

# **Accessories Miniature Relay PT**

- Easy replacement of relays on a densely packed DIN rail
- No reduction of protection class or creepage/clearance with plastic retainer
- Plug-in indicator- and protection modules
- Retainer clip with ejection function for relays of 29 mm height
- DIN-rail sockets and accessories: RoHS compliant (Directive 2002/95/EC)

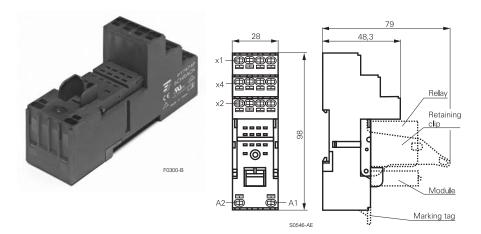


F0263-

#### Premium socket with screwless terminals for DIN rail mounting

**PT 78 74P** Premium socket, logical terminal arrangement, 4 pole **PT 78 72P** Premium socket, logical terminal arrangement, 2 pole

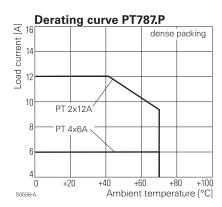
- PT 2/4 pole 6/12 A
- Screwless Clamps
- Mounting of solid wires without tool
- **■** Double Clamps per terminal
- **■** Jumper links for interconnection
- Open coil circuit for active modules
- **■** Logical terminal arrangement



# Approvals REG.-Nr. 115719, c us E135149

Rev. JK1

Technical data	2-pole	4-pole
Rated voltage / max. switching voltage AC	240 / 400 VAC	240 VAC
Rated current	12 A	6 A
Limiting continuous current	see dera	ting curve
Dielectric strength coil-contact circuit	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>
open contact circuit	1200 V <sub>rms</sub>	1200 V <sub>rms</sub>
adjacent contact circuits	2500 V <sub>rms</sub>	2000 V <sub>rms</sub>
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm
adjacent contact circuits	$\geq$ 3.5/9.5 mm	≥1.8/3.5 mm
Material group of insulation parts	ip of insulation parts IIIa	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	ba	sic
open contact circuit	func	tional
adjacent contact circui	its ba	asic
Rated insulation voltage	25	60 V
Pollution degree		21)
Rated voltage system	230 /	400 V
Overvoltage category		II



<sup>1</sup>) with inserted relay pollution degree 1 in region of contact pins / socket inlets.



2 x 1.5 mm<sup>2</sup>

Technical data (Continued)	2-pole	4-pole	
RoHS - Directive 2002/95/EC	compliant		
Ambient temperature range			
for mounting/handling	-25+	-70°C	
in operation	-40+70°C		
Terminals	screwless		
Wire strip length	12 mm		
Wire cross section	oss section		
solid wire	1 x 0.75/1/1.5 mm <sup>2</sup>		
	2 x 0.75	5/1 mm <sup>2</sup>	

with standard isolation (no oversize isolation) stranded wire

without bootlace crimp

1 x 0.75/1/1.5 mm<sup>2</sup> 2 x 0.75/1 mm<sup>2</sup>

without bootlace crimp with standard isolation 2 x 1.5 mm<sup>2</sup> with bootlace crimp 1 x 0.75/1 mm<sup>2</sup> 2 x 0.75 mm<sup>2</sup> 1 x 1.5 mm<sup>2</sup>

with bootlace crimp without isolation or min 18 mm long

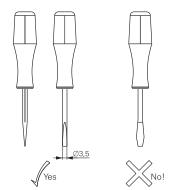
For stranded wires with braids 0.05 mm or smaller the use of bootlace crimps is recommended. When using stranded wires without bootlace crimp the clamp must be opened during insertion.

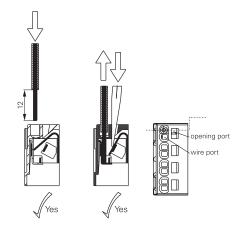
Which daing stranded wires without bootlace em	np the clamp must be op	crica during inscritori.	
Insertion cycles	A (10	))	
Max. Insertion Force total	100 ľ	V	
Mounting distance	≥ 0, dense packing		
Weight	44 g 60 g		
Packaging unit	10 pcs		

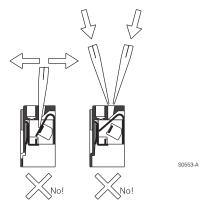
Socket with screwless terminals for DIN rail mounting		
Туре		Part Number
PT 7872P	Premium socket, logical terminal arrangement	
	Socket with screwless terminals 2 pole	1860100-1
PT 7874P	Premium socket, logical terminal arrangement	
	Socket with screwless terminals 4 pole	1860000-1

Accessories for PT 78 72P, PT 78 74P		
Туре		Part Number
PT 17 021	Plastic retaining clip, relay height 29 mm	2-1415526-1
PT 28 800	Metal retaining clip PT, relay height 29 mm	5-1419111-9
PT 17 040	Marking tag	6-1415037-1
PT 17 0P1	Jumper link, max load 12 A	1860214-1

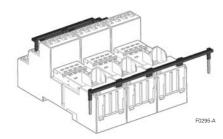
#### How to use, Precautions







Jumper link



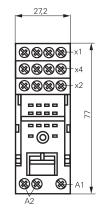
When connecting more than 2 poles with staggered jumper bars the lower bars need to be stripped and shortened to an appropriate length to enable correct fitting.

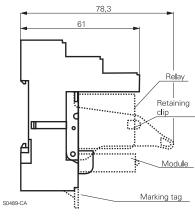


#### PT DIN-rail socket with screw type terminals PT 78 722 / PT 78 742

- Socket with logical arrangement of control/load terminals
- **■** High quality rising clamp terminals
- Captive combination terminal screws
- Second A2 for easier looping
- **■** Jumper bars for interconnection

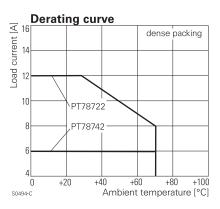






## Approvals

Technical data	2-pole	4-pole	
Rated voltage / max. switching voltage AC	240 / 400 VAC	240 VAC	
Rated current	12 A	6 A	
Limiting continuous current	see derat	ing curve	
Dielectric strength coil-contact circuit	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>	
open contact circuit	1200 V <sub>rms</sub>	1200 V <sub>rms</sub>	
adjacent contact circuits	2500 V <sub>rms</sub>	2000 V <sub>rms</sub>	
Clearance / creepage coil-contact circuit	≥ 4 / 4 mm	$\geq$ 4 / 4 mm	
adjacent contact circuits	$\geq$ 3.5 / 9.5 mm	$\geq$ 1.8 / 3.5 mm	
Material group of insulation parts	[]]	а	
Insulation to IEC 60664-1			
Type of insulation coil-contact circuit	ba	sic	
open contact circuit	funct	ional	
adjacent contact circu	uits ba	sic	
Rated insulation voltage	250		
Pollution degree	2	1)	
Rated voltage system	230 / 400 V		
Overvoltage category	III		
RoHS - Directive 2002/95/EC	compliant		
Ambient temperature range	-40+70°C		
Terminals	screw		
Terminal screw torque acc. IEC 61984	0.5 Nm		
max.	0.7	Nm	
Wire cross section			
single wire	2 x 2.5 mm <sup>2</sup>		
fine wire	$2 \times 2.5  \text{mm}^2$		
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm <sup>2</sup>		
Insertion cycles	A (10)		
Max. Insertion Force total	100 N		
Mounting distance	≥ 0, dense packing		
Weight	44 g 60 g		
Packaging unit	10)	ocs	

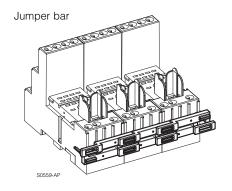


<sup>&</sup>lt;sup>1</sup>) with inserted relay pollution degree 1 in region of contact pins / socket inlets.



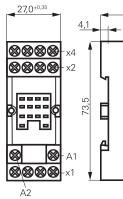
DIN-rail socket with screw type terminals, In/Out arrangement		
Туре		Part Number
PT 78 722	DIN-rail socket with screw type terminals,	
	In/Out arrangement 2 pole	1415526-1
PT 78 742	DIN-rail socket with screw type terminals,	
	In/Out arrangement 4 pole	1-1415526-1

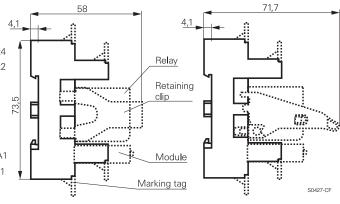
Accessories	s for PT 78 722, PT 78 742	
Туре		Part Number
PT 17 021	Plastic retaining clip, relay height 29 mm	2-1415526-1
PT 28 800	Metal retaining clip PT, relay height 29 mm	5-1419111-9
PT 17 040	Marking tag	6-1415037-1
PT 17 0R6	Jumper bar, max load 12 A	1860517-5
	for connection of up to 6 PT sockets	



#### PT DIN-rail socket with screw type terminals PT 78 720/730/740/741



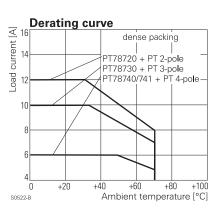




#### **Approvals**

Technical data	2-pole	3-pole	4-pole
Rated voltage / max. switching voltage AC		240 / 400 VAC	
Rated current	12 A	10 A	6 A
Limiting continuous current	S	ee derating curv	/e
Dielectric strength coil-contact circuit	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>
open contact circuit	1200 V <sub>rms</sub>	1200 V <sub>rms</sub>	1200 V <sub>rms</sub>
adjacent contact circuits	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>	2000 V <sub>rms</sub>
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm	≥ 4/4 mm
adjacent cont. circuits	$\geq$ 3.5/9.5 mm	$\geq$ 2.6/3.5 mm	≥ 1.8/3.5 mm
Material group of insulation parts		Illa	
Insulation to IEC 60664-1			
Type of insulation coil-contact circuit	basic	basic	basic
open contact circuit	functional	functional	functional
adjacent contact circuits	basic	basic	functional
Rated insulation voltage		250 V	
Pollution degree		2	
Rated voltage system		230 / 400 V	
Overvoltage category		III	
RoHS - Directive 2002/95/EC		compliant	
Ambient temperature range		-40+70°C	
Terminals		screw	
Terminal screw torque acc. IEC 61984		0.5 Nm	
max.	0.7 Nm		
Wire cross section			
single wire	2 x 2.5 mm <sup>2</sup>		
fine wire	2 x 2.5 mm <sup>2</sup>		
with bootlace crimp (DIN 46228/1)		2 x 1.5 mm <sup>2</sup>	

S0427-DB

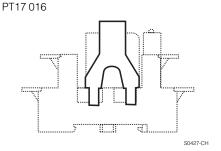


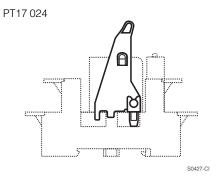


Technical data (Continued)	2-pole	3-pole	4-pole
Insertion cycles		A (10)	
Max. Insertion Force total		100 N	
Mounting distance	≥ 0, dense packing		
Weight	41 g	48 g	55 g
Packaging unit	-	10 pcs	

DIN-rail socket with screw type terminals		
Туре		Part Number
PT 78 720	DIN-rail socket with screw type terminals, 2 pole	6-1415034-1
PT 78 730	DIN-rail socket with screw type terminals, 3 pole	9-1415071-1
PT 78 740	DIN-rail socket with screw type terminals, 4 pole	4-1415033-1
PT 78 741	DIN-rail socket with screw type terminals, 4 pole	
	package with protection diode module A1+, A2-	5-1415034-1

Accessories	for PT 78 720, PT 78 730, PT 78 740, PT 78 741	
Туре		Part Number
PT 17 016	Plastic retaining clip PT, relay height 29 mm	5-1415037-1
PT 17 024	Plastic retaining clip PT with ejecting function,	
	relay height 29 mm	1816124-1
PT 28 800	Metal retaining clip PT, relay height 29 mm	5-1419111-9
PT 17 040	Marking tag	6-1415037-1
PT 17 0R6	Jumper bar, max load 12 A	1860517-5
	for connection of up to 6 PT sockets	





#### Marking tags

- White marking area 28 x 6 mm
- Snaps on socket in up to 4 positions

## LED- and Protection Modules for PT 78 72P, PT 78 74P, PT 78 722, PT 78 742, PT 78 720, PT 78 730, PT 78 740

Easy insertion of module into the socket Wiring in parallel to the coil

EM31

EM29

PTM D0 730

PTM R0 730

TTIIIII 9 III Paia	1101 10 1110	7 0011
Туре		
PTM TO 0A0	EM09	Protection diode (standard, A1+, A2-)
PTM TO OLO	EM01	Protection diode (A1-, A2+)
PTM U0 524	EM02	RC-network 660 VAC
PTM U0 730	EM03	RC-network 110230 VAC
PTM V0 524	EM04	Varistor 24 VAC
PTM V0 615	EM13	Varistor 115 VAC
PTM V0 730	EM05	Varistor 230 VAC

EM18	red LED 624 VDC w. prot.diode (std, A1+, A2-)	5-1415036-1
EM12	green LED 624 VDC w. prot.diode (std, A1+, A2-)	2-1415036-1
EM08	red LED 624 VDC w. prot. diode (A1-, A2+)	8-1415036-1
EM16	red LED 2460 VDC w. prot.diode (std, A1+, A2-)	5-1415539-3
EM25	green LED 2460 VDC w. prot.diode (std, A1+, A2-)	7-1415539-7
EM19	red LED 60110 VDC w. prot. diode (A1+, A2-)	2-1415392-1
EM26	green LED 60110 VDC w. prot diode (A1+, A2-)	1-1415539-7
EM27	red LED 110220 VDC w. prot. diode (A1+, A2-)	1-1415539-4
EM28	green LED 110220 VDC w. prot diode (A1+, A2-)	1-1415539-6
EM07	red LED 624 VDC/VAC	6-1415036-1
EM11	green LED 624 VDC/VAC	3-1415036-1
EM14	red LED 2460 VDC/VAC	1-1415539-3
	EM12 EM08 EM16 EM25 EM19 EM26 EM27 EM28 EM07 EM11	EM12 green LED 624 VDC w. prot.diode (std, A1+, A2-) EM08 red LED 624 VDC w. prot. diode (A1-, A2+) EM16 red LED 2460 VDC w. prot.diode (std, A1+, A2-) EM25 green LED 2460 VDC w. prot.diode (std, A1+, A2-) EM19 red LED 60110 VDC w. prot. diode (A1+, A2-) EM26 green LED 60110 VDC w. prot. diode (A1+, A2-) EM27 red LED 110220 VDC w. prot. diode (A1+, A2-) EM28 green LED 110220 VDC w. prot. diode (A1+, A2-) EM37 red LED 624 VDC/VAC EM11 green LED 624 VDC/VAC

Residual current bypass RC 110...230 VAC
Residual current bypass resistor 110...230 VAC

PTM L0 024	EM18	red LED 624 VDC w. prot.diode (std, A1+, A2-)	5-1415036-1
PTM G0 024	EM12	green LED 624 VDC w. prot.diode (std, A1+, A2-)	2-1415036-1
PTM L1 024	EM08	red LED 624 VDC w. prot. diode (A1-, A2+)	8-1415036-1
PTM L0 060	EM16	red LED 2460 VDC w. prot.diode (std, A1+, A2-)	5-1415539-3
PTM G0 060	EM25	green LED 2460 VDC w. prot.diode (std, A1+, A2-)	7-1415539-7
PTM L0 110	EM19	red LED 60110 VDC w. prot. diode (A1+, A2-)	2-1415392-1
PTM G0 110	EM26	green LED 60110 VDC w. prot diode (A1+, A2-)	1-1415539-7
PTM L0 220	EM27	red LED 110220 VDC w. prot. diode (A1+, A2-)	1-1415539-4
PTM G0 220	EM28	green LED 110220 VDC w. prot diode (A1+, A2-)	1-1415539-6
PTM L0 524	EM07	red LED 624 VDC/VAC	6-1415036-1
PTM G0 524	EM11	green LED 624 VDC/VAC	3-1415036-1
PTM L0 560	EM14	red LED 2460 VDC/VAC	1-1415539-3
PTM G0 560	EM30	green LED 2460 VDC/VAC	1-1415539-5
PTM L0 730	EM06	red LED 110230 VAC	7-1415036-1
PTM G0 730	FM10	green LED 110 230 VAC	4-1415036-1

### Relay Packages

Complete packages consisting of a relay mounted on a socket: see Relay Package PT





E0231-Δ F0232-A

Rev. JK1

Part Number 9-1415036-1 1415037-1 1-1415037-1 2-1415037-1 3-1415037-1 6-1415365-1

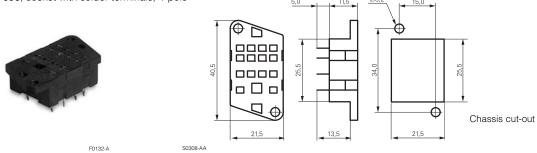
4-1415037-1

1415037-2 <u>1-141</u>5539-2

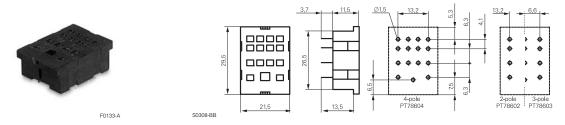


#### PT sockets for PCB mount and with solder terminals

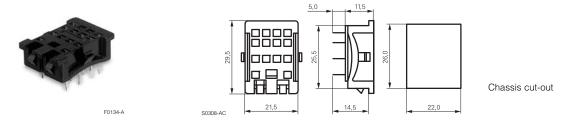
PT 78 600, socket with solder terminals, 4-pole



PT 78 602, PT 78 603, PT 78 604, socket with PCB terminals, 2-, 3- and 4-pole



PT 78 601, socket with solder terminals, 4-pole



Technical data	2-pole	3-pole	4-pole
Rated voltage / max. switching voltage AC		240 / 400 VAC	•
Rated current	12 A	10 A	6 A
Dielectric strength coil-contact circuit	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>
open contact circuit	1200 V <sub>rms</sub>	1200 V <sub>rms</sub>	1200 V <sub>rms</sub>
adjacent contact circuits	2500 V <sub>rms</sub>	2500 V <sub>rms</sub>	2000 V <sub>rms</sub>
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm	≥ 4/4 mm
adjacent cont. circuits	$\geq$ 3.5/9.5 mm	$\geq$ 2.6/3.5 mm	≥ 1.8/3.5 mm
Material group of insulation parts		IIIa	
Insulation to IEC 60664-1			
Type of insulation coil-contact circuit	basic	basic	basic
open contact circuit	functional	functional	functional
adjacent contact circuits	basic	basic	functional
Rated insulation voltage		250 V	
Pollution degree		2	
Rated voltage system		230 / 400 V	
Overvoltage category		III	



Technical data (Continued)	2-pole	3-pole	4-pole
RoHS - Directive 2002/95/EC	compliant as per product date code 0517		
Ambient temperature range	-40+80°C		
Terminals	pcb, solder terminals		
Insertion cycles		A (10)	_
Max. Insertion Force total	100 N		
Mounting distance	≥ 0, dense packing		
Resistance to soldering heat	270°C / 10 s		
Weight	6 g	7 g	7 g
Packaging unit		25 pcs	

PT sockets		
Туре		Part Number
PT 78 600	Socket with solder terminals, 4 pole	4-1415043-1
PT 78 602	Socket with PCB terminals, 2 pole	5-1415043-1
PT 78 603	Socket with PCB terminals, 3 pole	1393162-5
PT 78 604	Socket with PCB terminals, 4 pole	3-1415043-1
PT 78 601	Socket with solder terminals, 4 pole	6-1415043-1

Accessories for PT 78 600, PT 78 601, PT 78 602, PT 78 603, PT 78 604			
Туре		Part Number	
PT 28 802	Metal retaining clip PT, relay height 29 mm	1393162-1	

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