MT321110 Product Details

MT321110

TE Internal Number: 7-1393091-4

Active

Industrial Relays (General Purpose)

Converted to EU RoHS/ELV Compliant

(Statement of Compliance)

Product Highlights:

- MT Series
- Contact - Current Class = 5A to 10A Class, Less Than 16A
- Contact - Rated Current = 10 A
- Terminal Type = Plug-in
- Contact - Arrangement = 3 Form C (CO)

Documentation & Additional Information

Product Drawings:
- None Available

Catalog Pages/Data Sheets:
- Multimode Relay MT (PDF, English)

Product Specifications:
- None Available

Application Specifications:
- None Available

Instruction Sheets:
- None Available

CAD Files: (CAD Format & Compression Information)
- 2D Drawing (DXF, Version B)
- 3D Model (IGES, Version B)
- 3D Model (STEP, Version B)

Additional Information:
- Product Line Information

Related Products:
- Tooling

Product Features (Please use the Product Drawing for all design activity)

Product Type Features:
- Series = MT
- Terminal Type = Plug-in

Electrical Characteristics:
- Contact - Current Class = 5A to 10A Class, Less Than 16A
- Contact - Rated Current (A) = 10
- Contact - Limiting Continuous Current (A) = 10
- Contact - Limiting Making Current (A) = 20
- Contact - Limiting Breaking Current (A) = 10
- Insulation - Initial Dielectric Between Coil/Contact Class = 1500V to 2500VA Class
- Insulation - Initial Dielectric Between Open Contacts (V rms) = 1500
- Insulation - Initial Dielectric Between Contacts and Coil (V rms) = 2500
- Contact - Rated Voltage (VAC) = 240
- Contact - Switching Voltage Max. (VAC) = 400
- Contact - Limiting Short-Time Current (A) = 10
- Contact - Switching Recommended Load, Min. = 10mA at 12V
- Coil - Rated Voltage (VDC) = 110
- Coil - Resistance (Ω) = 10000
- Coil - Rated Power, DC (mW) = 1200
- Coil - Rated Power Class = 1W to 1.5W Class
- Insulation - Initial Dielectric Between Adjacent Contacts (V rms) = 2500
- Insulation - Creepage Class = 3mm to 5.5mm Class
- Insulation - Clearance Class = 2.5mm to 4mm Class

Dimensions:
- Mechanical - Length Class = 35mm to 40mm Class
- Length (mm [in]) = 35.60 [1.402]
- Mechanical - Width Class = 30mm to 40mm Class
- Width (mm [in]) = 35.50 [1.398]

Body Features:
- Mount Type = Socket
- Weight (g [oz]) = 80.00 [2.824]

Contact Features:
- Contact Material = AgNi90/10
- Contact - Number of Poles = 3

Configuration Features:
- Contact - Arrangement = 3 Form C (CO)
- Coil - Magnetic System = Monostable, DC
- Coil - Special Features = UL Coil Insulation Class B

Industry Standards:
- RoHS/ELV Compliance = RoHS compliant, ELV compliant
- Lead Free Solder Processes = Not relevant for lead free process
- RoHS/ELV Compliance History = Converted to comply with RoHS directive
- Approved/Registered Standards = VDE, cULus

Environmental:
- Environmental - Category of Protection = RTI
- Environmental - Ambient Temperature, Max. (°C [°F]) = 60 [140]
- Environmental - Ambient Temperature Class = 50°C to 70°C Class

Packaging Features:
- Packaging Method = Tray

Other:
- Brand = Schrack
- Accessories/Socket Type = DIN-rail Socket, PCB Socket
- Additional Features = Manual Operation, Mechanical Indicator

• Mechanical - Height Class = >50mm Class • Height (mm [in]) = 57.00 [2.244] • Insulation - Clearance Between Contact and Coil (mm [in]) = 2.8 [0.11] • Insulation - Creepage Between Contact and Coil (mm [in]) = 4 [0.157]	

Multimode Relay MT

- **2/3 pole 10A, 2 form C (CO) or 3 form C (CO) 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**

F0161-B

Typical applications
Mechanical engineering, plant control

Approvals

VDE REG.-Nr. 6182, UL E214025
Technical data of approved types on request

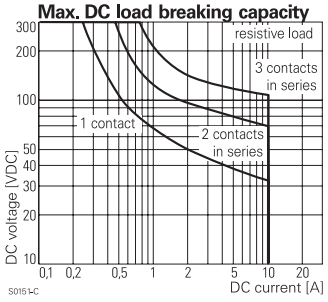
Contact Data

Contact arrangement	2 form C (CO) or 3 form C (CO)		
Rated voltage		240VAC	
Max. switching voltage		400VAC	
Rated current	10A	10A	4A
Limiting making current, max. 20ms	20A	20A	8A
Limiting breaking current	10A	10A	4A
Switching power	2500VA	2500VA	500 VA
Contact material	AgNi90/10	AgNi90/10	AgNi90/10
Contact style	- single contact	gold plated single contact	gold plated bifurcated contact
Min. recommended contact load	12V at 10mA	20mV at 1mA	20mV at 1mA
Initial voltage drop	30mV at 100mA/6VAC/1kHz		
Frequency of operation, with/without load	1200/6000h^{-1}		
Operate time max., DC coil	15ms		
Release time max., DC coil	10ms		
Bounce time max., DC coil, form A/form B	4/5ms		

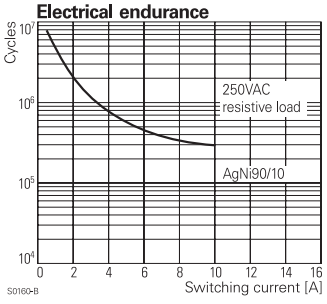
Contact ratings

Type	Contact	Load	Cycles
IEC 61810			
MT22 DC coil	C (CO)	10A, 250VAC, cosφ=1, 35°C	100x10^3
MT22 AC coil	C (CO)	10A, 250VAC, cosφ=1, 35°C	20x10^3
MT32 DC coil	C (CO)	10A, 250VAC, cosφ=1, 35°C	100x10^3
MT32 AC coil	C (CO)	10A, 250VAC, cosφ=1, 35°C	20x10^3
MT2	C (CO)	10A, 250VAC, resistive, 40°	30x10^3
MT2	A (NO)/B (NC)	B300 40°C	6.000
MT2	C (CO)	4A, 25VAC, resistive, bifurcated, 40°C	30x10^3
MT3	C (CO)	10A, 250VAC, resistive, 40°C	30x10^3
UL 508			
MT3	A (NO)/B (NC)	B300, 40°C	6.000
MT3	C (CO)	4A, 25VAC, resistive, bifurcated, 40°C	30x10^3

Max. DC load breaking capacity



Electrical endurance



Contact Data (continued)

Mechanical endurance	
DC coil	20x10^6 operations
AC coil	20x10^6 operations

Coil Data

Coil voltage range			6 to 220VDC 6 to 230VAC			
Operative range, IEC 61810			2			
Coil insulation system according UL			class 130 (B)			
Coil versions, DC coil						
Coil code STD	Coil code PD[3]	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%[1)2)]	Rated coil power W
006	0A6	6	4.5	0.6	32	1.1
012	0B2	12	9.0	1.2	110	1.3
024	0C4	24	18.0	2.4	475	1.2
048	0E8	48	36.0	4.8	2000	1.2
060	0G0	60	45.0	6.0	2850	1.3
110	1B0	110	82.5	11.5	10000[1)]	1.2
220	2C0	220	165.0	22.0	40000[2)]	1.2

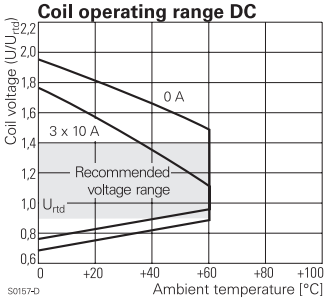
1) Coil resistance ±12%, 2) Coil resistance ±15%
3) Protection diode PD; standard polarity: 2-pole relays: +2 / -7, 3-pole relays: +2 / -10
All figures are given for coil without pre-energization, at ambient temperature +23°C

Coil versions, AC coil, 50/60Hz

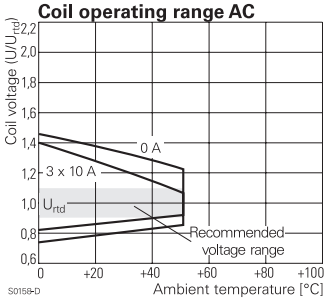
Coil code	Rated voltage VAC	Operate voltage 50/60Hz VAC	Release voltage 50/60Hz VAC	Coil resistance Ω±10%[1)]	Rated coil power 50/60Hz VA
006	6	4.8/5.1	1.8	5.3	2.29/1.98
012	12	9.6/10.2	3.6	24	2.19/1.86
024	24	19.2/20.4	7.2	86	2.26/1.95
048	48	38.4/40.8	14.4	345	2.28/1.97
060	60	48.0/51.0	18.0	544	2.27/1.96
115	115	92.0/97.8	34.5	2000	2.37/2.00
230	230	184.0/195.5	69.0	8300[1)]	2.32/1.96

1) Coil resistance ±12%
All figures are given for coil without pre-energization, at ambient temperature +23°C

Coil operating range DC



Coil operating range AC



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Multimode Relay MT (Continued)

Insulation Data	
Initial dielectric strength	
between open contacts	1500Vrms
between contact and coil	2500Vrms
between adjacent contacts	2500Vrms
Clearance/creepage	
between contact and coil	≥2.8/4mm
between adjacent contacts	≥2.8/4mm
Material group of insulation parts	IIIa

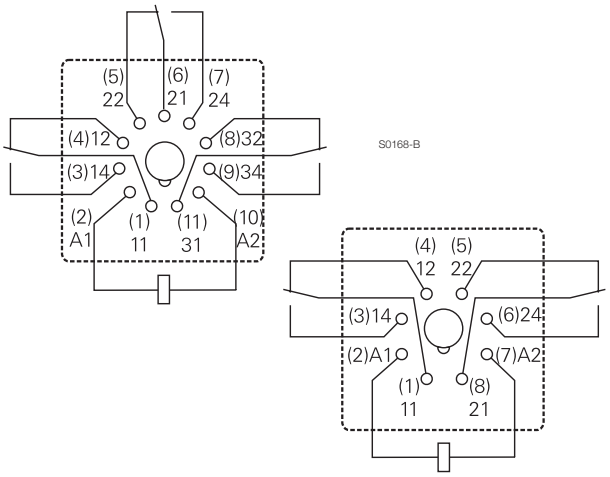
Other Data	
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter	
Ambient temperature	
DC coil	-40 to +60°C
AC coil	-40 to +50°C
Category of environmental protection	
IEC 61810	RTI - dust protected
Vibration resistance (functional), form A (NO)/form B (NC)	5/2g
Shock resistance (functional), form A (NO)/form B (NC)	50/10g
Terminal type	plug-in
Cover retention, pull/push force	100/100N
Weight	80g
Packaging unit	25 pcs.

Accessories	
For details see datasheet	Accessories Multimode Relay MT

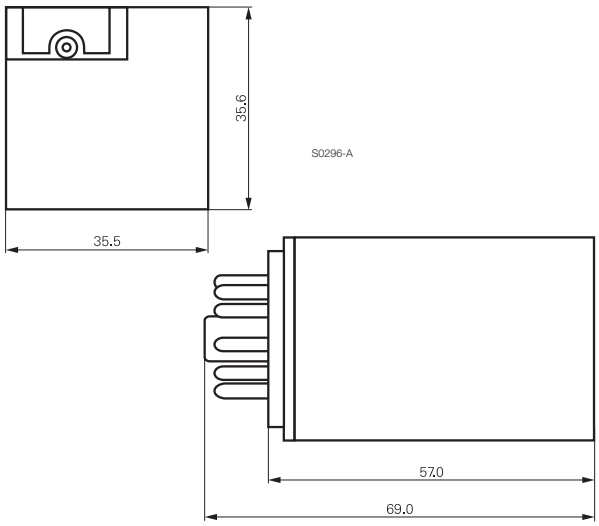
Note: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

Terminal assignment

Bottom view on pins



Dimensions



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Multimode Relay MT (Continued)

Product code structure — Typical product code: **MT 3 2 6 230**

Type
MT Multimode Relay MT

Contact configuration
2 2 form C contacts (2 CO contacts), 8-pin
3 3 form C (3 CO contacts), 11-pin

Contact material
2 AgNi 90/10
3 AgNi 90/10, gold plated
B AgNi 90/10 bifurcated contacts, gold plated

Version
1 DC with test button
3 DC with test button and bipolar LED
6 AC with test button
8 AC with test button and LED

Coil
Coil code: please refer to coil versions table

Other types on request

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