston 2.8 mm × 0.5 mm				TH920002	XXX
	VF4A	Ø 25 mm Visual Indicator IP67; 1NO; Flush Aluminium red; faston 2.8 mm × 0.5 mm				TH920004	XXX
	VF5A	Ø 25 mm Visual Indicator IP67; 1NO; Flush Aluminium black; faston 2.8 mm × 0.5 mm				TH920005	XXX
	VF8A	Ø 25 mm Visual Indicator IP67; 1NO; Flush Aluminium dark blue; faston 2.8 mm × 0.5 mm				TH920008	XXX
Illumination (XXX)	504	Red LED: 24 VDC, 20 mA					
	502	Green LED: 24 VDC, 20 mA	←				
	500	Red/Green LED: 24 VDC, 20 mA					

Stainless steel versions available upon request.

# TE8

## Panel Mounted

Emergency Stop

### TE8

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- meets EN418 directives ( $\varnothing$  27 mm only)
  - sealed IP66 or IP67
  - rotary, pull or key reset
  - yellow disk bezel (optional)
  - 1NO + 1 NC or 2 NC

Rating 250 VAC, 6 A

Dimensions (mm)  $\varnothing$  27  
 $\varnothing$  40

- Actuator
- red mushroom cap ( $\varnothing$  27 mm)
  - reset by KABA key ( $\varnothing$  40 mm)

Approvals IEC 947-5-1/947-5-5 ( $\varnothing$  27 mm only)



### Popular products

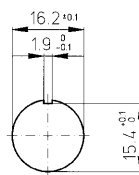
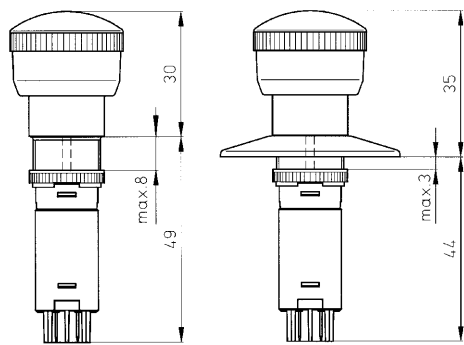
Ordering Reference	Panel cut-out (mm)	Function	Actuator style (mm)	Environmental protection	Terminals (mm)	Electrical rating
TE82KJB1XX	$\varnothing$ 22.5	Key release 1NO + 1NC	$\varnothing$ 40	IP40	2.8 × 0.5 faston	250 VAC, 6A
TE81RGP2A1	$\varnothing$ 16.2	Rotary release 2NC	$\varnothing$ 27	IP67	2.8 × 0.5 faston	250 VAC, 6A

## Specifications

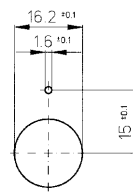
Mechanism	Momentary positive action with wiping contacts
Contact gap	>3 mm
Actuating force	Approximately 25 N
Mounting	Central fixing with metal lock nut (E switch) and Anti-rotation device on key (reset switch)
Protection	IP67
Bezel material	Thermoplastic or nickel-plated brass
Lens material	Polycarbonate
Illumination	Non-illuminated
Temperature range °C	-25°C to +55°C
Contact block	Supplied fitted
Contact block housing	Thermoplastic
Terminal material	Silver nickel with 0.4 µm gold plating
Contact resistance	<30 mOhm
Number of contact blocks	1 NO + 1 NC or 2 NC – independent circuits
Terminals	Faston - 2.8 mm × 0.5 mm, to DIN 46247

### Dimensions Emergency stop switches according to EN 418 IP66/IP67

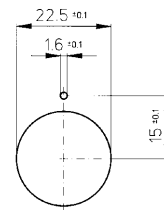
### Circuit diagram



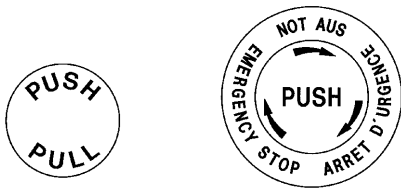
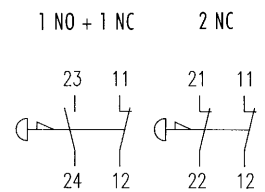
for back-ground decal  
for panel cut-out  
Ø 16.2 mm



for back-ground disc  
for panel cut-out  
Ø 16.2 mm



for adapter set  
for panel cut-out  
Ø 16.2 mm



mushroom cap × 27 mm, red  
disc bezel, yellow plastic, × 43 mm

## Recommended maximum electrical ratings

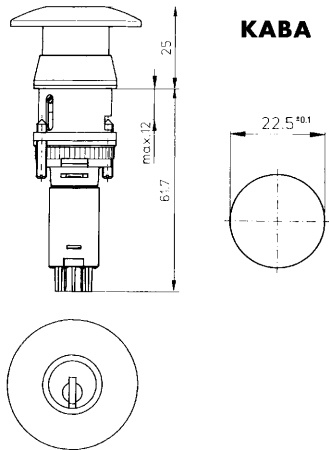
Voltage (max) 230 VAC	Resistive load (A) 6.0	Inductive load (A)	Approval IEC 947-5-1, AC15 - recommended circuit breaker C6A
--------------------------	---------------------------	--------------------	---

Electrical life	20,000 cycles at 10A, 24V, DC13 50,000 cycles at 5A, 24V, DC13 100,000 cycles at 5A, 12V, DC13 50,000 cycles at 6A, 250V, AC12 300,000 cycles at 2.5A, 250V, AC12
-----------------	---

## TE8

---

Dimensions Mushroom switches with key reset IP40



mushroom cap × 40 mm, red  
bezel × 29 mm

These switches can be integrated in security key code plans. The following security systems are available at a surcharge:  
KABA 8, KABA 20, KABA STAR. Extra registered keys are only available from the cylinder manufacturer.

---

	model with KABA 8-cylinder standard key code 317 000
Cylinder no. for key code plans	1063 B

---



## Type coding key for standard products

Basic type	TE8				Example: TE8	1	KJB1	A1
Panel cut-out	1	Ø 16.2 mm for E-Stop with rotary and pull reset						
	2	Ø 22.5 mm only for E-Stop with key release						
Switch body	Function	Actuator style	Contact block	Part No.				
KJB1	E-Stop with key reset; 1NO + 1NC	Ø 40 mm red; IP40; no print	1NO+1NC; 2.8 × 0.5mm	TH885503100				
KJB2	E-Stop with key reset; 2NC	Ø 40 mm red; IP40; no print	2NC; 2.8 × 0.5mm	TH885504100				
PGP1	E-Stop with pull reset; conforms to EN 418	Ø 27 mm red; IP67; printed	1NO+1NC; 2.8 × 0.5mm	TH881203000				
PGP2	E-Stop with pull reset; conforms to EN 418	Ø 27 mm red; IP67; printed	2NC; 2.8 × 0.5mm	TH881204000				
RGP1	E-Stop with rotary reset; conforms to EN 418	Ø 27 mm red; IP67; printed	1NO+1NC; 2.8 × 0.5mm	TH880203000				
RGP2	E-Stop with rotary reset; conforms to EN 418	Ø 27 mm red; IP67; printed	2NC; 2.8 × 0.5mm	TH880204000				
Disk bezel	XX	Not available for key reset version						
	A1	Yellow plastic disk Ø 43 mm with printing	For 16.2mm panel cut out	TH893002000				
	B1	Yellow plastic disk Ø 43 mm without printing	For 16.2mm panel cut out	TH893003000				
	C1	Yellow self adhesive label Ø 43 mm with printing	For 16.2mm panel cut out	TH893011000				
	D1	Yellow self adhesive label Ø 43 mm without printing	For 16.2mm panel cut out	TH893010000				
	E1	Yellow plastic adapterset Ø 43 mm with printing	For 22.5mm panel cut out	TH893000000				
	F1	Yellow plastic adapterset Ø 43 mm without printing	For 22.5mm panel cut out	TH893001000				

# TK2

## Panel Mounted

Keyswitch

### TK2

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- 2 or 3 position
  - sealed IP40 or IP65
  - plastic or aluminium bezels
  - wide range of bezels
  - NO, NC
  - gold plated, single or double pole, contact blocks
  - key trapping options

Rating 250 VAC, 5 A

Dimensions (mm)  $18 \times 24$   
 $18 \times 18$   
 $\varnothing 18$   
 $\varnothing 25$

Actuator ■ key-KABA MICRO

Approvals UL, CSA, VDE



### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator style (mm)	Environmental protection	Terminals (mm)	Electrical rating
TK21B2A001C1C1A	$\varnothing$ 16.2	2 Position Kaba Micro key	$18 \times 24$	IP40	$2.8 \times 0.5$ faston	250 VAC, 5A
TK22B2E001C1C1E	$\varnothing$ 22.5	2 Position Kaba Micro key	$\varnothing$ 25	IP65	$2.8 \times 0.5$ faston	250 VAC, 5A

## Specifications

Mechanism	Key actuated
Mounting	Central fixing with metal lock nut
Protection	IP40 or IP65
Bezel material	Thermoplastic or anodized aluminium alloy
Temperature range °C	-25°C to +85°C
Mechanical life	10 <sup>6</sup> cycles
Contact block	Slide-on assembly by the user
Contact block housing	Self-extinguishing duroplastic (UL 94 V0)
Terminal material	Silver alloy with 0.2 µm silver plating plus, 0.4 µm gold plating
Contact resistance	<30 mOhm
Number of contact blocks	User configurable NO or NC types up to a maximum of 2 double contact blocks
Terminals	Patented flexible solder – suitable for wire diameter 1 × 1.00 mm <sup>2</sup> (braided), 2 × 0.75 mm (stranded) Faston – 2.8mm × 0.5mm
Vibration resistance	1.5 mm pp amplitude at 55 Hz

## Cylinder locks

### KABA MICRO

#### Compact format

Key code EB 0001 (standard)

Key codes EB 0002 - EB 0020 (upon request)

Over 10'000 different key code variations

Key lock systems with master keys and central locks

2 keys per key switch (additional keys on order)

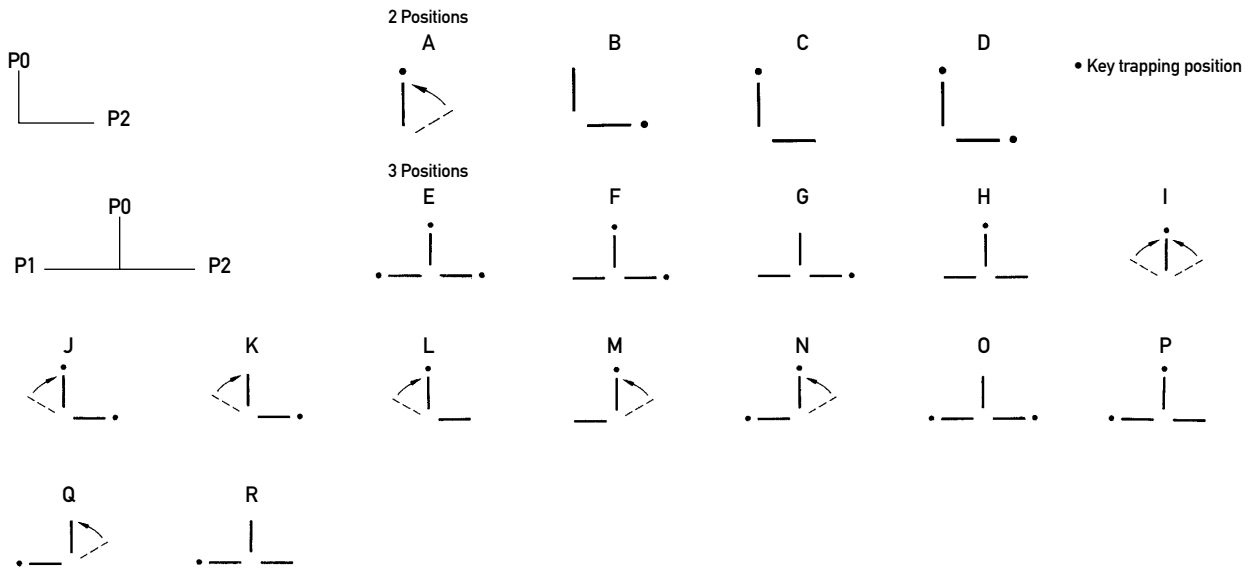
Destruction of the key or lock must be expected if the level 50 Ncm is exceeded.

## Recommended maximum electrical ratings

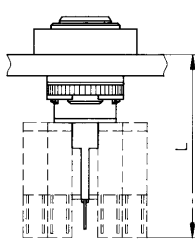
Voltage (max)	Resistive load (A)	Inductive load (A)	Approval
250 VAC	5.0 (0.7 pf)		UL, CSA, VDE - max. admissible circuit breaker C6A
12 VDC	5.0	3.0	General rating
24 VDC	4.0	2.0	General rating
36 VDC	3.0	1.7	General rating
48 VDC	2.0	1.5	General rating
60 VDC	1.5	1.2	General rating
125 VDC	0.5	0.3	General rating
250 VDC	0.3	0.2	General rating
Electrical life	50,000 cycles at 5A, 250 VAC, 0.7 pf		

# TK2

Key positions/  
function

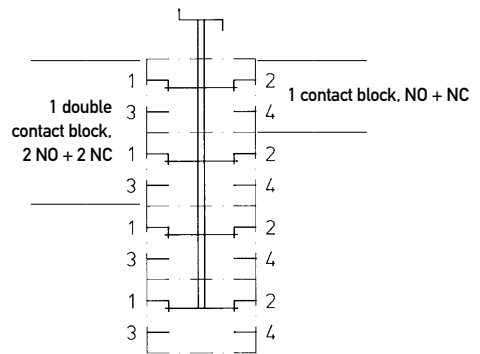


Dimensions



Length in mm (with contact block)  
plastic bezels 43  
aluminium bezels 42

Circuit diagram (2 double contact blocks)

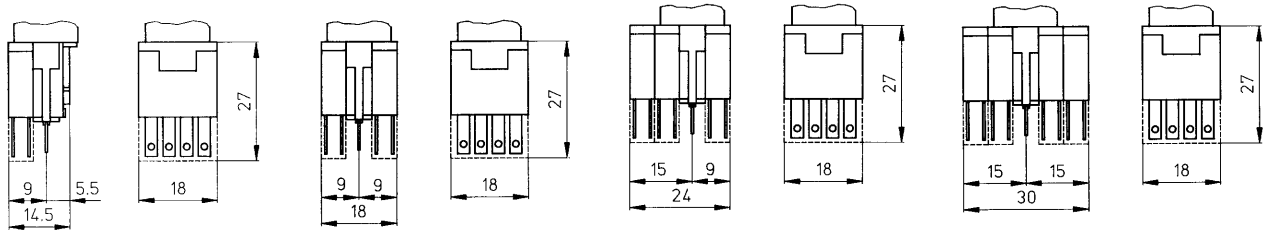


Contact blocks 1 contact block

2 contact blocks

1 contact block +  
1 double contact block

2 double contact blocks

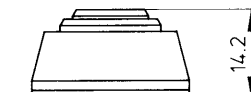
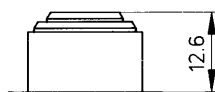
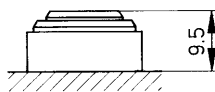


Cylinder height

plastic bezel IP40

plastic bezel IP65  
Panel cut-out  
16.2 mm ± 0.1 mm

aluminium bezel 2 position key  
Panel cut-out  
22.5 mm ± 0.1 mm



Panel cut-out 22.5 ± 0.1 mm

Front panel thickness

plastic bezel IP40  
plastic bezel IP65  
aluminium bezel

2.0 to 5.0 mm  
2.0 to 6.5 mm  
1.0 to 5.0 mm

## Type coding key for standard products

Basic type	TK2							Example: TK2 1 A2A 001 A1 A1 A				
Panel cut-out	1	Ø 16.2 mm for plastic bezel key switches										
	2	Ø 22.5 mm for Aluminium bezel key switches										
Key position / function	A2A	2 Positions; IP40; Kaba Micro; Key removable P0					Momentary P2	TH548032XXX				
16.2 mm cut-out	B2A	2 Positions; IP40; Kaba Micro; Key removable P2					Latching P2	TH548034XXX				
	C2A	2 Positions; IP40; Kaba Micro; Key removable P0					Latching P2	TH548036XXX				
	D2A	2 Positions; IP40; Kaba Micro; Key removable P0 + P2					Latching P2	TH548038XXX				
	A2C	2 Positions; IP65; Kaba Micro; Key removable P0					Momentary P2	TH548132XXX				
	B2C	2 Positions; IP65; Kaba Micro; Key removable P2					Latching P2	TH548134XXX				
	C2C	2 Positions; IP65; Kaba Micro; Key removable P0					Latching P2	TH548136XXX				
	D2C	2 Positions; IP65; Kaba Micro; Key removable P0 + P2					Latching P2	TH548138XXX				
22.5 mm cut-out	A2E	2 Positions; Ø 25 mm Aluminium bezel IP65; Kaba Micro; Key removable P0					Momentary P2	TH544040XXX				
	B2E	2 Positions; Ø 25 mm Aluminium bezel IP65; Kaba Micro; Key removable P2					Latching P2	TH544041XXX				
	C2E	2 Positions; Ø 25 mm Aluminium bezel IP65; Kaba Micro; Key removable P0					Latching P2	TH544042XXX				
	D2E	2 Positions; Ø 25 mm Aluminium bezel IP65; Kaba Micro; Key removable P0 + P2					Latching P2	TH544043XXX				
Key code number (XXX)	001	Kaba Micro Code EB0001	THXXXXXX	001	012	Kaba Micro Code EB0012	THXXXXXX	012				
	002	Kaba Micro Code EB0002	THXXXXXX	002	013	Kaba Micro Code EB0013	THXXXXXX	013				
	003	Kaba Micro Code EB0003	THXXXXXX	003	014	Kaba Micro Code EB0014	THXXXXXX	014				
	004	Kaba Micro Code EB0004	THXXXXXX	004	015	Kaba Micro Code EB0015	THXXXXXX	015				
	005	Kaba Micro Code EB0005	THXXXXXX	005	016	Kaba Micro Code EB0016	THXXXXXX	016				
	006	Kaba Micro Code EB0006	THXXXXXX	006	017	Kaba Micro Code EB0017	THXXXXXX	017				
	007	Kaba Micro Code EB0007	THXXXXXX	007	018	Kaba Micro Code EB0018	THXXXXXX	018				
	008	Kaba Micro Code EB0008	THXXXXXX	008	019	Kaba Micro Code EB0019	THXXXXXX	019				
	009	Kaba Micro Code EB0009	THXXXXXX	009	020	Kaba Micro Code EB0020	THXXXXXX	020				
	010	Kaba Micro Code EB0010	THXXXXXX	010	999	Mixed differs	THXXXXXX	999				
	011	Kaba Micro Code EB0011	THXXXXXX	011								
Contact block, gold Position 1	XX	No contact block	Terminals				Part No.					
	A1	NO	2.8 × 0.5 mm				TH593566020					
	A9	NO	Insulated faston				TH5935660020					
	A8	NO	Solder				TH593561020					
	B1	NC	2.8 × 0.5 mm				TH593566050					
	B9	NC	Insulated faston				TH5935660050					
	B8	NC	Solder				TH593561050					
	C1	1 NO + 1 NC	2.8 × 0.5 mm				TH593566000					
	C9	1 NO + 1 NC	Insulated faston				TH593566000					
	C8	1 NO + 1 NC	Solder				TH593561000					
	D1	2 NO + 2 NC	2.8 × 0.5 mm				TH593567000					
	D9	2 NO + 2 NC	Insulated faston				TH593563000					
	D8	2 NO + 2 NC	Solder				TH593564000					
Contact block, gold Position 2	XX	No contact block	Terminals				Part No.					
	A1	NO	2.8 × 0.5 mm				TH593566020					
	A9	NO	Insulated faston				TH5935660020					
	A8	NO	Solder				TH593561020					
	B1	NC	2.8 × 0.5 mm				TH593566050					
	B9	NC	Insulated faston				TH5935660050					
	B8	NC	Solder				TH593561050					
	C1	1 NO + 1 NC	2.8 × 0.5 mm				TH593566000					
	C9	1 NO + 1 NC	Insulated faston				TH593566000					
	C8	1 NO + 1 NC	Solder				TH593561000					
	D1	2 NO + 2 NC	2.8 × 0.5 mm				TH593567000					
	D9	2 NO + 2 NC	Insulated faston				TH593563000					
	D8	2 NO + 2 NC	Solder				TH593564000					
Bezel	A	18 mm × 24 mm plastic		IP40	TH493060000	IP65	TH593060000					
	B	18 mm × 18 mm plastic			TH493062000		TH593062000					
	D	Ø 18 mm plastic			TH493064000		TH593064000					
	E	Ø 25 mm aluminium (Factory fitted)										

The keyswitch cannot be installed without a bezel. The IP40 bezels are interchangeable before installation. Contact blocks will be supplied unassembled.

## Type coding key for standard products

Basic type		TK2		Example: TK2		1	E3A	001	A1	A1	A
Panel cut-out	1	Ø 16.2 mm									
Key position / function	E3A	3 Position; IP40; Kaba Micro; Key removable PO + P1 + P2		Latching P1 + P2	TH548050XXX						
	F3A	3 Position; IP40; Kaba Micro; Key removable PO + P2		Latching P1 + P2	TH548051XXX						
	G3A	3 Position; IP40; Kaba Micro; Key removable P2		Latching P1 + P2	TH548052XXX						
	H3A	3 Position; IP40; Kaba Micro; Key removable PO		Latching P1 + P2	TH548053XXX						
	I3A	3 Position; IP40; Kaba Micro; Key removable PO		Momentary P1 + P2	TH548054XXX						
	J3A	3 Position; IP40; Kaba Micro; Key removable PO + P2		Momentary P1 + Latching P2	TH548055XXX						
	K3A	3 Position; IP40; Kaba Micro; Key removable P2		Momentary P1 + Latching P2	TH548056XXX						
	L3A	3 Position; IP40; Kaba Micro; Key removable PO		Momentary P1 + Latching P2	TH548057XXX						
	M3A	3 Position; IP40; Kaba Micro; Key removable PO		Latching P1 + Momentary P2	TH548058XXX						
	N3A	3 Position; IP40; Kaba Micro; Key removable PO + P1		Latching P1 + Momentary P2	TH548059XXX						
	O3A	3 Position; IP40; Kaba Micro; Key removable P1 + P2		Latching P1 + P2	TH548060XXX						
	P3A	3 Position; IP40; Kaba Micro; Key removable PO + P1		Latching P1 + P2	TH548061XXX						
	Q3A	3 Position; IP40; Kaba Micro; Key removable P1		Latching P1 + Momentary P2	TH548062XXX						
	R3A	3 Position; IP40; Kaba Micro; Key removable P1		Latching P1 + P2	TH548063XXX						
	E3B	3 Position; IP65; Kaba Micro; Key removable PO + P1 + P2		Latching P1 + P2	TH548150XXX						
	F3B	3 Position; IP65; Kaba Micro; Key removable PO + P2		Latching P1 + P2	TH548151XXX						
	G3B	3 Position; IP65; Kaba Micro; Key removable P2		Latching P1 + P2	TH548152XXX						
	H3B	3 Position; IP65; Kaba Micro; Key removable PO		Latching P1 + P2	TH548153XXX						
	I3B	3 Position; IP65; Kaba Micro; Key removable PO		Momentary P1 + P2	TH548154XXX						
	J3B	3 Position; IP65; Kaba Micro; Key removable PO + P2		Momentary P1 + Latching P2	TH548155XXX						
	K3B	3 Position; IP65; Kaba Micro; Key removable P2		Momentary P1 + Latching P2	TH548156XXX						
	L3B	3 Position; IP65; Kaba Micro; Key removable PO		Momentary P1 + Latching P2	TH548157XXX						
	M3B	3 Position; IP65; Kaba Micro; Key removable PO		Latching P1 + Momentary P2	TH548158XXX						
	N3B	3 Position; IP65; Kaba Micro; Key removable PO + P1		Latching P1 + Momentary P2	TH548159XXX						
	O3B	3 Position; IP65; Kaba Micro; Key removable P1 + P2		Latching P1 + P2	TH548160XXX						
	P3B	3 Position; IP65; Kaba Micro; Key removable PO + P1		Latching P1 + P2	TH548161XXX						
	Q3B	3 Position; IP65; Kaba Micro; Key removable P1		Latching P1 + Momentary P2	TH548162XXX						
	R3B	3 Position; IP65; Kaba Micro; Key removable P1		Latching P1 + P2	TH548163XXX						
Key code number	001	Kaba Micro Code EB0001	THXXXXXX	001	012	Kaba Micro Code EB0012	THXXXXXX	012			
	002	Kaba Micro Code EB0002	THXXXXXX	002	013	Kaba Micro Code EB0013	THXXXXXX	013			
	003	Kaba Micro Code EB0003	THXXXXXX	003	014	Kaba Micro Code EB0014	THXXXXXX	014			
	004	Kaba Micro Code EB0004	THXXXXXX	004	015	Kaba Micro Code EB0015	THXXXXXX	015			
	005	Kaba Micro Code EB0005	THXXXXXX	005	016	Kaba Micro Code EB0016	THXXXXXX	016			
	006	Kaba Micro Code EB0006	THXXXXXX	006	017	Kaba Micro Code EB0017	THXXXXXX	017			
	007	Kaba Micro Code EB0007	THXXXXXX	007	018	Kaba Micro Code EB0018	THXXXXXX	018			
	008	Kaba Micro Code EB0008	THXXXXXX	008	019	Kaba Micro Code EB0019	THXXXXXX	019			
	009	Kaba Micro Code EB0009	THXXXXXX	009	020	Kaba Micro Code EB0020	THXXXXXX	020			
	010	Kaba Micro Code EB0010	THXXXXXX	010	999	Mixed differs	THXXXXXX	999			
	011	Kaba Micro Code EB0011	THXXXXXX	011							
Contact block, gold Position 1	XX	No contact block		Terminals	Part No.						
	A1	NO		2.8 × 0.5 mm	TH593566020						
	A9	NO		Insulated faston	TH593560020						
	A8	NO		Solder	TH593561020						
	B1	NC		2.8 × 0.5 mm	TH593566050						
	B9	NC		Insulated faston	TH593560050						
	B8	NC		Solder	TH593561050						
	C1	1 NO + 1 NC		2.8 × 0.5 mm	TH593566000						
	C9	1 NO + 1 NC		Insulated faston	TH593560000						
	C8	1 NO + 1 NC		Solder	TH593561000						
	D1	2 NO + 2 NC		2.8 × 0.5 mm	TH593567000						
	D9	2 NO + 2 NC		Insulated faston	TH593563000						
	D8	2 NO + 2 NC		Solder	TH593564000						
Contact block, gold Position 2	XX	No contact block		Terminals	Part No.						
	A1	NO		2.8 × 0.5 mm	TH593566020						
	A9	NO		Insulated faston	TH593560020						
	A8	NO		Solder	TH593561020						
	B1	NC		2.8 × 0.5 mm	TH593566050						
	B9	NC		Insulated faston	TH593560050						
	B8	NC		Solder	TH593561050						
	C1	1 NO + 1 NC		2.8 × 0.5 mm	TH593566000						
	C9	1 NO + 1 NC		Insulated faston	TH593560000						
	C8	1 NO + 1 NC		Solder	TH593561000						
	D1	2 NO + 2 NC		2.8 × 0.5 mm	TH593567000						
	D9	2 NO + 2 NC		Insulated faston	TH593563000						
	D8	2 NO + 2 NC		Solder	TH593564000						
Bezel	A	18 mm × 24 mm plastic		IP40	IP65						
	B	18 mm × 18 mm plastic		TH493060000	TH593060000						
	D	Ø 18 mm plastic		TH493062000	TH593062000						
				TH493064000	TH593064000						

The keyswitch cannot be installed without a bezel. The IP40 bezels are interchangeable before installation. Contact blocks will be supplied unassembled.

## Type coding key for standard products

Basic type	TK2			Example: TK2	2	E3C	001	A1	A1	E
Panel cut-out	2	Ø 22.5 mm								
Key position / function	E3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0 + P1 + P2	Latching P1 + P2	TH544050XXX						
	F3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0 + P2	Latching P1 + P2	TH544051XXX						
	G3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P2	Latching P1 + P2	TH544052XXX						
	H3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0	Latching P1 + P2	TH544053XXX						
	I3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0	Momentary P1 + P2	TH544054XXX						
	J3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0 + P2	Momentary P1 + Latching P2	TH544055XXX						
	K3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P2	Momentary P1 + Latching P2	TH544056XXX						
	L3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0	Momentary P1 + Latching P2	TH544057XXX						
	M3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0	Latching P1 + Momentary P2	TH544058XXX						
	N3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0 + P1	Latching P1 + Momentary P2	TH544059XXX						
	O3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P1 + P2	Latching P1 + P2	TH544060XXX						
	P3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P0 + P1	Latching P1 + P2	TH544061XXX						
	Q3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P1	Latching P1 + Momentary P2	TH544062XXX						
	R3C	3 Position; Ø 25 mm Alum. bezel IP65; Kaba Micro; Key removable P1	Latching P1 + P2	TH544063XXX						
Key code number (XXX)	001	Kaba Micro Code EB0001		THXXXXXX			001			
	002	Kaba Micro Code EB0002		THXXXXXX			002			
	003	Kaba Micro Code EB0003		THXXXXXX			003			
	004	Kaba Micro Code EB0004		THXXXXXX			004			
	005	Kaba Micro Code EB0005		THXXXXXX			005			
	006	Kaba Micro Code EB0006		THXXXXXX			006			
	007	Kaba Micro Code EB0007		THXXXXXX			007			
	008	Kaba Micro Code EB0008		THXXXXXX			008			
	009	Kaba Micro Code EB0009		THXXXXXX			009			
	010	Kaba Micro Code EB0010		THXXXXXX			010			
	011	Kaba Micro Code EB0011		THXXXXXX			011			
	012	Kaba Micro Code EB0012		THXXXXXX			012			
	013	Kaba Micro Code EB0013		THXXXXXX			013			
	014	Kaba Micro Code EB0014		THXXXXXX			014			
	015	Kaba Micro Code EB0015		THXXXXXX			015			
	016	Kaba Micro Code EB0016		THXXXXXX			016			
	017	Kaba Micro Code EB0017		THXXXXXX			017			
	018	Kaba Micro Code EB0018		THXXXXXX			018			
	019	Kaba Micro Code EB0019		THXXXXXX			019			
	020	Kaba Micro Code EB0020		THXXXXXX			020			
	999	Mixed differs		THXXXXXX			999			
Contact block, gold Position 1	XX	No contact block	Terminals	Part No.						
	A1	NO	2.8 × 0.5 mm	TH593566020						
	A9	NO	Insulated faston	TH593560020						
	A8	NO	Solder	TH593561020						
	B1	NC	2.8 × 0.5 mm	TH593566050						
	B9	NC	Insulated faston	TH593560050						
	B8	NC	Solder	TH593561050						
	C1	1 NO + 1 NC	2.8 × 0.5 mm	TH593566000						
	C9	1 NO + 1 NC	Insulated faston	TH593560000						
	C8	1 NO + 1 NC	Solder	TH593561000						
	D1	2 NO + 2 NC	2.8 × 0.5 mm	TH593567000						
	D9	2 NO + 2 NC	Insulated faston	TH593563000						
	D8	2 NO + 2 NC	Solder	TH593564000						
Contact block, gold Position 2	XX	No contact block	Terminals	Part No.						
	A1	NO	2.8 × 0.5 mm	TH593566020						
	A9	NO	Insulated faston	TH593560020						
	A8	NO	Solder	TH593561020						
	B1	NC	2.8 × 0.5 mm	TH593566050						
	B9	NC	Insulated faston	TH593560050						
	B8	NC	Solder	TH593561050						
	C1	1 NO + 1 NC	2.8 × 0.5 mm	TH593566000						
	C9	1 NO + 1 NC	Insulated faston	TH593560000						
	C8	1 NO + 1 NC	Solder	TH593561000						
	D1	2 NO + 2 NC	2.8 × 0.5 mm	TH593567000						
	D9	2 NO + 2 NC	Insulated faston	TH593563000						
	D8	2 NO + 2 NC	Solder	TH593564000						
Bezel	E	Ø 25 mm (Factory fitted)								

The keyswitch cannot be installed without a bezel. Contact blocks will be supplied unassembled.

# TR2

## Panel Mounted

Rotary

### TR2

Panel cut-out (mm)  $\varnothing$  16.2 or  $\varnothing$  22.5

- Characteristics
- 2 and 3 position
  - sealed IP40 or IP65
  - plastic or aluminium bezels
  - NO, NC
  - gold plated, single or double pole, contact blocks
  - key trapping options

Rating 250 VAC, 5 A

Dimensions (mm) 18 × 24  
18 × 18  
 $\varnothing$  18  
 $\varnothing$  25

Actuator ■ black knob, with white indicating bar

Approvals UL, CSA, VDE



### Popular products

Ordering Reference	Panel cut-out (mm)	Function	Actuator size (mm)	Environmental protection
TR21A2AC1C1A	$\varnothing$ 16.2	2 Position	18 × 24	IP40
TR22A2CC1C1E	$\varnothing$ 22.5	2 Position	$\varnothing$ 25	IP65
TR21C2AC1C1A	$\varnothing$ 16.2	3 Position	18 × 24	IP40
TR22C2CC1C1E	$\varnothing$ 22.5	3 Position	$\varnothing$ 25	IP65



## Specifications

Mechanism	Knob actuated
Mounting	Central fixing with metal lock nut
Protection	IP40 or IP65
Bezel material	Thermoplastic or anodized aluminium alloy
Temperature range °C	-25°C to +85°C
Mechanical life	10 <sup>6</sup> cycles
Contact block	Slide-on assembly by the user
Contact block housing	Self-extinguishing duroplastic (UL 94 V0)
Terminal material	Silver alloy with 0.2 µm silver plating, 0.4 µm gold plating
Contact resistance	<30 mOhm
Number of contact blocks	User configurable NO or NC types up to a maximum of 2 double contact blocks
Terminals	Patented flexible solder – suitable for wire diameter 1 × 1.00 mm <sup>2</sup> (braided), 2 × 0.75 mm (stranded) Faston – 2.8mm × 0.5mm
Vibration resistance	1.5 mm pp amplitude at 55 Hz

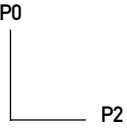
## Recommended maximum electrical ratings

Voltage (max) 250 VAC	Resistive load (A) 5.0 (0.7 pf)	Inductive load (A)	Approval UL, CSA, VDE - max. admissible circuit breaker C6A
12 VDC	5.0	3.0	General rating
24 VDC	4.0	2.0	General rating
36 VDC	3.0	1.7	General rating
48 VDC	2.0	1.5	General rating
60 VDC	1.5	1.2	General rating
125 VDC	0.5	0.3	General rating
250 VDC	0.3	0.2	General rating
Electrical life	50,000 cycles at 5A, 250 VAC, 0.7 pf		

# TR2

Rotary positions/  
function

2 Positions



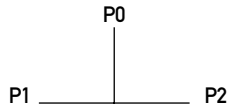
A



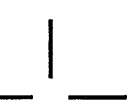
B



3 Positions



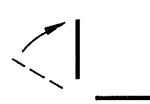
C



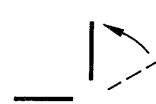
D



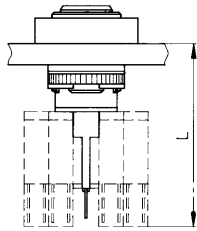
E



F

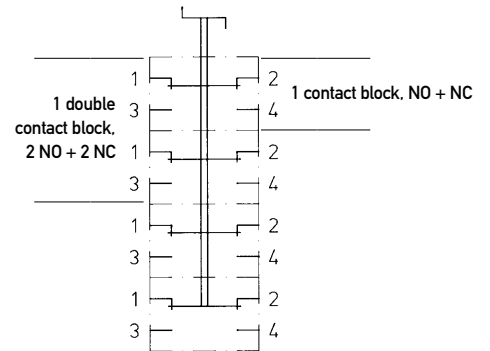


Dimensions



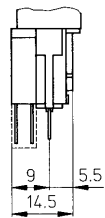
Length in mm (with contact block)  
plastic bezels 43  
aluminium bezels 42

Circuit diagram (2 double contact blocks)

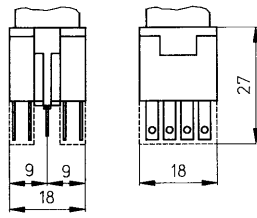


Contact blocks

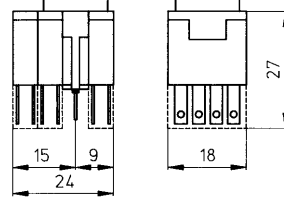
1 contact block



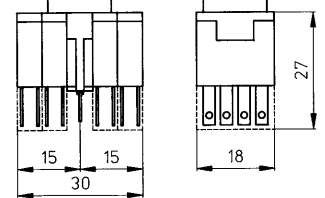
2 contact blocks



1 contact block +  
1 double contact block

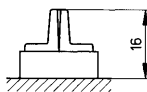


2 double contact blocks

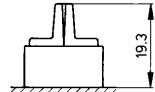


Bezel and rotary knob height

plastic bezel IP40

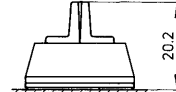


plastic bezel IP65

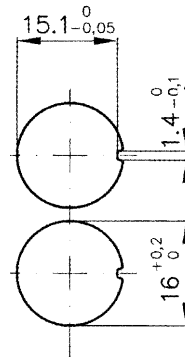


Panel cut-out  
16.2 mm ± 0.1 mm  
(plastic)

aluminium bezel



Panel cut-out  
22.5 mm ± 0.1 mm  
(aluminium)



Type coding key for standard products

Basic type	TR2	Example: TR2			
Panel cut-out	1 Ø 16.2 mm for plastic bezel rotary switches 2 Ø 22.5 mm for Aluminium bezel rotary switches	1	A2A	A1	A1
Switch body 16.2 mm panel cut-out	A2A 2 Positions; IP40;	Momentary	TH508021000		
	B2A 2 Positions; IP40;	Latching	TH508020000		
	A2B 2 Positions; IP65;	Momentary	TH508026000		
	B2B 2 Positions; IP65;	Latching	TH508025000		
22.5 mm panel cut-out	A2C 2 Positions; Ø 25 mm Aluminium bezel IP65	Momentary	TH508031000		
	B2C 2 Positions; Ø 25 mm Aluminium bezel IP65	Latching	TH508030000		
Contact block, gold Position 1	XX No contact block				
	A1 NO	2.8 × 0.5 mm	TH593566020		
	A9 NO	Insulated faston	TH593560020		
	A8 NO	Solder	TH593561020		
	B1 NC	2.8 × 0.5 mm	TH593566050		
	B9 NC	Insulated faston	TH593560050		
	B8 NC	Solder	TH593561050		
	C1 1 NO + 1 NC	2.8 × 0.5 mm	TH593566000		
	C9 1 NO + 1 NC	Insulated faston	TH593560000		
	C8 1 NO + 1 NC	Solder	TH593561000		
	D1 2 NO + 2 NC	2.8 × 0.5 mm	TH593567000		
	D9 2 NO + 2 NC	Insulated faston	TH593563000		
	D8 2 NO + 2 NC	Solder	TH593564000		
	Contact block, gold Position 2	XX No contact block			
A1 NO		2.8 × 0.5 mm	TH593566020		
A9 NO		Insulated faston	TH593560020		
A8 NO		Solder	TH593561020		
B1 NC		2.8 × 0.5 mm	TH593566050		
B9 NC		Insulated faston	TH593560050		
B8 NC		Solder	TH593561050		
C1 1 NO + 1 NC		2.8 × 0.5 mm	TH593566000		
C9 1 NO + 1 NC		Insulated faston	TH593560000		
C8 1 NO + 1 NC		Solder	TH593561000		
D1 2 NO + 2 NC		2.8 × 0.5 mm	TH593567000		
D9 2 NO + 2 NC		Insulated faston	TH593563000		
D8 2 NO + 2 NC		Solder	TH593564000		
Bezel			IP40	IP65	
	A 18 mm × 24 mm plastic	TH493060000	TH593060000		
	B 18 mm × 18 mm plastic	TH493062000	TH593062000		
	D Ø 18 mm plastic	TH493064000	TH593064000		
	E Ø 25 mm aluminium				

The rotary switch cannot be installed without a bezel. The IP40 bezels are interchangeable before installation. Once an IP65 bezel has been assembled it cannot be removed. Contact blocks will be supplied unassembled.

Type coding key for standard products

Basic type	TR2	Example: TR2		1	C2A	C2C	A1	A1	A
Panel cut-out	1	Ø 16.2 mm for plastic bezel rotary switches							
	2	Ø 22.5 mm for Aluminium bezel rotary switches							
Switch body	C2A	3 Positions; IP40;	Latching P0 + P1 + P2	TH508040000					
16.2 mm	D2A	3 Positions; IP40;	Momentary P1 + P2	TH508041000					
Panel cut-out	E2A	3 Positions; IP40;	Momentary P1 Latching P0 + P2	TH508042000					
	F2A	3 Positions; IP40;	Momentary P2 Latching P0 + P1	TH508043000					
	C2B	3 Positions; IP65;	Latching P0 + P1 + P2	TH508045000					
	D2B	3 Positions; IP65;	Momentary P1 + P2	TH508046000					
	E2B	3 Positions; IP65;	Momentary P1 Latching P0 + P2	TH508047000					
	F2B	3 Positions; IP65;	Momentary P2 Latching P0 + P1	TH508048000					
22.5 mm	C2C	3 Positions; Ø 25 mm Aluminium bezel IP65	Latching P0 + P1 + P2	TH508060000					
Panel cut-out	D2C	3 Positions; Ø 25 mm Aluminium bezel IP65	Momentary P1 + P2	TH508061000					
	E2C	3 Positions; Ø 25 mm Aluminium bezel IP65	Momentary P1 Latching P0 + P2	TH508062000					
	F2C	3 Positions; Ø 25 mm Aluminium bezel IP65	Momentary P2 Latching P0 + P1	TH508063000					
Contact block, gold	XX	No contact block							
Position 1	A1	NO	2.8 × 0.5 mm	TH593566020					
	A9	NO	Insulated faston	TH593560020					
	A8	NO	Solder	TH593561020					
	B1	NC	2.8 × 0.5 mm	TH593566050					
	B9	NC	Insulated faston	TH593560050					
	B8	NC	Solder	TH593561050					
	C1	1 NO + 1 NC	2.8 × 0.5 mm	TH593566000					
	C9	1 NO + 1 NC	Insulated faston	TH593560000					
	C8	1 NO + 1 NC	Solder	TH593561000					
	D1	2 NO + 2 NC	2.8 × 0.5 mm	TH593567000					
	D9	2 NO + 2 NC	Insulated faston	TH593563000					
	D8	2 NO + 2 NC	Solder	TH593564000					
Contact block, gold	XX	No contact block							
Position 2	A1	NO	2.8 × 0.5 mm	TH593566020					
	A9	NO	Insulated faston	TH593560020					
	A8	NO	Solder	TH593561020					
	B1	NC	2.8 × 0.5 mm	TH593566050					
	B9	NC	Insulated faston	TH593560050					
	B8	NC	Solder	TH593561050					
	C1	1 NO + 1 NC	2.8 × 0.5 mm	TH593566000					
	C9	1 NO + 1 NC	Insulated faston	TH593560000					
	C8	1 NO + 1 NC	Solder	TH593561000					
	D1	2 NO + 2 NC	2.8 × 0.5 mm	TH593567000					
	D9	2 NO + 2 NC	Insulated faston	TH593563000					
	D8	2 NO + 2 NC	Solder	TH593564000					
Bezel	A	18 mm × 24 mm plastic		IP40	IP65				
	B	18 mm × 18 mm plastic		TH493060000	TH593060000				
	D	Ø 18 mm plastic		TH493062000	TH593062000				
	E	Ø 25 mm aluminium		TH493064000	TH593064000				

The rotary switch cannot be installed without a bezel. The IP40 bezels are interchangeable before installation. Once an IP65 bezel has been assembled it cannot be removed. Contact blocks will be supplied unassembled.

# Accessories

## Contact blocks

TH593566020	NO	2.8 × 0.5mm	Contact blocks for TP2, TK2, TR2	gold plated
TH593560020	NO	Insulated faston		
TH593561020	NO	Solder		
TH593566050	NC	2.8 × 0.5mm		
TH593560050	NC	Insulated faston		
TH593561050	NC	Solder		
TH593566000	1 NO + 1 NC	2.8 × 0.5mm		
TH593560000	1 NO + 1 NC	Insulated faston		
TH593561000	1 NO + 1 NC	Solder		
TH593569000	2 NO + 2 NC	2.8 × 0.5mm		
TH593563000	2 NO + 2 NC	Insulated faston		
TH593564000	2 NO + 2 NC	Solder		

TH493500000 Contact blocks for TP4, TP5 gold plated

TH493520000 End plate for TP4, TP5

TH493521000 (for 1 contact block)  
 TH493522000 (for 2 contact blocks)  
 TH493523000 (for 3 contact blocks)

Pairs of screws for TP4, TP5



## Mounting nuts (whole range)

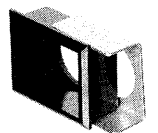
TH593545000	Fixation nuts M16 × 1 (TP2, TP5, TP4)
TH593547000	Fixation nuts M22 × 1 flat (TP2, TP5, TP4)
TH493547000	Fixation nuts M22 × 1 large (TP5, TP4)



## Countersunk mounting bezel sets (TP2, TP5, TI2, TI5)

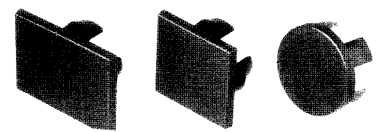
### For concealed versions only

TH593072000	for Switches 18 × 24 mm, IP40
TH593082000	for Switches 18 × 24 mm, IP67
TH593073000	for Switches 18 × 18 mm, IP40
TH593083000	for Switches 18 × 18 mm, IP67



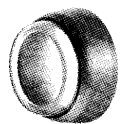
## Panel plugs (TP2, TP5)

TH493000000	18 × 24, IP40
TH493002000	18 × 18, IP40
TH493004000	∅ 18, IP40

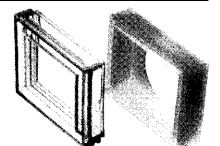


## Protecting covers (TP2, TP5, TP4)

TH493033000	Sealing ring D26, alu natural, silicon cap. IP65 (TP5, TP2, TI5, TI2 22.5 mm)
TH493033001	Sealing ring D25, alu natural, strong pebax cap. IP65 (TP5, TP2, TI5, TI2 22.5 mm)



TH493031000 Splashproof protection (transp. plast. upper part only) for exposed bezel 18 × 24 (TP2, TP5, TP4)









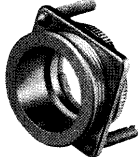
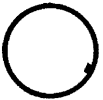


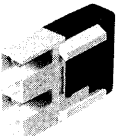
TH493010000 Guard bracket, for switches 18 × 24, anodised aluminium (wide sides raised)



TH493011000 Guard bracket, for switches 18 × 18, anodised aluminium (two sides raised)



## Accessories

TH493012000	Guard bracket, for switches $\varnothing$ 18, anodised aluminium	
TH493020000	Guard bracket, for switches 18 x 24, black plastic (all sides raised)	
TH593032000	Protecting cover with transparent plastic lid, 18 x 18	 
TH593035000	Protecting cover with transparent plastic lid, 18 x 24	
<b>Anti-rotation devices (TK2, TR2, TE8)</b>		
TH053205000	for panel cut-out 16.2 mm (TK2, TR2)	
		
TH493532000	for panel cut-out 22.5 mm (TK2, TR2)	
		
TH593080000	Adapter set, key- and rotary switches (TK2, TR2)	
		
TH060661000	panel cut-out 16.2 mm (TE8)	
<b>Plug in socket (TP2)</b>		
TH593578000	for 1 contact block TP2 with indicator terminals	
TH593568000	for 2 contact blocks TP2 with indicator terminals	
		
TH593582000	for 1 contact block TP2 without indicator terminals	
		
TH593584000	Diode carrier with 2 diodes 1N4007, faston connection without insulation	

## Accessories

---

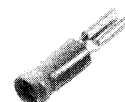
### Extra and spare keys (TK2)

TH493049001 to TH493049020 (KABA MICRO, EB0001 – EB0020)

---

### Faston Connectors (TP2, TK2, TR2, TP8)

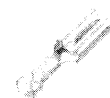
TH593571000 Faston pin, 2.8 × 0.5 mm, insulated, for wires 0.8 – 1.4 mm<sup>2</sup> (TP2, TK2, TR2)



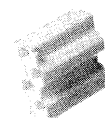
TH593572000 Faston pin, 2.8 × 0.5 mm, for wires 0.5 – 1.0 mm<sup>2</sup> (TP2, TK2, TR2, TP8)



TH593573000 Faston pin, 2.8 × 0.5 mm, for faston casings, for wires 0.3 – 0.6 mm<sup>2</sup> (TP2, TK2, TR2)



TH593574000 Sleeve and casing for th25 contact block 1 NO + 1 NC (TP2, TK2, TR2)



TH593575000 Sleeve and casing for th25 lamp terminals (TP2, TK2, TR2)

