

# Multimode Relay MT

2 / 3 pole 10 A, DC- or AC-coil



F0161-A

## Features

- 2 C/O or 3 C/O contacts
- Cadmium-free contacts
- DC and AC coils
- Mechanical indicator as standard
- Electrical indicator
- New test system with front operated finger protected push-to-test button and integral locking test tab
- White write on panel

## Applications

Mechanical engineering, plant control



Technical data of approved types on request

## Contact data

Configuration	2 C/O contact or 3 C/O contact	
Type of contact	single contacts	bifurcated contacts
Rated current	10 A	4 A
Rated voltage / max.breaking voltage AC	250 Vac / 440 Vac	
Maximum breaking capacity AC	2500 VA	500 VA
Make current (max. 4 s at duty cycle 10%)	20 A	8 A
Contact material	AgNi 90/10	
Minimum contact load	24 V, 10 mA / 20 mV, 1 mA gold plated	

## Contact ratings

Type	Load	Operations	Standard
MT321	10 A, 250 Vac, C/O contact	1x10 <sup>5</sup>	VDE 0435

## Coil data

Nominal voltage	DC coil	6...220 Vdc
	AC coil	6...230 Vac
Nominal coil power	DC coil	typ. 1.2 W
	AC coil	typ. 2.3 VA
Operate category	1 / a	

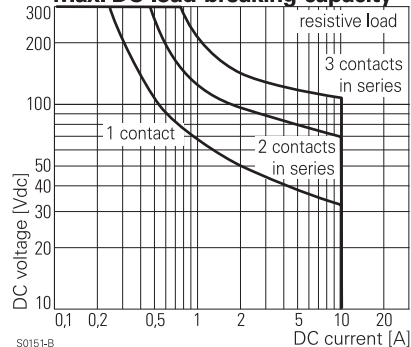
## Coil versions, DC-coil

Coil code standard	PD*	Nominal voltage Vdc	Pull-in voltage Vdc	Release voltage Vdc	Coil resistance Ω	Coil current mA
006	0A6	6	4.5	0.6	32±10%	187.5
012	0B2	12	9.0	1.2	110±10%	109.1
<b>024</b>	<b>0C4</b>	<b>24</b>	<b>18.0</b>	<b>2.4</b>	<b>475±10%</b>	<b>50.5</b>
048	0E8	48	36.0	4.8	2000±10%	24.0
060	0G0	60	45.0	6.0	2850±10%	21.1
110	1B0	110	82.5	11.5	10000±12%	11.0
220	2C0	220	165.0	22.0	40000±15%	5.5

All figures are given for coil without preenergization, at ambient temperature +20°C

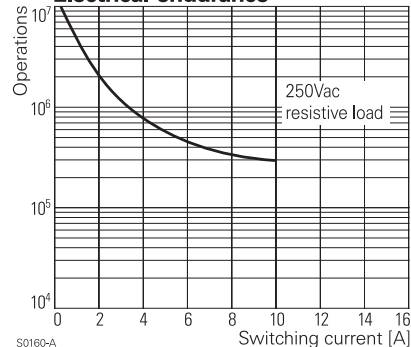
\* Protection diode PD; standard polarity: 2-pole relays: +2 / -7, 3-pole relays: +2 / -10

## Max. DC load breaking capacity



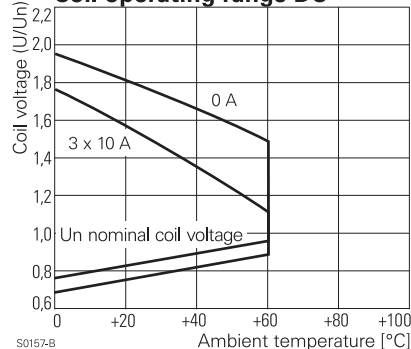
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## Electrical endurance



S0160-A

## Coil operating range DC



S0157-B

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## Coil versions, AC-coil

Coil code	Nominal voltage Vac	Pull-in voltage Vac	Release voltage Vac	Maximum voltage Vac	Coil resistance $\Omega$	Coil current mA
006	6	4.8	2.4	7.8	$5.3 \pm 10\%$	381.7
012	12	9.6	4.8	15.6	$24 \pm 10\%$	182.5
<b>024</b>	<b>24</b>	<b>19.2</b>	<b>9.6</b>	<b>31.2</b>	<b><math>86 \pm 10\%</math></b>	<b>94.2</b>
048	48	38.4	19.2	62.4	$345 \pm 10\%$	47.5
060	60	48.0	24.0	78.0	$544 \pm 10\%$	37.8
115	115	92.0	46.0	149.5	$2000 \pm 10\%$	20.6
<b>230</b>	<b>230</b>	<b>184.0</b>	<b>92.0</b>	<b>299.0</b>	<b><math>8300 \pm 12\%</math></b>	<b>10.1</b>

All figures are given for coil without preenergization, at ambient temperature +20°C

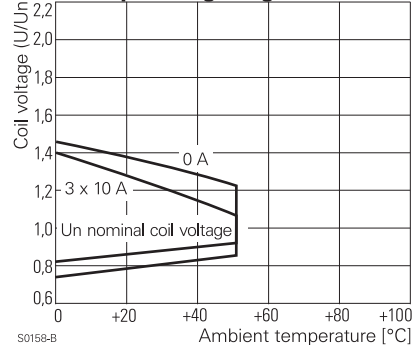
## Insulation

Dielectric strength	coil-contacts	2500 $V_{rms}$
	open contact circuit	1500 $V_{rms}$
	adjacent contacts	2500 $V_{rms}$
Clearance / creepage		2.8 / 4 mm
Insulation to IEC 60664		
Voltage rating		250 V
Pollution degree		3
Overvoltage category		III
Insulation to VDE 0110b (2/79)		C / 250
Tracking resistance of relay base		CTI 175

## Other data

Flammability class according to UL 94	V-0	
Ambient temperature	DC-coil	-45...+60 °C
	AC-coil	-45...+50 °C
Mechanical life	>20x10 <sup>6</sup> operations	
Max. switching rate at rated- / minimum load	20 min <sup>-1</sup> / 100 min <sup>-1</sup>	
Operate- / release time	12 / 5 ms	
Bounce time	4 ms	
Vibration resistance N/O / N/C contact	>5 / 2 g	
Shock resistance (function) N/O contact / N/C contact	>50 / 10 g	
Category of protection (IEC 61810)	RT I - dust protected	
Relay weight	80 g	
Packaging unit	25 pcs.	
Accessories	see accessories MT	

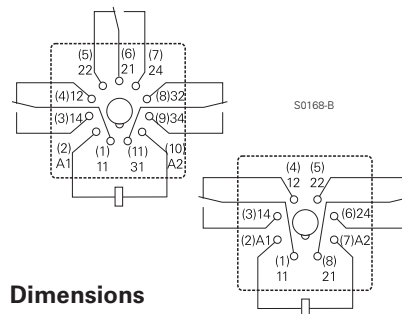
## Coil operating range AC



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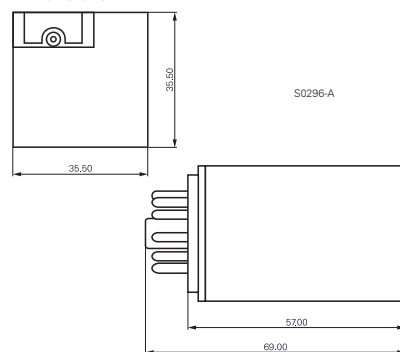
## Terminal assignment

View on solder pins



## Dimensions

Dimensions in mm



S0296-A

## Product key

Type	M T					
Contact configuration	<b>2</b>	2 C/O contacts, 8-pole	<b>3</b>	3 C/O contacts, 11-pole		
Contact material	<b>2</b>	AgNi 90/10	<b>B</b>	AgNi 90/10, bifurcated contacts, gold plated		
	<b>3</b>	AgNi 90/10, gold plated				
Version	<b>1</b>	DC with test button	<b>6</b>	AC with test button		
	<b>3</b>	DC with test button and bipolar LED	<b>8</b>	AC with test button and LED		
Coil	Coil code: please refer to coil versions table, preferred types in bold print					
Other types on request						

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Product key	Contact configuration	Contact material	Version	Coil	Part number		
MT221012	2 C/O contacts 8 pole	AgNi 90/10	DC	12 Vdc	4-1393090-9		
MT221024				with test button	24 Vdc	5-1393090-0	
MT221048				48 Vdc	5-1393090-1		
MT221060				60 Vdc	5-1393090-2		
MT221110				110 Vdc	5-1393090-3		
MT221220				220 Vdc	5-1393090-4		
MT223024				DC+LED+test button	24 Vdc	5-1393090-7	
MT226012				AC	12 Vac	6-1393090-3	
MT226024				test button	24 Vac	6-1393090-4	
MT226048					48 Vac	6-1393090-5	
MT226115					115 Vac	6-1393090-7	
MT226230					230 Vac	6-1393090-8	
MT228024					AC+LED	24 Vac	6-1393090-9
MT228115					test button	115 Vac	7-1393090-0
MT228230						230 Vac	7-1393090-1
MT321012			3 C/O contacts 11 pole	AgNi 90/10	DC	12 Vdc	6-1393091-8
MT321024						with test button	24 Vdc
MT321048						48 Vdc	7-1393091-1
MT321060						60 Vdc	7-1393091-2
MT321110						110 Vdc	7-1393091-4
MT321220		220 Vdc			7-1393091-7		
MT323024		DC+LED+test button			24 Vdc	8-1393091-4	
MT3230C4		DC+LED+PD+TB			24 Vdc	7-1393091-9	
MT326012		AC			12 Vac	9-1393091-6	
MT326024		test button			24 Vac	9-1393091-7	
MT326048					48 Vac	9-1393091-8	
MT326115					115 Vac	0-1393092-1	
MT326230					230 Vac	0-1393092-2	
MT328024					AC+LED	24 Vac	0-1393092-4
MT328115					test button	115 Vac	0-1393092-7
MT328230						230 Vac	0-1393092-8
MT331024		AgNi 90/10 gold plated			DC	24 Vdc	1-1393092-1
MT331110						with test button	110 Vdc
MT331220						220 Vdc	1-1393092-5
MT333024					DC+LED+test button	24 Vdc	1-1393092-8
MT3330C4			DC+LED+PD+TB	24 Vdc	1-1393092-6		
MT333110			DC+LED	110 Vdc	2-1393092-0		
MT333220			test button	220 Vdc	2-1393092-2		
MT336115			AC	115 Vac	2-1393092-5		
MT336230			test button	230 Vac	2-1393092-6		
MT338024				AC+LED	24 Vac	2-1393092-7	
MT338115				test button	115 Vac	8-1415025-1	
MT338230					230 Vac	2-1393092-8	