

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



FD191-B

Applications

Universal use in control and automation

Approvals

VDE REG.-Nr. 115719, **UL** E214025, **CCC** 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 voltage / max. switching voltage AC	240 / 400 VAC	240 / 400 VAC	240/240 VAC
Rated current	12 A	10 A	6 A
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		
Rated frequency of operation with / without load	6/600 min ⁻¹		
Operate time	typ 15 ms		
Release time DC coil without / with protection diode	typ 10 / 18 ms		
Bounce time DC coil NO / NC contact	typ 6 / 8 ms		

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
------	---------	------	--------------------	--------

IEC 61810

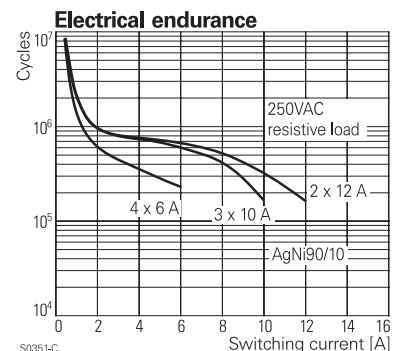
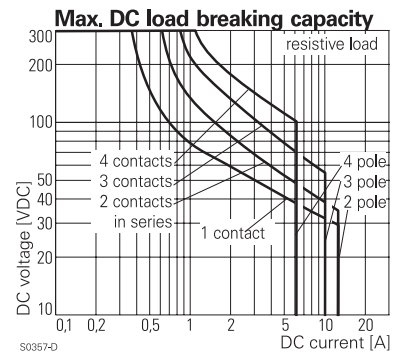
PT 2 DC/AC-coil CO	CO	12 A, 250 VAC, cosφ=1	70°C	70x10 ³
PT 2 DC/AC-coil NO of CO	CO	9 A, 250 VAC, cosφ=1	80°C	150x10 ³
PT 2 DC/AC-coil NO of CO	CO	4 A, 250 VAC, cosφ=1	80°C	300x10 ³
PT 3 DC/AC-coil CO	CO	10 A, 250 VAC, cosφ=1	70°C	100x10 ³
PT 5 DC/AC-coil CO	CO	6 A, 250 VAC, cosφ=1	70°C	100x10 ³

UL 508

PT 2	CO	12 A, 250 VAC, general purpose	70°C	6.000
PT 2	CO	12 A, 250 VAC, resistive	70°C	100x10 ³
PT 2	NO of CO	12 A, 250 VAC, resistive	70°C	100x10 ³
PT 2	NC of CO	12 A, 250 VAC, resistive	70°C	100x10 ³
PT 3	CO	10 A, 250 VAC, general purpose	70°C	6.000
PT 3	CO	10 A, 250 VAC, resistive	70°C	100x10 ³
PT 3	NO of CO	10 A, 250 VAC, resistive	70°C	100x10 ³
PT 3	NC of CO	10 A, 250 VAC, resistive	70°C	100x10 ³
PT 5	CO	6 A, 250 VAC, general purpose	70°C	6.000
PT 5	CO	6 A, 250 VAC, resistive	70°C	100x10 ³
PT 5	NO of CO	6 A, 250 VAC, resistive	70°C	100x10 ³
PT 5	NC of CO	6 A, 250 VAC, resistive	70°C	100x10 ³

EN60947-4-1

PT 2	NO of CO	400 VAC, 3,75 A, AC3, opposite polarity	70°C	
PT 2	NO of CO	230 VAC, 1,7A, AC5b (400W lamp load), opposite polarity	70°C	
PT 3	NO of CO	250 VAC, 2 A, AC3, opposite polarity	70°C	
PT 3	NO of CO	230 VAC, 1,7A, AC5b (400W lamp load), opposite polarity	70°C	
PT 5	NO of CO	250 VAC, 3 A, AC3, same polarity	70°C	
PT 5	NO of CO	230 VAC, 1,7A, AC5b (400W lamp load), same polarity	70°C	



Miniature Relay PT (Continued)

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...230 VAC
Operative range to IEC 61810 DC coil, AC-coil 50Hz	2
AC coil 60 Hz at 70°C, % of U _{rtid}	90..110%

Coil versions, DC-coil

Coil code	STD	LED	LED+ bipolar	LED+ PD*	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW	opt. LED power 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		LGO		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	STD	LED	Rated voltage VAC	Operate voltage 50 / 60 Hz VAC	Release voltage 50 / 60 Hz VAC	Coil resistance Ohm	Rated coil power 50 / 60 Hz 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

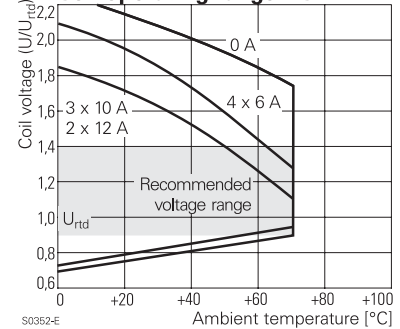
Insulation

	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 cont. 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 61810-1			
Type of insulation coil-contact circuit	basic	basic	basic
open contact circuit	micro disc.	micro disc.	micro disc.
adjacent contact circuits	basic	basic	functional
Rated insulation voltage	250 V	250 V	250 V
Pollution degree	2	2	2
Rated voltage system	230 / 400 V	240 V	240 V
Overvoltage category	III	III	III

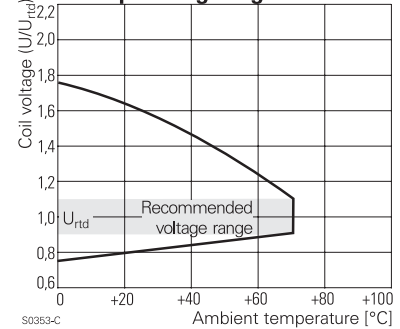
Other data

Mechanical endurance DC coil	30x10 ⁶ cycles
AC coil	20x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature range	-40...+70°C
Vibration resistance (function) NO / NC contact	7/4 g
Shock resistance (function) NO / NC contact	20/5 g
Category of protection	RTII - flux proof
Processing	
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)

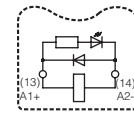
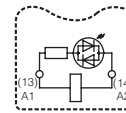
Accessories

For details see datasheet Accessories Miniature Relay PT
 NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

Circuit

LED

protection diode+LED



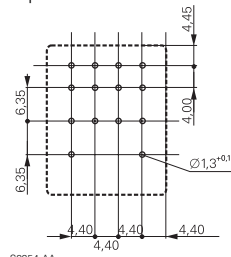
Relay Packages

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

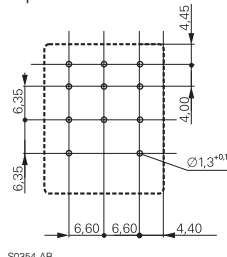
PCB layout / terminal assignment

Bottom view on pins

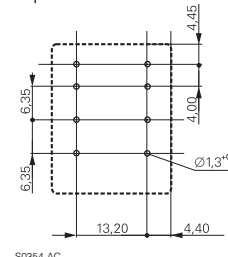
4-pole



3-pole



2-pole



S0354-AA

S0354-AD

S0354-AB

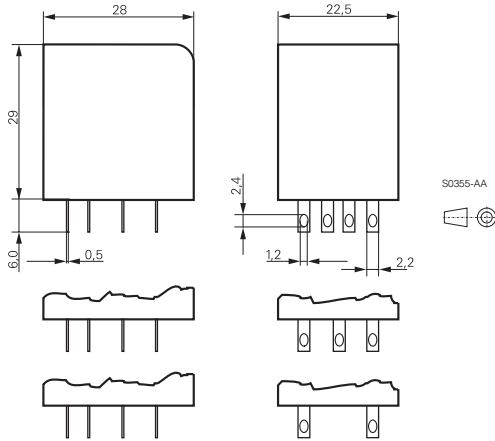
S0354-AE

S0354-AC

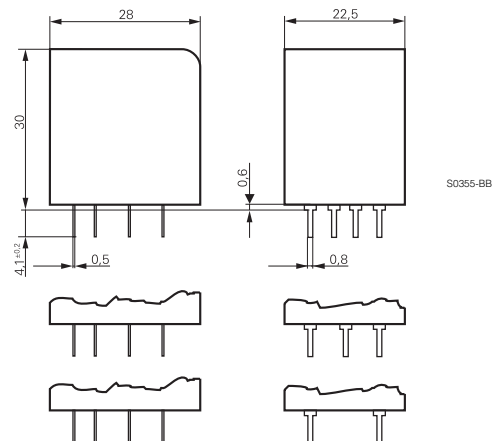
S0354-AF

Dimensions

Solder- and plug-in terminals (standard version)



PCB version



Product key

Typical product key

PT 5 7 0 730

Type

PT Miniature Relay PT

Contact configuration

- 2** 2 CO contacts (2 form C)
- 3** 3 CO contacts (3 form C)
- 5** 4 CO contacts (4 form C)

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	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	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					
PT570LC4		DC-coil+LED+PD					7-1415541-0					
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						