

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

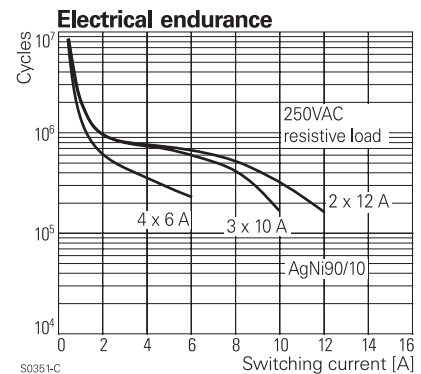
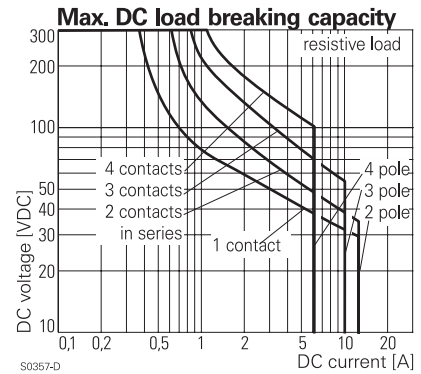
Approvals

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 ⁶ cycles		
AC coil	20x10 ⁶ cycles		
Rated frequency of operation with / without load	6/600 min ⁻¹		

Contact ratings

Type	Load	Cycles
PT270	12 A, 250 VAC, 3000 VA, cosφ=1, DF 50%, 600 h ⁻¹ , NO, 70°C	168x10 ³
PT270	8 A, 250 VAC, 2000 VA, cosφ=1, DF 50%, 600 h ⁻¹ , NO, 70°C	750x10 ³
PT270	4 A, 250 VAC, 1000 VA, cosφ=1, DF 50%, 600 h ⁻¹ , NO, 70°C	8.3x10 ⁶
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 ⁻¹ , NO, 70°C	159x10 ³
PT370	8 A, 250 VAC, 2000 VA, cosφ=1, DF 50%, 600 h ⁻¹ , NO, 70°C	466x10 ³
PT370	4 A, 250 VAC, 1000 VA, cosφ=1, DF 50%, 600 h ⁻¹ , NO, 70°C	1.1x10 ⁶
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 ⁻¹ , NO, 70°C	228x10 ³
PT570	2 A, 250 VAC, 500 VA, cosφ=1, DF 50%, 600 h ⁻¹ , NO, 70°C	782x10 ³
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 ⁻¹ , DF 8%, NO, prot.D.	3.6x10 ⁶
PT570	3 A on / 1 A off, 120 VAC, cosφ 0.8on/0.5off, 600h ⁻¹ , DF 15%, NO	423x10 ³



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	Ohm	mW	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

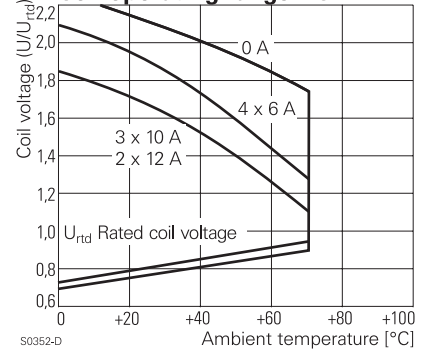
*) Protection diode PD; standard polarity: +A1 / -A2

Coil versions, AC-coil 50/60 Hz

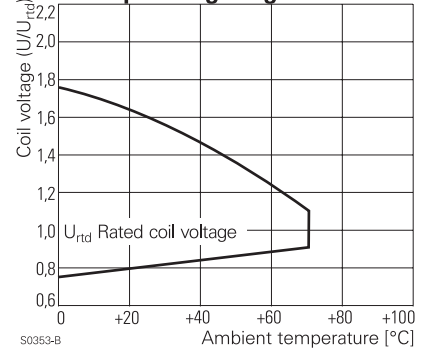
Coil code	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power	
STD	LED	50/60Hz	50/60Hz		50/60Hz	
		VAC	VAC	Ohm	VA	
506	R06	6	4.8/5.4	1.8	11±10%	1.0/0.85
512	R12	12	9.6/10.8	3.6	48±10%	1.0/0.85
524	R24	24	19.2/21.6	7.2	192±10%	1.0/0.79
548	R48	48	38.4/43.2	14.4	777±10%	1.0/0.87
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
730	T30	230	184.0/207.0	69.0	19465±15%	1.0/0.90

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

Coil operating range DC



Coil operating range AC



Insulation

	PT2	PT3	PT5
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}	2000 V _{rms}
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

Miniature Relay PT (Continued)

Accessories

For details see datasheet

Accessories Miniature Relay PT

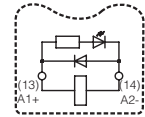
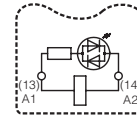
Circuit

LED

protection diode+LED

Relay Packages

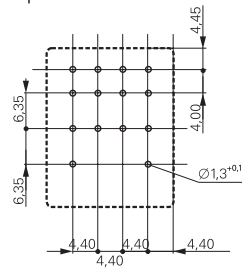
Complete packages consisting of a relay mounted on a socket see Package PT



PCB layout / terminal assignment

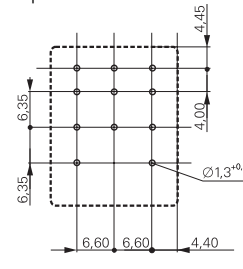
Bottom view on pins

4-pole



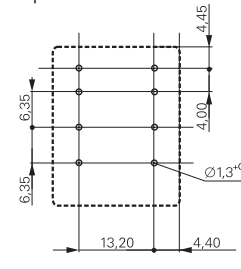
S0354-AA

3-pole

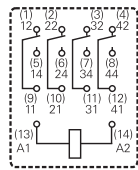


S0354-AB

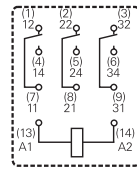
2-pole



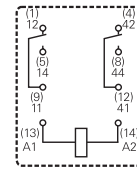
S0354-AC



S0354-AD



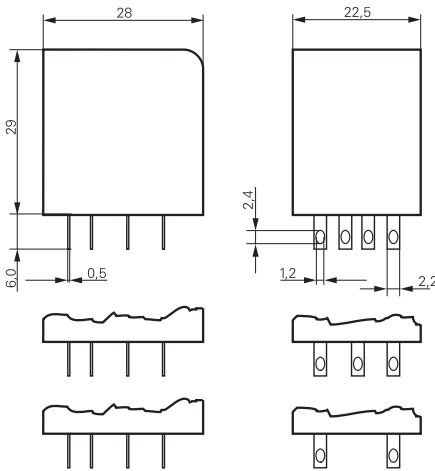
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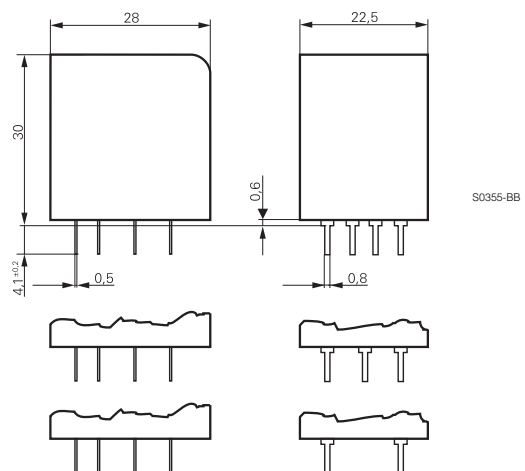
S0354-AF

Dimensions

Solder- and plug-in terminals (standard version)



PCB version



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*)

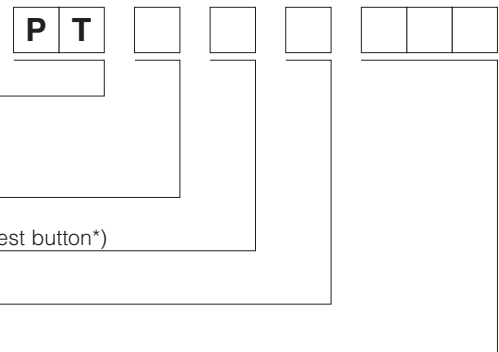
Version

- 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			