

**Miniature Relay PT**

- 2 pole 12 A, 3 pole 10 A or 4 pole 6 A, 2, 3 or 4 CO contacts
- DC- or AC-coil
- Switching performance up to 3000 VA
- Relay height 29 mm
- Mechanical indicator, optional LED and protection diode
- Manual test tab, optionally lockable.
- White marking tabs
- RoHS compliant (Directive 2002/95/EC)



F0191-A

**Applications**

Universal use in control and automation

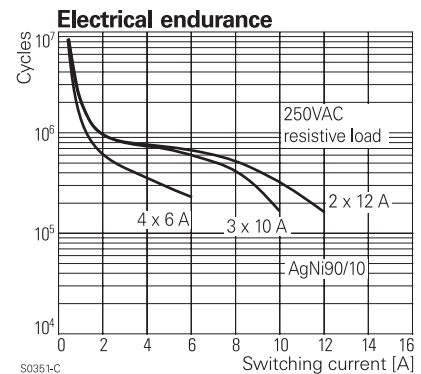
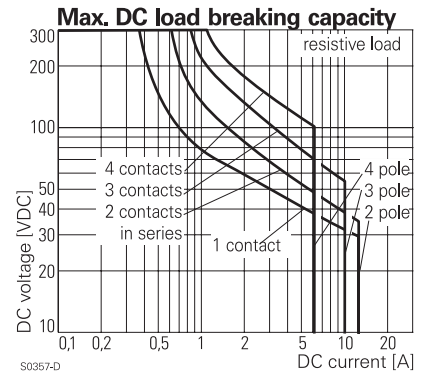
**Approvals**

VDE REG.-Nr. 115719, c **RU** us E214025, **UL** 00/20059(E2)  
 Technical data of approved types on request

Contact data	PT2	PT3	PT5
Contact configuration	2 CO	3 CO	4 CO
Contact set	single contact		
Type of interruption	micro disconnection		
Rated current	12 A	10 A	6 A
Rated voltage / max.switching voltage AC	240/400 VAC	240/400 VAC	240/240 VAC
Maximum breaking capacity AC	3000 VA	2500 VA	1500 VA
Limiting making capacity, max 20 ms	24 A	20 A	12 A
Contact material	AgNi90/10, AgNi90/10 gold plated		
Minimum contact load	12V/10mA, 20mV/1mA gold plated		
Mechanical endurance DC coil	30x10 <sup>6</sup> cycles		
AC coil	20x10 <sup>6</sup> cycles		
Rated frequency of operation with / without load	6/600 min <sup>-1</sup>		

**Contact ratings**

Type	Load	Cycles
PT270	12 A, 250 VAC, 3000 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	168x10 <sup>3</sup>
PT270	8 A, 250 VAC, 2000 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	750x10 <sup>3</sup>
PT270	4 A, 250 VAC, 1000 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	8.3x10 <sup>6</sup>
PT270	3.75 A, 400 VAC, opp. polarity, 70°C, AC3	
PT270	5 A, 250 VAC, opp. polarity, normal/abnormal, 70°C, AC15	
PT270	8 A, 24 VDC, opp. polarity, normal/abnormal, 70°C, DC13	
PT270	1.7 A, 230 VAC, 400 W, opp. polarity, 70°C, AC5b	
PT370	10 A, 250 VAC, 2500 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	159x10 <sup>3</sup>
PT370	8 A, 250 VAC, 2000 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	466x10 <sup>3</sup>
PT370	4 A, 250 VAC, 1000 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	1.1x10 <sup>6</sup>
PT370	2 A, 400 VAC, opp. polarity, 70°C, AC3	
PT370	5 A, 250 VAC, opp. polarity, normal/abnormal, 70°C, AC15	
PT370	8 A, 24 VDC, opp. polarity, normal/abnormal, 70°C, DC13	
PT370	1.7 A, 230 VAC, 400 W, opp. polarity, 70°C, AC5b	
PT570	6 A, 250 VAC, 1500 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	228x10 <sup>3</sup>
PT570	2 A, 250 VAC, 500 VA, cosφ=1, DF 50%, 600 h <sup>-1</sup> , NO, 70°C	782x10 <sup>3</sup>
PT570	3 A, 400 VAC, opp. polarity, 70°C, AC3	
PT570	4 A, 250 VAC, opp. polarity, normal/abnormal, 70°C, AC15	
PT570	6 A, 24 VDC, opp. polarity, normal/abnormal, 70°C, DC13	
PT570	1.7 A, 230 VAC, 400 W, opp. polarity, 70°C, AC5b	
PT570	0.3 A, 110 VDC, 33 W, L/R=22 ms, 1440 h <sup>-1</sup> , DF 8%, NO, prot.D.	3.6x10 <sup>6</sup>
PT570	3 A on / 1 A off, 120 VAC, cosφ 0.8on/0.5off, 600h <sup>-1</sup> , DF 15%, NO	423x10 <sup>3</sup>



**Miniature Relay PT (Continued)**

**Coil data**

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...230 VAC
Coil power DC coil	0.75 mW
AC coil	1.0 VA
Operative range DC coil, AC-coil 50Hz	2
AC coil 60 Hz at 70°C, % of $U_{rtd}$	90..110%

**Coil versions, DC-coil**

Coil code	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power	opt. LED power		
STD	LED	LED+						
bipolar	PD*	VDC	VDC	VDC	Ohm	mW		
006	L06	LA6	6	4.5	0.6	48+10%	750	3.5
012	L12	LB2	12	9.0	1.2	192+10%	750	10
024	L24	LC4	24	18.0	2.4	777+10%	741	18
048	L48	LE8	48	36.0	4.8	3072+10%	750	38
060	L60	LG0	60	45.0	6.0	4845+12%	743	56
110	M10	MB0	110	82.5	11.0	16133+15%	750	96.5
220	N20	NC0	220	165.0	22.0	64533+15%	750	202.5

All figures are given for coil without preenergization, at ambient temperature +23°C

\*) Protection diode PD; standard polarity: +A1 / -A2

**Coil versions, AC-coil 50/60 Hz**

Coil code	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power	
STD	LED	50/60Hz	50/60Hz		50/60Hz	
		VAC	VAC	Ohm	VA	
506	R06	6	4.8/5.4	1.8	11±10%	1.0/0.85
512	R12	12	9.6/10.8	3.6	48±10%	1.0/0.85
<b>524</b>	<b>R24</b>	<b>24</b>	<b>19.2/21.6</b>	<b>7.2</b>	<b>192±10%</b>	<b>1.0/0.79</b>
548	R48	48	38.4/43.2	14.4	777±10%	1.0/0.87
560	R60	60	48.0/54.0	18.0	1306±10%	1.0/0.87
615	S15	115	92.0/103.5	34.5	4845±12%	1.0/0.86
<b>730</b>	<b>T30</b>	<b>230</b>	<b>184.0/207.0</b>	<b>69.0</b>	<b>19465±15%</b>	<b>1.0/0.90</b>

All figures are given for coil without preenergization, at ambient temperature +23°C

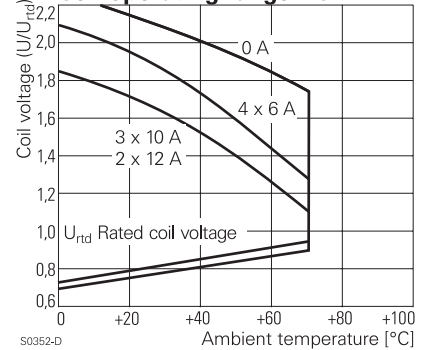
**Insulation**

	PT2	PT3	PT5
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 contact circuits	≥ 3.5/9.5 mm	≥ 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	250 V	250 V
Pollution degree	2	2	2
Rated voltage system	240/400 V	240 V	240 V
Overvoltage category	III	III	III

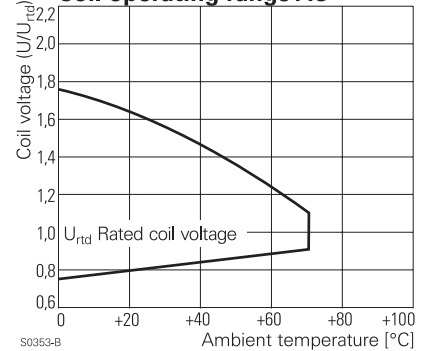
**Other data**

RoHS - Directive 2002/95/EC	compliant
Ambient temperature range	-40...+70°C
Operate time	15 ms
Release time without / with protection diode	10 / 18 ms
Bounce time NO / NC contact	5 ms
Vibration resistance (function) NO / NC contact	7/4 g
Shock resistance (function) NO / NC contact	20/5 g
Category of protection	RTII- flux proof
Mounting distance	0 mm, dense packing
Resistance to soldering heat	270°C / 10s
Relay weight	30 g
Packaging unit	10/250 pcs

**Coil operating range DC**



**Coil operating range AC**



**Miniature Relay PT (Continued)**

**Accessories**

For details see datasheet

Accessories Miniature Relay PT

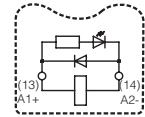
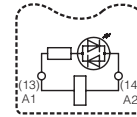
Circuit

LED

protection diode+LED

**Relay Packages**

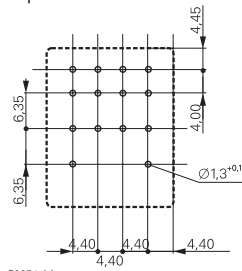
Complete packages consisting of a relay mounted on a socket see Package PT



**PCB layout / terminal assignment**

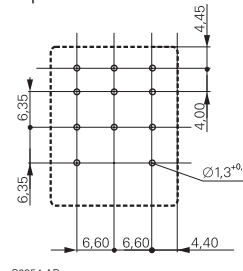
Bottom view on pins

4-pole



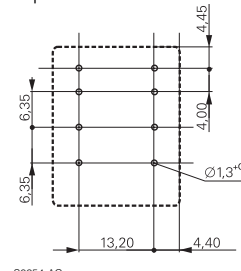
S0354-AA

3-pole

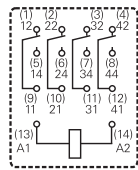


S0354-AB

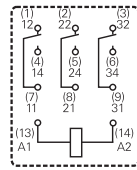
2-pole



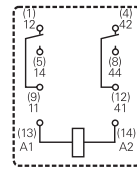
S0354-AC



S0354-AD



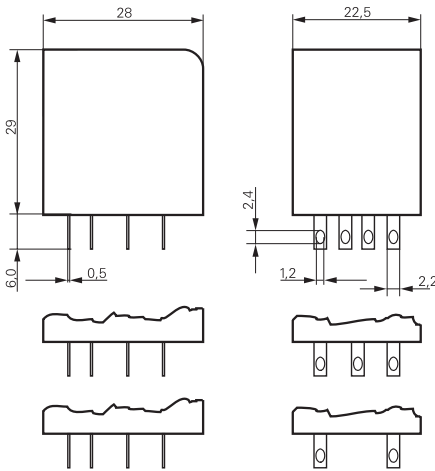
S0354-AE



S0354-AF

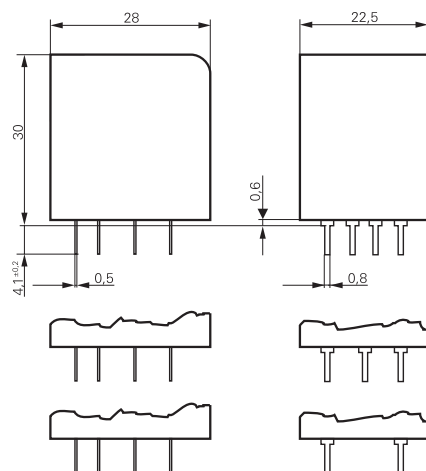
**Dimensions**

Solder- and plug-in terminals (standard version)



S0355-AA

PCB version



S0355-BB

**Product key**

Type

Contact configuration

- 2** 2 CO contacts
- 3** 3 CO contacts
- 5** 4 CO contacts

Contact material

- 7** AgNi 90/10, with test button\*)
- 8** AgNi 90/10 gold plated, with test button\*)

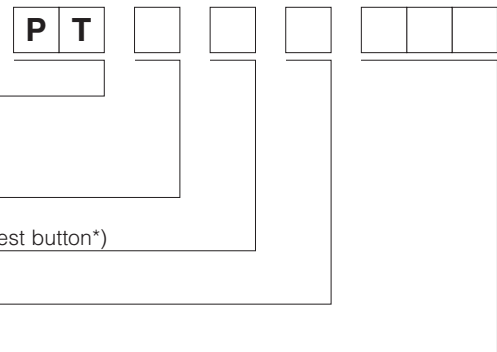
Version

- 0** standard, 2.8 mm quick connect term.
- 1** PCB terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

\*) Version with closed cap without test button available on request  
Other types on request



**Miniature Relay PT** (Continued)

Product key	Cont. Config.	Cont. material	Version	Coil	Coil	Part number				
PT270024	2 CO contacts	AgNi 90/10 test button	AMP 2.8 connectors	DC-coil	24 VDC	4-1419111-2				
PT270524				AC-coil	24 VAC	4-1419111-8				
PT270615					115 VAC	5-1419111-0				
PT270730					230 VAC	5-1419111-1				
PT270L24					DC-coil+LED	24 VDC	9-1415001-1			
PT270R24					AC-coil+LED	24 VAC	0-1415002-1			
PT270S15						115 VAC	2-1415039-1			
PT270T30						230 VAC	3-1415002-1			
PT271024					PCB terminals	DC-coil	24 VDC	5-1419111-3		
PT271524						AC-coil	24 VAC	5-1419111-6		
PT271615							115 VAC	4-1419135-0		
PT271730							230 VAC	5-1419111-8		
PT370024				3 CO contacts		AgNi 90/10 test button	AMP 2.8 connectors	DC-coil	24 VDC	6-1419111-1
PT370524								AC-coil	24 VAC	6-1419111-6
PT370615		115 VAC	6-1419111-8							
PT370730		230 VAC	6-1419111-9							
PT370L24		DC-coil+LED	24 VDC		5-1415002-1					
PT370R24		AC-coil+LED	24 VAC		7-1415002-1					
PT370S15			115 VAC		9-1415039-1					
PT370T30			230 VAC		9-1415002-1					
PT371024		PCB terminals	DC-coil		24 VDC			7-1419111-1		
PT371524			AC-coil		24 VAC			7-1419111-3		
PT371615					115 VAC			0-1393154-8		
PT371730					230 VAC			7-1419111-5		
PT570024	4 CO contacts		AgNi 90/10 test button		AMP 2.8 connectors			DC-coil	24 VDC	1-1393154-2
PT570524								AC-coil	24 VAC	8-1419111-7
PT570615				115 VAC		9-1419111-0				
PT570730				230 VAC		9-1419111-1				
PT570L24				DC-coil+LED		24 VDC	6-1415001-1			
PT570R24				AC-coil+LED		24 VAC	7-1415001-1			
PT570S15						115 VAC	7-1415003-1			
PT570T30						230 VAC	8-1415001-1			
PT571024				PCB terminals		DC-coil	24 VDC	9-1419111-3		
PT571524						AC-coil	24 VAC	9-1419111-6		
PT571615							115 VAC	1-1393154-5		
PT571730							230 VAC	9-1419111-8		
PT580024		AgNi 90/10 gold plated test button				AMP 2.8 connectors	DC-coil	24 VDC	1-1393154-7	
PT580524							AC-coil	24 VAC	2-1393154-1	
PT580730			230 VAC	2-1393154-2						
PT580L24			DC-coil+LED	24 VDC	5-1415026-1					
PT580R24			AC-coil+LED	24 VAC	6-1415026-1					
PT580T30				230 VAC	7-1415026-1					
PT581024			PCB terminals	DC-coil	24 VDC		7-1419135-2			
PT581730				AC-coil	230 VAC		2-1393154-3			