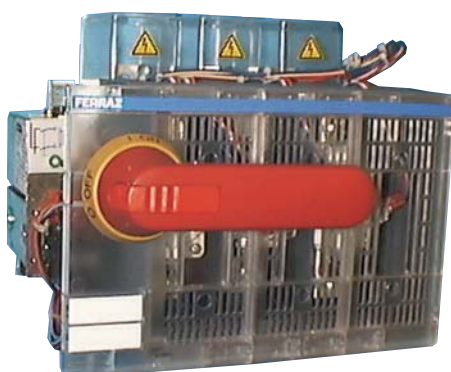




Fused Switches ITCP for Semiconductor Fuses 32 to 800A



CONTROL:

Side control, padlockable in off position by three padlocks.

Safe and reliable indication of contact position on handles.

SWITCHING:

Double isolation per phase.

Complete isolation of fuse when circuit open.

On-load opening and closing

AC23 & DC 23.

Interrupting rating 25 kA up to 100 kA.

Insulation voltage 1000 V.

FIXING:

On DIN rail for ratings lower 250A or on board.

FUSE CONNECTING:

Forced tightening.

MECHANISM:

Snap action mechanism which ensures rapid disconnection

regardless of how fast the user turns the operation handle.

CONSTRUCTION:

Complying with IEC 947 1 and 3 and EN 60947- 1 and - 3 Standards

Silver-plated copper electrical contacts.

Insulating partitions in UL 94 UO materials.

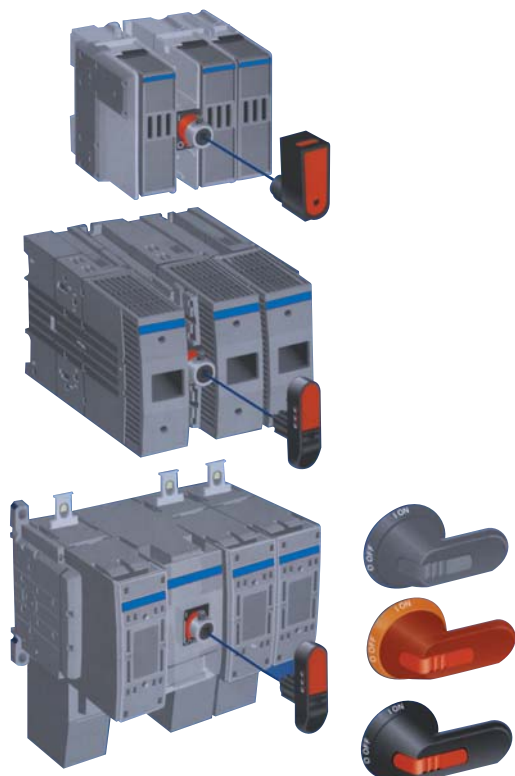
Required blown-fuse indication.

**PROTECTION AGAINST
TOUCHING OF LIVE PARTS: IP 20
COMPLETE RANGE READY-TO-
INSTALL**



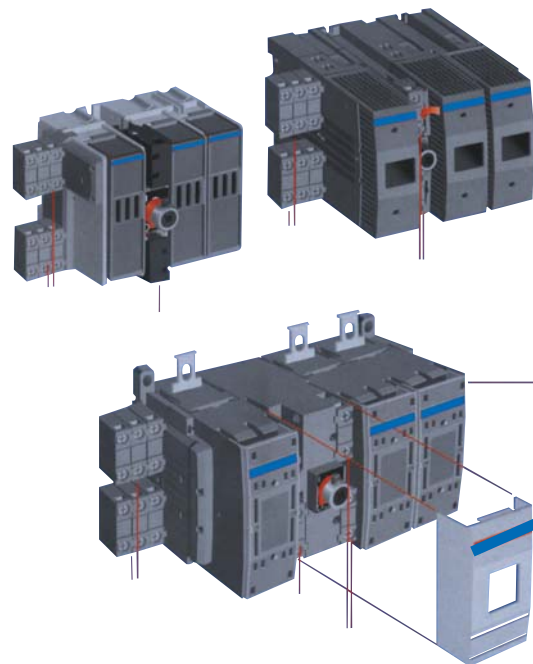
Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Protistor Fuse Switch disconnectors

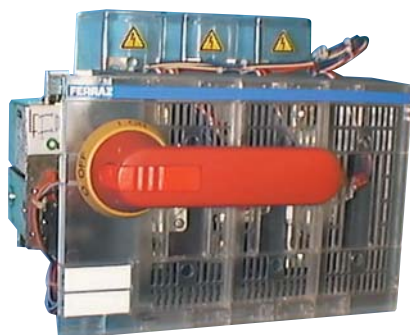


- For 10 x 38 fuses
- For 14 x 51 fuses
- For 22 x 58 fuses
- For 27 x 60 fuses
- For 00 x 000 fuses

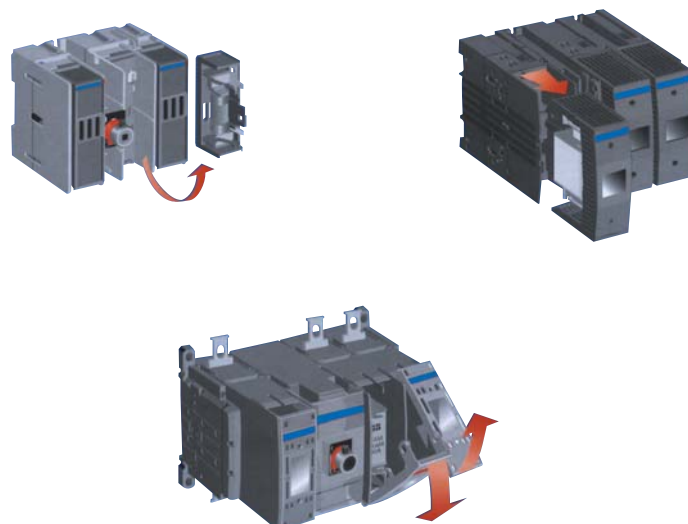
Easy-to-install and use



Complete protection against touching of live parts



- For 00P & 00TD80 fuses
- For end-contact fuses
- For blade-style Protistor fuses DIN 80 - 110 - 140
- For American blade-style Protistor fuses





Fused Switches

ITCP for Semiconductor Fuses

32 to 800A

The ITCP switch-disconnector range is specially designed to satisfy the connection requirements of Protistor semiconductor fuses along with thermal stresses generated during their use.

The combination of ITCP switches and Protistor fuses ensures a high degree of safety in the protection of both personnel and equipment, including power semiconductors and other fragile components.

ITCP Main characteristics

- Safe switching or closing of circuit at any time, even on load
- Disconnection of circuit in order to safely service installations and downstream components off load
- Associated fuses enable protection of the even the most demanding semiconductors
- Complying with IEC 947-3 BS 5419 - VDE 0660 - NFC 63130 Standards.
- Silver-plated copper electrical contacts Interrupting rating as per IEC 947-3, AC 23 Isolation of fuses downstream and upstream: when switch is open, fuses are off load Protection in all climate types Molded partitions in self-extinguishing fiber glass-reinforced polyester
- Front-controlled
- Numerous accessories offer complete protection against casual touch of live parts for improved personnel safety.
- Designed for fusing with three Protistor fuse technologies:
 - ferrule-type fuses
 - 00-000 fuses
 - PSC series 660V and 000V fuses.
- Thermal rating is given for an

ambient temperature $< 40^{\circ}\text{C}$
Beyond this ambient, a derating factor must be applied to thermal rating:

$$\sqrt{\frac{110 - \theta}{70}} \quad \text{where } \theta \text{ is ambient in } ^{\circ}\text{C}$$

User advice

While the rating alone enables selection of the switch-disconnector for general purpose fuses, additional parameters must be taken into account for semiconductor fuses:

- RMS operating current
- Actual power loss through fuse must be lower than maximum dissippable power per fuse in fused switch.

ITCP Selection example

Assume that fuse determination, in accordance with our T59 application information document, results in selection of a PSC 660V size 31 with $I_N = 450\text{A}$ and 70W rated power.

Operating conditions will be as follows:

- open air installation, ambient 30°C
- vertically-assembled fuses
- $I_{\text{rms}} = 340\text{A}$

Calculated power loss through fuse:

$$- \frac{I_{\text{rms}}}{I_N} = \frac{340}{450} \sim 0.76$$

In Semiconductor Fuses section, curve $P/P_N = f(I/I_N)$ provides a 0.48 coefficient, thus power lost in fuse is:
 $P = 0.48 \times 70\text{W} = 33.6\text{W}$

Various possibilities:

1st case: fuse with end contacts TT

- ① ITC P 400 III 30/32 TTF
 $I_{\text{rms}} = 340\text{A} < 400\text{A}$
 $P = 33,6\text{W} < 45\text{W}$
 (Possible selection)

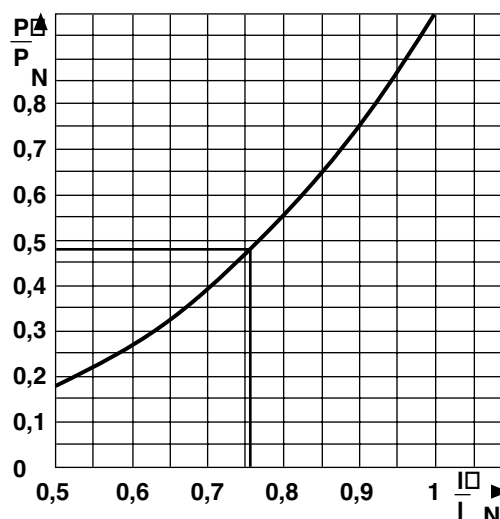
2nd case: fuse with LI blades

- ② ITC P 400 III 30/32 LI
 $I_{\text{rms}} = 340\text{A} < 400\text{A}$
 $P = 33.6\text{W} < 45\text{W}$
 (Possible selection)

- ③ ITC P 630 III 30/33 LI
 $I_{\text{rms}} = 340\text{A} < 630\text{A}$
 $P = 33.6\text{W} < 60\text{W}$
 (Possible selection)

Conclusion:

- Selection # ② is recommended by Ferraz Shawmut
- easy-to-install fuse
 - most cost-efficient solution





Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Selection Table: ITCP Thermal Rating vs fuse type

Reference number

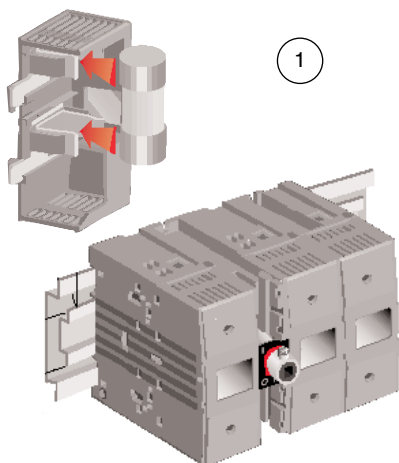
		For PROTISTOR® fuses													
ITCP Thermal Rating Open air Ambient ≤ 40°C	Max. Power loss in fuse	 Ferrule 1				 00 - 000 Solid Blades 2		 End-contacts PSC 3							
		10 x 38	14 x 51	22 x 58	27 x 60	00P	000/ 00D80	30TT	31TT	32TT	33TT	70TT	71TT	72TT	73TT
32 A	3,5 W @ Ith 3,5 W @ Ithe	B210405 <i>J205283</i>													
50 A	7,5 W @ Ith 7,5 W @ Ithe		C210406 <i>Y209896</i>												
125 A	12 W @ Ith 12 W @ Ithe			D210407 <i>L210782</i>											
160 A (135)*	12 W @ Ith 9 W @ Ithe				E210408 <i>B210888</i>	F210409 <i>S210788</i>									
250 A (230)*	32 W @ Ith 23 W @ Ithe						G210410 <i>X210125</i>	H210411 <i>Y210126</i>	H210411 <i>Y210126</i>			J210412 <i>Z210127</i>	J210412 <i>Z210127</i>		
400 A (360)*	45 W @ Ith 34 W @ Ithe*						M210415 <i>C210130</i>	N210416 <i>D210131</i>	N210416 <i>D210131</i>	N210416 <i>D210131</i>		P210417 <i>E210132</i>	P210417 <i>E210132</i>	P210417 <i>E210132</i>	
630 A (570)*	60 W @ Ith 45 W @ Ithe*						S210420 <i>H210135</i>	S210420 <i>H210135</i>	S210420 <i>H210135</i>			S210420 <i>H210135</i>	S210420 <i>H210135</i>	S210420 <i>H210135</i>	
800 A (720)*	65 W @ Ith 55 W @ Ithe*						W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>	W210423 <i>M210139</i>

In bold letters: Switch plus accessories to be mounted (switch + connection kit + inside control + protection against fuse live parts touching + protection against terminal touching + pre-isolating microswitch) + heightening cover.

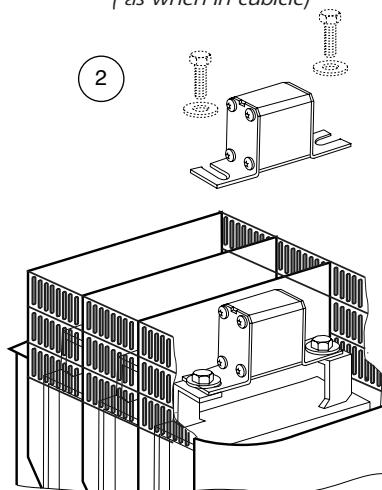
In Italics: Switch - Accessories must be ordered separately.

@ Ith : value given at switch thermal rating

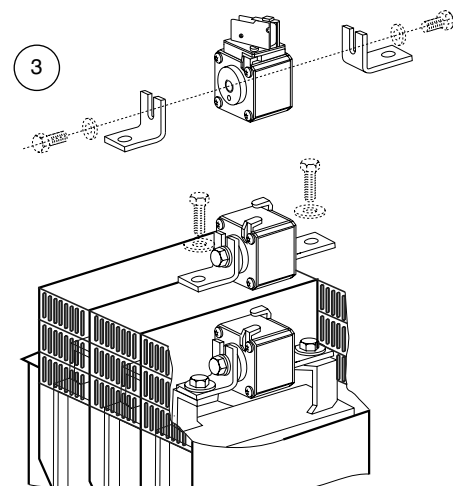
@ Ithe : value given for a shrouded switch
(as when in cubicle)



ITCP FOR FERRULE FUSES



ITCP FOR BRACKET-STYLE 00 & 000 FUSES



ITCP FOR END-CONTACT FUSES



Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Reference number

For PROTISTOR® fuses

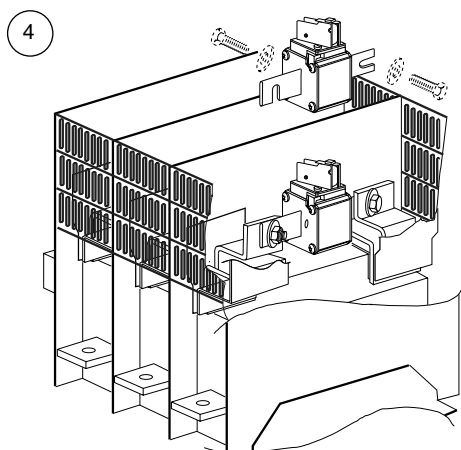
ITCP Thermal Rating Open air Ambient ≤ 40°C	Max. Power loss in fuse	German range PSC				American range PSC							
													
		30-70 DIN 110	31-71 DIN 110	32-72 DIN 110	33-73 DIN 110	Long blades				Short blades			
						30LI	31LLI	32LI	33LI	70KI	71KI	72KI	73KI
32 A	3,5 W @ lth 3,5 W @ lthe												
50 A	7,5 W @ lth 7,5 W @ lthe												
125 A	12 W @ lth 12 W @ lthe												
160 A (135)*	12 W @ lth 9 W @ lthe												
250 A (230)*	32 W @ lth 23 W @ lthe	K210413 <i>A210128</i>	K210413 <i>A210128</i>			L210414 <i>B210129</i>	L210414B <i>Z10129</i>			L210414 <i>B210129</i>	L210414 <i>B210129</i>		
400 A (360)*	45 W @ lth 34 W @ lthe*	Q210418 <i>F210133</i>	Q210418 <i>F210133</i>	Q210418 <i>F210133</i>		R210419 <i>G210134</i>	R210419 <i>G210134</i>	R210419 <i>G210134</i>		R210419 <i>G210134</i>	R210419 <i>G210134</i>	R210419 <i>G210134</i>	
630 A (570)*	60 W @ lth 45 W @ lthe*	T210421 <i>L210138</i>	T210421 <i>L210138</i>	T210421 <i>L210138</i>		V210422 <i>K210137</i>	V210422 <i>K210137</i>	V210422 <i>K210137</i>		V210422 <i>K210137</i>	V210422 <i>K210137</i>	V210422 <i>K210137</i>	
800 A (720)*	65 W @ lth 55 W @ lthe*	X210424 <i>Q210142</i>	X210424 <i>Q210142</i>	X210424 <i>Q210142</i>	X210424 <i>Q210142</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>	Y210425 <i>P210141</i>

In bold letters: Switch plus accessories to be mounted (switch + connection kit + inside control + protection against fuse live parts touching + protection against terminal touching + pre-isolating microswitch) + heightening cover.

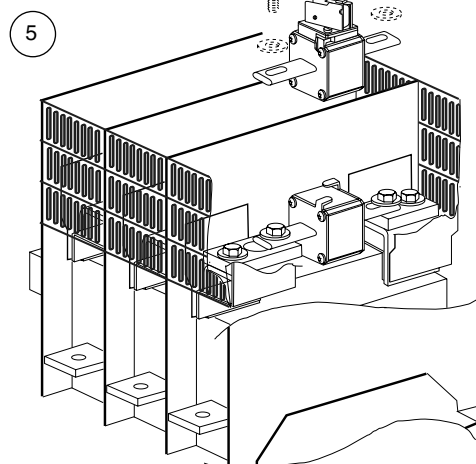
In Italics: Switch - Accessories must be ordered separately.

@ lth : value given at switch thermal rating

@ lthe : value given for a shrouded switch
(as when in cubicle)



ITCP FOR DIN-BLADE FUSES





Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Selection Table: ITCP Thermal Rating vs fuse type

Catalog number

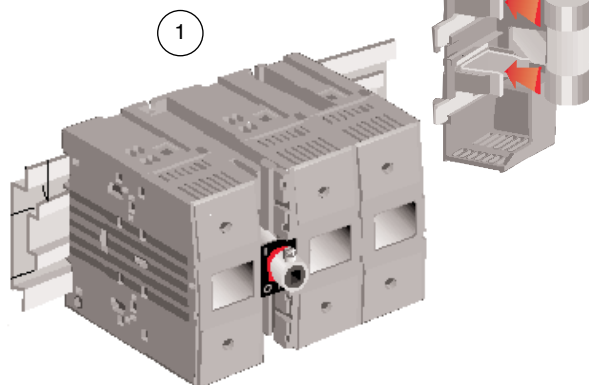
For PROTISTOR® fuses							
ITCP Thermal Rating Open air Ambient ≤ 40°C	Max. Power loss in fuse	 Ferrule				 Solid Blades	 Brackets
		10 x 38	14 x 51	22 x 58	27 x 60	00P	000/00D80
32 A	3,5 W @ Ith 3,5 W @ Ithe	ITCP32C3CP10 <i>ITCP32S3CF</i>					
50 A	7,5 W @ Ith 7,5 W @ Ithe		ITCP50C3CP14 <i>ITC50S3CF</i>				
125 A	12 W @ Ith 12 W @ Ithe			ITCP125C3CP22 <i>ITC125S3CF</i>			
160 A (135)*	12 W @ Ith 9 W @ Ithe				- <i>ITCP160K3CP27</i>	ITCP160C3D08 <i>ITC160S3CF</i>	
250 A (230)*	32 W @ Ith 23 W @ Ithe						ITCP250C3TD08 <i>ITCP250K3TD08</i>
400 A (360)*	45 W @ Ith 34 W @ Ithe*						ITCP400C3TD08 <i>ITCP400K3TD08</i>
630 A (570)*	60 W @ Ith 45 W @ Ithe*						
800 A (720)*	65 W @ Ith 55 W @ Ithe*						

In bold letters: Switch plus accessories to be mounted (switch + connection kit + inside control + protection against fuse live parts touching + protection against terminal touching + pre-isolating microswitch) + heightening cover.

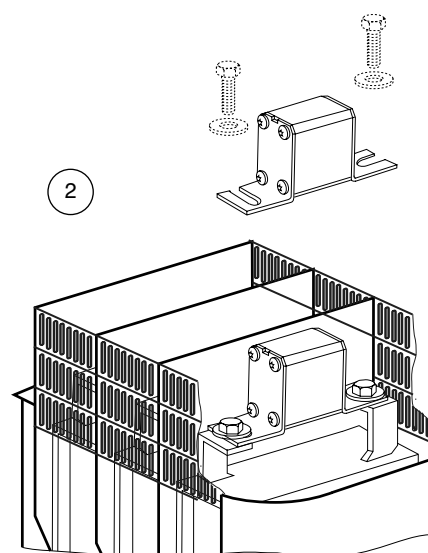
In Italics: Switch - Accessories must be ordered separately.

@ Ith : value given at switch thermal rating

@ Ithe : value given for a shrouded switch
(as when in cubicle)



ITCP FOR FERRULE FUSES



ITCP FOR BRACKET-STYLE 00 & 000 FUSES

Fused Switches

ITCP for Semiconductor Fuses

32 to 800A

Catalog number

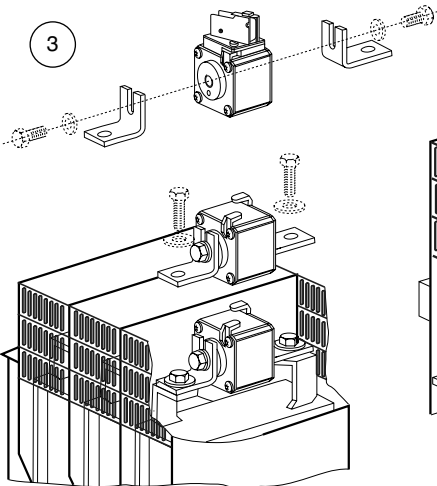
		For PROTISTOR® fuses							
ITCP Thermal Rating Open air Ambient ≤ 40°C	Max. Power loss in fuse	End-contacts PSC							
		30TT	31TT	32TT	33TT	70TT	71TT	72TT	73TT
32 A	3,5 W @ Ith 3,5 W @ Ithe								
50 A	7,5 W @ Ith 7,5 W @ Ithe								
125 A	12 W @ Ith 12 W @ Ithe								
160 A (135)*	12 W @ Ith 9 W @ Ithe								
250 A (230)*	32 W @ Ith 23 W @ Ithe	ITCP250C3TTF3 <i>ITCP250K3TTF3</i>	ITCP250C3TTF3 <i>ITCP250K3TTF3</i>			ITCP250C3TTF7 <i>ITCP250K3TTF7</i>	ITCP250C3TTF7 <i>ITCP250K3TTF7</i>		
400 A (360)*	45 W @ Ith 34 W @ Ithe*	ITCP400C3TTF3 <i>ITCP400K3TTF3</i>	ITCP400C3TTF3 <i>ITCP400K3TTF3</i>	ITCP400C3TTF3 <i>ITCP400K3TTF3</i>		ITCP400C3TTF7 <i>ITCP400K3TTF7</i>	ITCP400C3TTF7 <i>ITCP400K3TTF7</i>	ITCP400C3TTF7 <i>ITCP400K3TTF7</i>	
630 A (570)*	60 W @ Ith 45 W @ Ithe*	ITCP630C3TTF <i>ITCP630K3TTF</i>	ITCP630C3TTF <i>ITCP630K3TTF</i>	ITCP630C3TTF <i>ITCP630K3TTF</i>		ITCP630C3TTF <i>ITCP630K3TTF</i>	ITCP630C3TTF <i>ITCP630K3TTF</i>	ITCP630C3TTF <i>ITCP630K3TTF</i>	
800 A (720)*	65 W @ Ith 55 W @ Ithe*	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>	ITCP800C3TTF <i>ITCP800K3TTF</i>

In bold letters: Switch plus accessories to be mounted (switch + connection kit + inside control + protection against fuse live parts touching + protection against terminal touching + pre-isolating microswitch) + heightening cover.

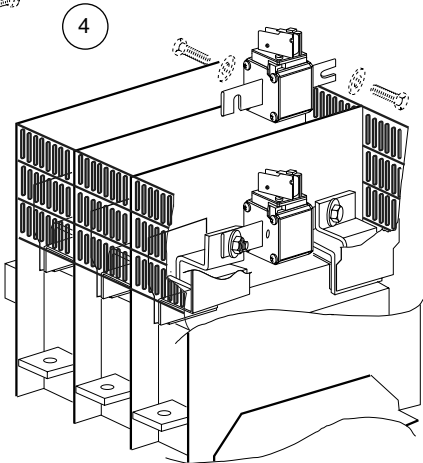
In Italics: Switch - Accessories must be ordered separately.

@ Ith : value given at switch thermal rating

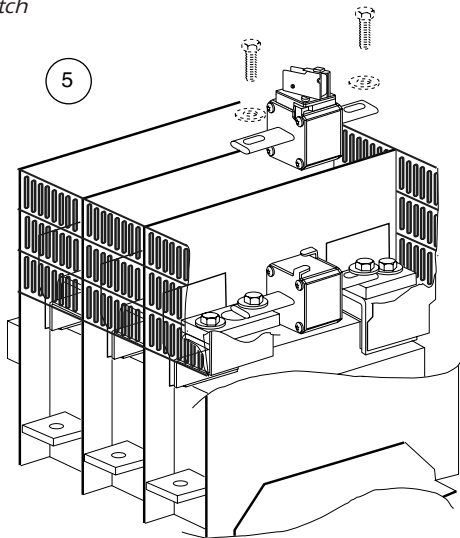
@ Ithe : value given for a shrouded switch
(as when in cubicle)



ITCP FOR END-CONTACT FUSES



ITCP FOR DIN-BLADE FUSES





Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Selection Table: ITCP Thermal Rating vs fuse type

Catalog number

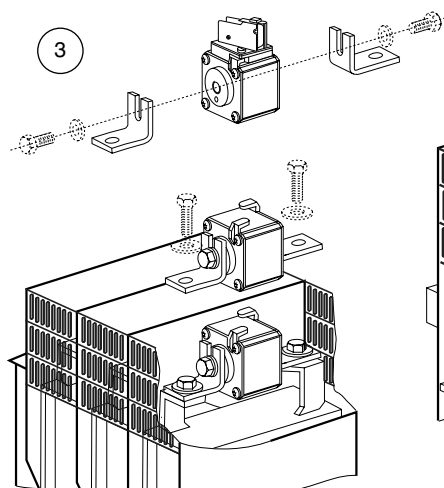
		For PROTISTOR® fuses			
ITCP Thermal Rating Open air Ambient ≤ 40°C	Max. Power loss in fuse	German range PSC			
		 30-70 DIN 110	31-71 DIN 110	32-72 DIN 110	33-73 DIN 110
32 A	3,5 W @ Ith 3,5 W @ Ithe				
50 A	7,5 W @ Ith 7,5 W @ Ithe				
125 A	12 W @ Ith 12 W @ Ithe				
160 A (135)*	12 W @ Ith 9 W @ Ithe				
250 A (230)*	32 W @ Ith 23 W @ Ithe	ITCP250C3D11 <i>ITCP250K3D11</i>	ITCP250C3D11 <i>ITCP250K3D11</i>		
400 A (360)*	45 W @ Ith 34 W @ Ithe*	ITCP400C3D11 <i>ITCP400K3D11</i>	ITCP400C3D11 <i>ITCP400K3D11</i>	ITCP400C3D11 <i>ITCP400K3D11</i>	
630 A (570)*	60 W @ Ith 45 W @ Ithe*	ITCP630C3D08/14 <i>ITCP630K3D11/14</i>	ITCP630C3D08/14 <i>ITCP630K3D11/14</i>	ITCP630C3D08/14 <i>ITCP630K3D11/14</i>	
800 A (720)*	65 W @ Ith 55 W @ Ithe*	ITCP800C3D08/14 <i>ITCP800K3D08/14</i>	ITCP800C3D08/14 <i>ITCP800K3D08/14</i>	ITCP800C3D08/14 <i>ITCP800K3D08/14</i>	ITCP800C3D08/14 <i>ITCP800K3D08/14</i>

In bold letters: Switch plus accessories to be mounted (switch + connection kit + inside control + protection against fuse live parts touching + protection against terminal touching + pre-isolating microswitch) + heightening cover.

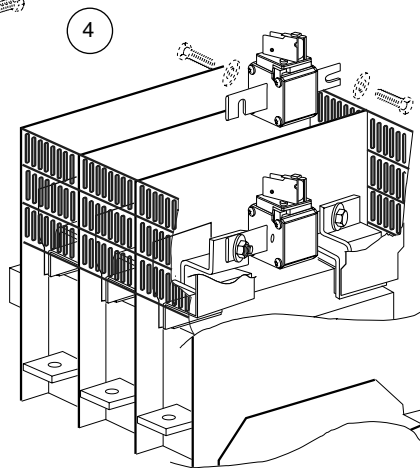
In Italics: Switch - Accessories must be ordered separately.

@ Ith : value given at switch thermal rating

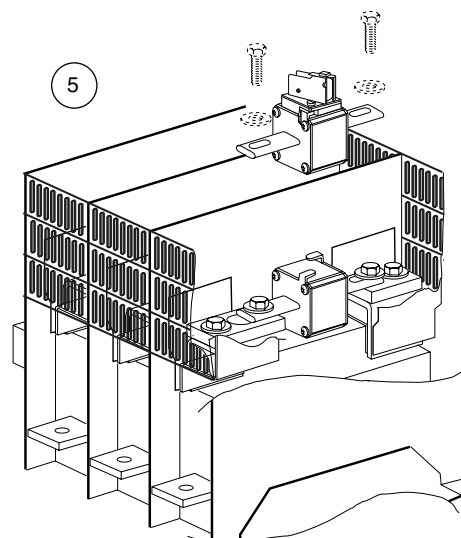
@ Ithe : value given for a shrouded switch
(as when in cubicle)



ITCP FOR END-CONTACT FUSES



ITCP FOR DIN-BLADE FUSES



Catalog number

Diagram 5 shows the assembly of the top rail. A long, perforated metal rail is being attached to the side rail using a bracket and two screws. The bracket is shown being positioned over the side rail, and the screws are shown being inserted into the bracket and the side rail.



Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Reference number

Thermal Rating Ith (A)	Fuse Type	Ready-to-install complete switch**			Separate switch with kit for connecting fuses		
		Complete switch Reference Number	Designation Switch supplied with black & red handle, 2 auxiliary pre-isolating contacts NO & NC, blown fuse indication for ferrule fuses, protection against fuse live parts touching, protection against terminal touching and heightening cover.		Separate Switch Reference Number	Connection kit Reference Number	Switch plus mounted connection kit Ref. Number
32	10x38	B 210 405	ITCP 32 III 10x38	COMPLETE	J 205 283	...	...
50	14x51	C 210 406	ITCP 50 III 14x51	COMPLETE	Y 209 896	...	...
125	22x58	D 210 407	ITCP 125 III 22x58	COMPLETE	L 210 782	...	...
160	27x60	E 210 408	ITCP 160 III 27x60	COMPLETE	B 210 888	...	...
160	00P	F 210 409	ITCP 160 III 00	COMPLETE	S 210 788	...	...
250	000/00DIN80	G 210 410	ITCP 250 III 00/000 TD08	COMPLETE	C 210 038	M 210 047	X 210 125
	30 to 31 TTF	H 210 411	ITCP 250 III 30-31 TTF	COMPLETE		K 210 045	Y 210 126
	70 to 71 TTF	J 210 412	ITCP 250 III 70-71 TTF	COMPLETE		L 210 046	Z 210 127
	30 to 31 LI 70 to 71 KI	L210 414	ITCP 250 III 30-31 LI/70-71 KI	COMPLETE		N 210 048	B 210 129
400	000/00DIN80	M 210 415	ITCP 400 III 00/000 TD08	COMPLETE	D 210 039	M 210 047	C 210 130
	30 to 32 TTF	N 210 416	ITCP 400 III 30-32 TTF	COMPLETE		K 210 045	D 210 131
	70 to 72 TTF	P 210 417	ITCP 400 III 70-72 TTF	COMPLETE		L 210 046	E 210 132
	30 to 32 DIN 110 70 to 72 DIN 110	Q 210 418 #	ITCP 400 III 30-32/70-72 D11 #	COMPLETE		H 210 043	F 210 133 #
	30 to 32 LI 70 to 72 KI	R 210 419	ITCP 400 III 30-32 LI/70-72 KI	COMPLETE		N 210 048	G 210 134
630	30 to 33 TTF 70 to 72 TTF	S 210 420	ITCP 630 III 30-33/70-73 TTF	COMPLETE	E 210 040	Q 210 050	H 210 135
	30 to 33 DIN 110 70 to 73 DIN 110	T 210 421#	ITCP 630 III 30-33/70-73 D08 à 14	COMPLETE		P 210 049	L 210 138 #
	30 to 33 LI 70 to 73 KI	V 210 422	ITCP 630 III 30-33 LI/70-73 KI	COMPLETE		S 210 052	K 210 137
800	30 to 33 TTF 70 to 73 TTF	W 210 423	ITCP 800 III 30-33/70-73 TTF	COMPLETE	F 210 041	Q 210 050	M 210 139
	30 to 33 DIN 110 70 to 73 DIN 110	X 210 424 #	ITCP 800 III 30-33/70-73 D08 à 14 #	COMPLETE		P 210 049	Q 210 142 #
	30 to 33 LI 70 to 73 KI	Y 210 425	ITCP 800 III 30-33 LI/70-73 KI	COMPLETE		S 210 052	P 210 141

** Connection parts are not mounted on TTF fuses due to a distance between connection axes depending on height of fuse body variation which is +/- 1mm

In-factory adjustments for DIN 110 blade fuses



Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Reference number

		Accessories						
Thermal Rating Ith (A)	Fuse Type	Inside handle Black & Red (Internal control)	Outside handle ① Black & Red ② Red & Yellow (Internal control)	Shaft extension for outside handle if needed	Pre-isolating auxiliary contact (MC) ①②③④⑤⑥	Blown fuse indication auxiliary contact (DPMM) ①②③④	Protection against fuse live parts touching (CPT)*	Terminal cover (CB) * 1 CB per terminal
32	10x38	N 205 287	① V 209 916 ② C 210 084	H 081 703 265 mm shaft	③ P 205 288 ou G 210633 + ① L 207 493 ② H 209 882	③ Q 205 289	Built-in	Built-in
50	14x51	E 210 109	① M 209 909 ② N 209 910 150 mm shaft	B 210 106 290 mm shaft	① L 207 493 8 contacts maximum ② H 209 882	Z 210 104 (1 NO & 1 NC)	Built-in	Built-in
125	22x58					A 210 473 (1 NO & 1 NC) For 2 NO or 2 NC order L 207 493 H 209 882	Built-in	N 210 807
160	27x60					No indication		
160	00P							
250	000/00 DIN80	Q 209 912 To be ordered with a protection screen against fuse live part touching	① Q 209 912 ② R 209 913 250 mm shaft	L 097 093 395 mm shaft	④ S 086 588 ⑤ L 097 300 ⑥ J 208 020	Function of fuse type See Semiconductor Fuse section	without blown fuse indication G 207 305	* M 096 657
	30 to 31 TTF						With blown fuse indication G 207 305 + Y 210 770	
	70 to 71 TTF							
	30 to 31 LI 70 to 71 KI							
400	000/00 DIN80	Q 209 912 To be ordered with a protection screen against fuse live part touching	① Q 209 912 ② R 209 913 250 mm shaft	L 097 093 395 mm shaft	④ S 086 588 ⑤ L 097 300 ⑥ J 208 020	Function of fuse type See Semiconductor Fuse section	without blown fuse indication J 207 307	* M 096 657
	30 to 32 TTF						With blown fuse indication J 207 307 + Y 210 770	
	70 to 72 TTF							
	30 to 32 DIN 110 70 to 72 DIN 110							
	30 to 32 LI 70 to 72 KI							
630	30 to 33 TTF 70 to 72 TTF	Q 209 912 To be ordered with a protection screen against fuse live part touching	① Q 209 912 ② R 209 913 250 mm shaft	L 097 093 395 mm shaft	④ S 086 588 ⑤ L 097 300 ⑥ J 208 020	Function of fuse type See Semiconductor Fuse section	Without blown fuse indication L 207 309	* S 095 880
	30 to 33 DIN 110 70 to 73 DIN 110						With blown fuse indication L 207 309 + Y 210 770	
	30 to 33 LI 70 to 73 KI							
800	30 to 33 TTF 70 to 73 TTF	Q 209 912 To be ordered with a protection screen against fuse live part touching	① Q 209 912 ② R 209 913 250 mm shaft	L 097 093 395 mm shaft	④ S 086 588 ⑤ L 097 300 ⑥ J 208 020	Function of fuse type See Semiconductor Fuse section	Without blown fuse indication Z 210 771	* S 095 880
	30 to 33 DIN 110 70 to 73 DIN 110						With blown fuse indication Z 210 771+ Y 210 770	
	30 to 33 LI 70 to 73 KI							

* With outside control, a locking mechanism of cover can be used. When switch is ON, this mechanism locks the cover (e.g. test of fuse live part touching protection, servicing of circuit when cubicle open)

TYPES OF AUXILIARY CONTACTS

- ① Single microswitch 1 NO
- ② Single microswitch 1 NC
- ③ Reversing microswitch 1 NO/NC
- ④ Microswitch 1 NO & 1 NC
- ⑤ Twin microswitch 2 NO & 2 NC
- ⑥ Microswitch 1 NO & 1 NC low level



Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Catalog number

Thermal Rating Ith (A)	Fuse Type	Ready-to-install complete switch**			Separate switch with kit for connecting fuses		
		Complete switch catalog Number	Designation Switch supplied with black & red handle, 2 auxiliary pre-isolating contacts NO & NC, blown fuse indication for ferrule fuses, protection against fuse live parts touching, protection against terminal touching and heightening cover.		Separate Switch Catalog Number	Connection kit Catalog Number	Switch plus mounted connection kit Cat. Number
32	10x38	ITCP32C3CP10	ITCP 32 III 10x38	COMPLETE	ITC32S3CF	...	...
50	14x51	ITCP50C3CP14	ITCP 50 III 14x51	COMPLETE	ITC50S3CF	...	...
125	22x58	ITCP125C3CP22	ITCP 125 III 22x58	COMPLETE	ITC125S3CF	...	...
160	27x60	-	ITCP 160 III 27x60	COMPLETE	ITCP160K3CP27	...	...
160	00P	ITCP160C3D08	ITCP 160 III 00	COMPLETE	ITC160S3CF	...	...
250	000/00DIN80	ITCP250C3TD08	ITCP 250 III 00/000 TD08	COMPLETE	ITCP250S3	KITCP250/400TD8	ITCP250K3TD08
	30 to 31 TTF	ITCP250C3TTF3	ITCP 250 III 30-31 TTF	COMPLETE		KITCP250/400TTF3	ITCP250K3TTF3
	70 to 71 TTF	ITCP250C3TTF7	ITCP 250 III 70-71 TTF	COMPLETE		KITCP250/400TTF7	ITCP250K3TTF7
	30 to 31 LI 70 to 71 KI	ITCP250C3US	ITCP 250 III 30-31 LI/70-71 KI	COMPLETE		KITCP250/400US	ITCP250K3US
400	000/00DIN80	ITCP400C3TD08	ITCP 400 III 00/000 TD08	COMPLETE	ITCP400S3	KITCP250/400TD8	ITCP400K3TD08
	30 to 32 TTF	ITCP400C3TTF3	ITCP 400 III 30-32 TTF	COMPLETE		KITCP250/400TTF3	ITCP400K3TTF3
	70 to 72 TTF	ITCP400C3TTF7	ITCP 400 III 70-72 TTF	COMPLETE		KITCP250/400TTF7	ITCP400K3TTF7
	30 to 32 DIN 110 70 to 72 DIN 110	ITCP400C3D11	ITCP 400 III 30-32/70-72 D11 #	COMPLETE		KITCP250/400D11	ITCP400K3D11
	30 to 32 LI 70 to 72 KI	ITCP400C3US	ITCP 400 III 30-32 LI/70-72 KI	COMPLETE		KITCP250/400US	ITCP400K3US
630	30 to 33 TTF 70 to 72 TTF	ITCP630C3TTF	ITCP 630 III 30-33/70-73 TTF	COMPLETE	ITCP630S3	KITCP630/800TTF	ITCP630K3TTF
	30 to 33 DIN 110 70 to 73 DIN 110	ITCP630C3D08/14	ITCP 630 III 30-33/70-73 D08 à 14	COMPLETE		KITCP630/800D	ITCP630K3D11/14
	30 to 33 LI 70 to 73 KI	ITCP630C3US	ITCP 630 III 30-33 LI/70-73 KI	COMPLETE		KITCP630/800US	ITCP630K3US
800	30 to 33 TTF 70 to 73 TTF	ITCP800C3TTF	ITCP 800 III 30-33/70-73 TTF	COMPLETE	ITCP800S3	KITCP630/800TTF	ITCP800K3TTF
	30 to 33 DIN 110 70 to 73 DIN 110	ITCP800C3D08/14	ITCP 800 III 30-33/70-73 D08 à 14 #	COMPLETE		KITCP630/800D	ITCP800K3D08/14
	30 to 33 LI 70 to 73 KI	ITCP800C3US	ITCP 800 III 30-33 LI/70-73 KI	COMPLETE		KITCP630/800US	ITCP800K3US

** Connection parts are not mounted on TTF fuses due to a distance between connection axes depending on height of fuse body variation which is +/- 1mm

In-factory adjustments for DIN 110 blade fuses



Fused Switches ITCP for Semiconductor Fuses 32 to 800A

Catalog number

		Accessories						
Thermal Rating Ith (A)	Fuse Type	Inside handle Black & Red (Internal control)	Outside handle ① Black & Red ② Red & Yellow (Internal control)	Shaft extension for outside handle if needed	Pre-isolating auxiliary contact (MC) ①②③④⑤⑥	Blown fuse indication auxiliary contact (DPMM) ①②③④	Protection against fuse live parts touching (CPT)*	Terminal cover (CB) * 1 CB per terminal
32	10x38		① ②	265 mm shaft	③ ou ① ②	③	Built-in	Built-in
50	14x51					(1 NO & 1 NC)	Built-in	Built-in
125	22x58		① ②		①	(1 NO & 1 NC)	Built-in	
160	27x60		150 mm shaft	290 mm shaft	8 contacts maximum	For 2 NO or 2 NC order L 207 493		
160	00P				②	No indication		
250	000/00 DIN80	To be ordered with a protection screen against fuse live part touching	① ②	250 mm shaft	④ ⑤ ⑥	Function of fuse type See Semiconductor Fuse section	without blown fuse indication	
	30 to 31 TTF							
	70 to 71 TTF						With blown fuse indication	
	30 to 31 LI 70 to 71 KI							
400	000/00 DIN80	To be ordered with a protection screen against fuse live part touching	① ②	250 mm shaft	④ ⑤ ⑥	Function of fuse type See Semiconductor Fuse section	without blown fuse indication	
	30 to 32 TTF							
	70 to 72 TTF						With blown fuse indication	
	30 to 32 DIN 110 70 to 72 DIN 110							
	30 to 32 LI 70 to 72 KI							
630	30 to 33 TTF 70 to 72 TTF	To be ordered with a protection screen against fuse live part touching	① ②	250 mm shaft	④ ⑤ ⑥	Function of fuse type See Semiconductor Fuse section	Without blown fuse indication	
	30 to 33 DIN 110 70 to 73 DIN 110						With blown fuse indication	
	30 to 33 LI 70 to 73 KI							
800	30 to 33 TTF 70 to 73 TTF	To be ordered with a protection screen against fuse live part touching	① ②	250 mm shaft	④ ⑤ ⑥	Function of fuse type See Semiconductor Fuse section	Without blown fuse indication	
	30 to 33 DIN 110 70 to 73 DIN 110						With blown fuse indication	
	30 to 33 LI 70 to 73 KI							

* With outside control, a locking mechanism of cover can be used. When switch is ON, this mechanism locks the cover (e.g. test of fuse live part touching protection, servicing of circuit when cubicle open)

TYPES OF AUXILIARY CONTACTS

- ① Single microswitch 1 NO ② Single microswitch 1 NC ③ Reversing microswitch 1 NO/NC
- ④ Microswitch 1 NO & 1 NC ⑤ Twin microswitch 2 NO & 2 NC ⑥ Microswitch 1 NO & 1 NC low level



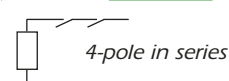
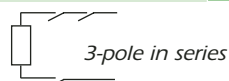
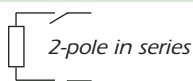
Fused Switches

ITCP for Semiconductor Fuses

32 to 800A

ITCP Fused Switch-disconnectors							
Electrical characteristics			ITCP 32	ITCP 50	ITCP 125	ITCP 160	
Thermal rating (1) ▪ open air Ith: ▪ in cubicle Ithe:			Ith (A)	32	50	125	160
			Ithe	32	50	125	160
Rated voltage			AC-20 DC-20 (V)	1000	1000	1000	1000
Rated insulation voltage			Ui (V)	1000	1000	1000	1000
Rated impulse withstand voltage			(kV)	12	12	12	12
PROTISTOR® fuse type			Ferrule	10x38	14x51	22x58	27x60
			00-000	-	-	-	00P
			End-contacts PSC	-	-	-	-
			American PSC	-	-	-	-
			DIN PSC	-	-	-	-
Maximum power losses per fuse # (w)			3,5 @ Ith 3,5 @ Ithe	7,5 @ Ith 7,5 @ Ithe	12 @ Ith 12 @ Ithe	12 @ Ith 9 @ Ithe	
RMS short-circuit rated current with fuses (kA)			500 V 690 V	25 50	50 50	50 50	
Interrupting rating (AC23) Ic (A)			$U_e \begin{cases} 500\text{ V} \\ 690\text{ V} \end{cases}$	256 256	504 320	800 405	800 405
Operating rated voltage:							
AC23	Operating rated current Ie (1) Power class	Ie en (A)	$U_e \begin{cases} \leq 500\text{ V} \\ 690\text{ V} \end{cases}$	32 32	50 50	125 125	160 160
	Operating rated power P (kW) with a 1500 rpm asynchronous 3-phase motor	P en (W)	$U_e \begin{cases} 400\text{ V} \\ 500\text{ V} \\ 690\text{ V} \end{cases}$	15 18 25	25 33 45	55 70 45	55 70 45
			(Ue: operating rated voltage)				
DC23	Operating rated current / poles in series** Ie (A)		$U_e \begin{cases} 110-220\text{V} \\ 440\text{V} \\ 500-750\text{V} \end{cases}$	32/2 32/4 -	- - -	125/3 100/4* -	160/3 100/4* -
			(Ue: operating rated voltage)				
			Mechanical endurance: number of operating cycles				
Electrical endurance: number of operating cycles at Ith and cosj 0,65			500 V 690 V	- 1500	1500 -	1500 (I=100A)	1000 -
Power losses per pole (without fusible)			(W)	2	2.5	12	12
Permissible short-duration current 1s			(kA)	1	2.5	5	5

** Poles in series: to be completed by user



(1) For ambient 50°C = x0.9, 60°C : x0.8. Pour fusible horizontal: x0.9.

* Use in class B

** To be completed by user

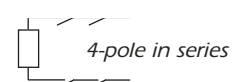
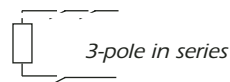
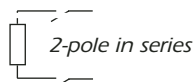
Value given at thermal rating, for a switch in open air (Ith) and for a shrouded switch (Ithe) e.g. as in cubicle.



Fused Switches ITCP for Semiconductor Fuses 32 to 800A

ITCP Fused Switch-disconnectors					
Electrical characteristics			ITCP 250	ITC 400	
Thermal rating (1) ▪ open air Ith: ▪ in cubicle Ithe:			Ith (A) Ithe	250 230	400 360
Rated voltage			AC-20 DC-20 (V)	1000	1000
Rated insulation voltage			Ui (V)	1000	1000
Rated impulse withstand voltage			(kV)	12	12
PROTISTOR® fuse type			Ferrule	-	-
			00-000	000/00/D80	000/00/D80
			End-contacts PSC	3031 TT - 7071 TT	3031TT - 7071TT
			American PSC	30LI - 31LLI 70KI - 71KI	30LI - 31LIJ - 32LI 70KI - 71KI - 72KI
			DIN PSC	30-31 & 70-71 DIN110	30-31-32 & 70-71-72 DIN110
Maximum power losses per fuse # (w)			32 @ Ith 23 @ Ithe	45 @ Ith 34 @ Ithe	
RMS short-circuit rated current with fuses (kA)			500 V	100	100
			690 V	50	50
Interrupting rating (AC23) Ic (A)			$U_e \begin{cases} 500\text{ V} \\ 690\text{ V} \end{cases}$	2000	3200
Operating rated voltage:				2000	3200
AC23	Operating rated current Ie (1) Power class		$I_{e\ en}\ (A)\ U_e \begin{cases} \leq 500\text{ V} \\ 690\text{ V} \end{cases}$	200	400
				200	400
	Operating rated power P (kW) with a 1500 rpm asynchronous 3-phase motor		$P\ en\ (W)\ U_e \begin{cases} 400\text{ V} \\ 500\text{ V} \\ 690\text{ V} \end{cases}$	15	210
	(Ue: operating rated voltage)			170	280
DC23	Operating rated current / poles in series** Ie (A)		$U_e \begin{cases} 110-220V \\ 440V \\ 500-750V \end{cases}$	230	330
				250 /2	400 /2
				250 /2	400 /2
			200 /3	400 /3	
Mechanical endurance: number of operating cycles			8 000	8 000	
Electrical endurance: number of operating cycles at Ith and cosj 0,65			500 V 690 V	- 8 000	- 8 000
Power losses per pole (without fusible)			(W)	5	30
Permissible short-duration current 1 s			(kA)	8	10

** Poles in series: to be completed by user



(1) For ambient 50°C = x0.9, 60°C : x0.8. Pour fusible horizontal: x0.9.

* Use in class B

** To be completed by user

Value given at thermal rating, for a switch in open air (Ith) and for a shrouded switch (Ithe) e.g. as in cubicle.



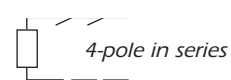
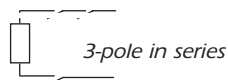
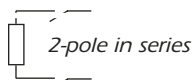
Fused Switches

ITCP for Semiconductor Fuses

32 to 800A

ITCP Fused Switch-disconnectors						
Electrical characteristics				ITCP 630		ITCP 800
Thermal rating (I) ▪ open air Ith: ▪ in cubicle Ithe:				Ith (A)	630	800
				Ithe	600	720
Rated voltage				AC-20 DC-20 (V)	1000	1000
Rated insulation voltage				Ui (V)	1000	1000
Rated impulse withstand voltage				(kV)	12	12
PROTISTOR® fuse type				Ferrule	-	-
				00-000	-	-
				End-contacts PSC	32TT - 72TT	32TT - 33TT 72TT - 73TT
				American PSC	30LI - 31LLI - 32 LI 70KI - 71KI - 72KI	30LI - 31LLI - 32LI - 33LI 70KI - 71KI - 72KI - 73KI
				DIN PSC	30-31-32 & 70-71-72 DIN110	30-31-32-33 & 70-71-72-73 DIN110
Maximum power losses per fuse # (w)				60 @ Ith 45 @ Ithe	65 @Ith 55 @ Ithe	
RMS short-circuit rated current with fuses (kA)				500 V	100	100
				690 V	50	50
Interrupting rating (AC23) Ic (A)				$U_e \begin{cases} 500\text{ V} \\ 690\text{ V} \end{cases}$	5760	5760
Operating rated voltage:					5760	5760
AC23	Operating rated current Ie (I) Power class			$I_{e\ en}\ (A)\ U_e \begin{cases} \leq 500\text{ V} \\ 690\text{ V} \end{cases}$	630	720
					630	720
	Operating rated power P (kW) with a 1500 rpm asynchronous 3-phase motor			$P_{\ en}\ (W)\ U_e \begin{cases} 400\text{ V} \\ 500\text{ V} \\ 690\text{ V} \end{cases}$	315	350
					400	470
	(Ue: operating rated voltage)			540	600	
DC23	Operating rated current / poles in series** Ie (A) (Ue: operating rated voltage)			$U_e \begin{cases} 110-220V \\ 440V \\ 500-750V \end{cases}$	630 /2	800 /2
					630 /2	800 /2
					630 /3	800 /3
Mechanical endurance: number of operating cycles				5 000	5 000	
Electrical endurance: number of operating cycles at Ith and cosj 0,65				500 V 690 V	- 5 000	(cosj = 0.6) 500
Power losses per pole (without fusible)				(W)	55	77
Permissible short-duration current 1s				(kA)	16	16

** Poles in series: to be completed by user



(1) For ambient 50°C = x0.9, 60°C : x0.8. Pour fusible horizontal: x0.9.

* Use in class B

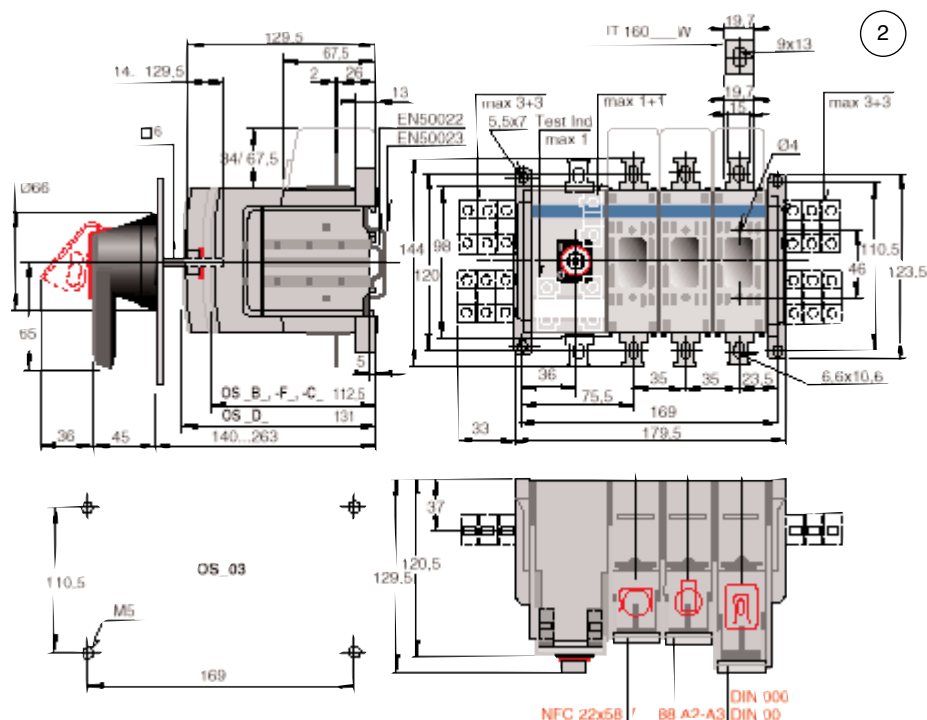
** To be completed by user

Value given at thermal rating, for a switch in open air (I_{th}) and for a shrouded switch (I_{the}) e.g. as in cubicle.

Dimensions and weight ITC Protistor

[illegible]

ITCP 125 III 22 x 58 - ITCP 160 III 27 x 60 - ITCP 160 III 00





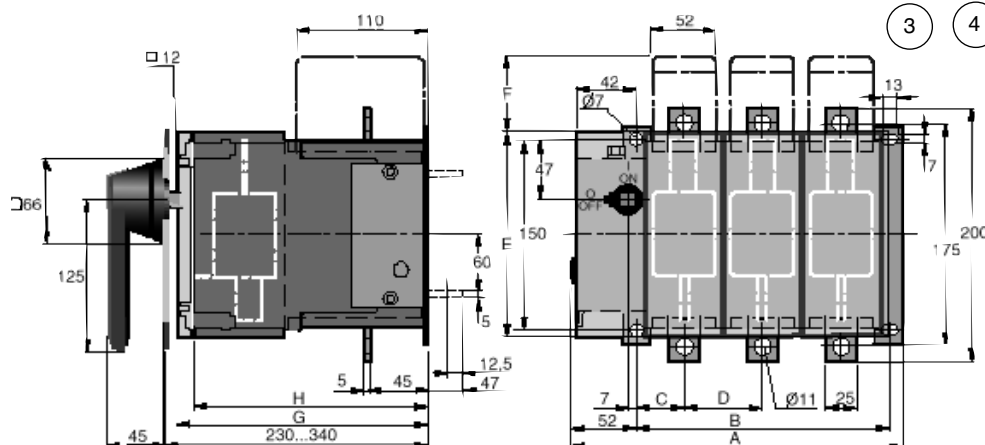
Fused Switches ITCP for Semiconductor Fuses 32 to 800A

TCP 250 III D80 - ITCP 250 III 30 LI - 31 LLI - ITCP 250 III 30-31 TTF
ITCP 250 III 70-71 TTF - ITCP 250 III 30-31 DIN - 110 / 70-71 DIN 110

Weight: 7 kg.

Terminal tightening torque:
Mini.: 30 N.m ■ Maxi.: 44 N.m

Connecting:
torque 25 mm per terminal
with M10 bolt



TCP 400 III D80 - ITCP 400 III 30-32 LI - 31 LLI - 70-72 KI - ITCP 400 III 30-31 TTF
ITCP 400 III 70-71 TTF - ITCP 400 III 30-32 DIN 110 / 70-72 DIN 110

Weight: 8 kg.

Terminal tightening torque:
Mini.: 30 N.m ■ Maxi.: 44 N.m

Connecting:
torque 25 mm per terminal with M10 bolt

	A	B	C	D	E	F	G*	H	*With booster
ITCP 250 D III	262	198	37	62	162	60	199	185	G + 41
ITCP 400 D III	286	222	41	70	180	51	206	192	G + 41

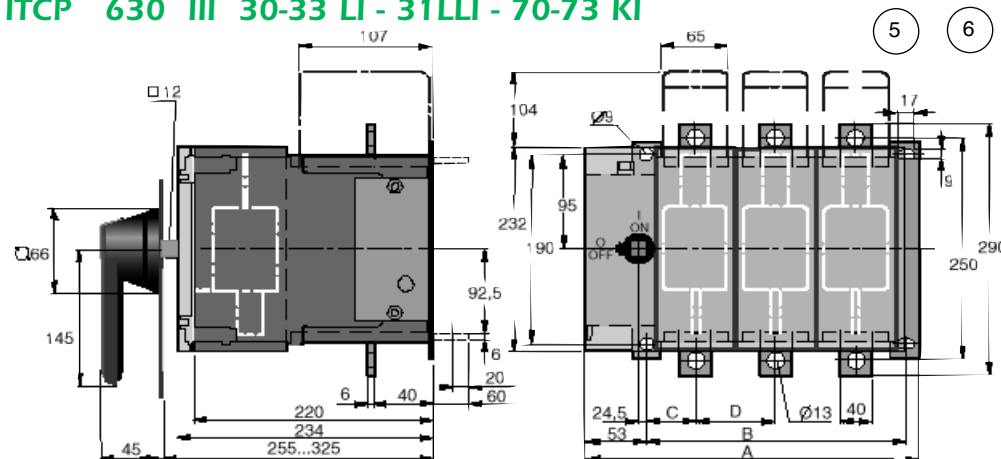
* With protection cover against live part touching, and if blown fuse indication auxiliary contacts are used, lengthening of G is necessary.

ITCP 630 III 30-33 / 70-73 TTF - ITCP 630 III 30-33 / 70-73 DIN 80 to 140
ITCP 630 III 30-33 LI - 31 LLI - 70-73 KI

Weight: 15 kg.

Terminal tightening torque:
Mini.: 50 N.m ■ Maxi.: 75 N.m

Connecting:
torque 40 mm per terminal
with M12 bolt



ITCP 800 III 30-33 / 70-73 TTF - ITCP 800 III 30-33 / 70-73 DIN 80 to 140
ITCP 800 III 30-33 LI - 31 LLI - 70-73 KI

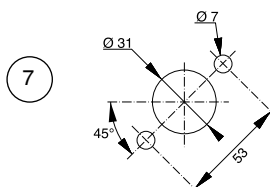
Weight: 19 kg.

Terminal tightening torque:
Mini.: 50 N.m ■ Maxi.: 75 N.m

Connecting:
torque 40 mm per terminal
with M12 bolt

	A	B	C	D	G* With booster
ITCP 630 D III	343	278	59	80	275
ITCP 800 D III	373	308	64	90	275

* With protection cover against live part touching, and if blown fuse indication auxiliary contacts are used, lengthening of G is necessary.



Drilling diagram for
outside control