/// Plug-in railway relay with 4 C/O contacts

Rugged plug-in relays for extreme reliability, within long endurance applications and harsh environments

CTD4-U200N

Timer relay

Part of D-platform

(Picture for reference only, depending on configuration)

Description

Plug-in electronic railway customizable timer relay with four change-over contacts for reliable switching of very low currents (1 mA @5 VDC) up to currents of 10 A @ 110 VDC.

Customizable: the relay is made according customer's requirements concerning timing diagram and delay type. Almost any timing diagram is possible: for example time delays with delay on pull-in, on drop-out or both, symmetrical or asymmetrical flashing, 1-shot, 2-shot, 3-shot etc. or a combination of all these. Delay/pulse times are adjustable with 1 or 2 lockable knobs. The relay can also be supplied with fixed delay/pulse times (no knobs).

The relay has standard four change-over contacts which work according the timing diagram. Also 2 instantaneous change-over contacts and 2 timer change-over contacts are possible, to cover virtually all needs. Besides being activated by a voltage level, it is possible to activate the relay via a command input as well. The relay is equipped with two LEDs which indicate the presence of power supply and energizing of the coil.

The built-in magnetic arc blow-out ensures adequate DC breaking capacity resulting in long contact life. The integrated contact separation prevents cross pollution of contacts. On the relay cover the serial number and data matrix code are shown for ease of traceability.

The construction of the relay and choice of materials makes the CTD4-U200N relay suitable to withstand low and high temperatures, shock & vibrating and dry to humid environments. No external retaining clip needed as integrated 'snap-lock' will hold relay into socket under all circumstances and mounting directions.

Features

- Customized timing diagram based on customers requirement
- Compact plug-in design
- 4 time delayed C/O contacts or 2 time delayed C/O contacts and 2 instantaneous C/O contacts
- Delay/pulse times adjustable with 1 or 2 lockable knobs
- Also available with fixed delay/pulse times (no knobs)
- Delay/pulse times: between 0 s...∞ (no limits)
- Magnetic arc blow-out ensuring long contact life
- Two LEDs for status indication, red or green
- Integrated back EMF suppression diode
- Minimum switching current 1 mA
- Maximum continuous current 10 A
- Wide temperature range -40 ºC...+70 ºC
- Mechanical life > 30 million operations
- Electrical life e.g. > 10 million operations at 0.5 A, 24 VDC
- Data matrix code with serial number for traceability
- Integrated snap-lock, no external retaining clip needed
- Transparent cover for visual inspection
- Many options and sockets available

Application

The CTD4-U200N can be used in demanding rolling stock applications where a standard or non-standard timer function is necessary.

Relays continue to play a vital role in reliable train operation. Key functions are galvanic isolation between control (computers/ PLC's) and power circuits providing system isolation, contact multiplication and amplification.

Other unique features are:

- predictable failure behavior (Fail Safe) making system safety validation a lot more simple than using computer based solutions like PLC's
- long term availability (no obsolescence)
- easy maintenance by plug-in feature and transparent cover
- unlike more sensitive electronics, relays are insensitive to EMI

Using these features one can build a hardwired, fail safe control system which is cyber secure and insensitive to electro magnetic disturbances and surges. Relays are ideal to use in trains for signal transfer/repeat, safety interlocking functions (brake - doors), load on-off switching and sub-system isolation.

Railway compliancy

EN 50155: 2017	EN 50121-3-2: 2016
IEC 60571: 2012	EN 45545-2: 2020
IEC 60947-5-1: 2016	NF F16-101/102
IEC 61373: 2010	IEC 60947-5-4: 2002

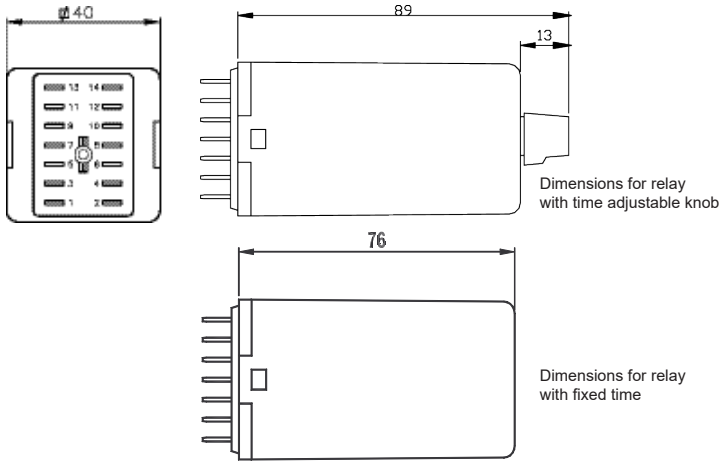
Timer relay
CTD4-U200N

Options

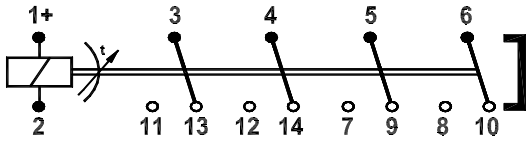
- Gold plated contacts
- IP50 dust protection
- LED indicators green or red
- AgSnO2 contacts, weld resistant for capacitive loads
- Double zener diode
- AC/DC coil
- Double make/double break contacts
- Keying (coding relay to correct socket)

Remark: Not all combinations possible

Dimensions (mm)

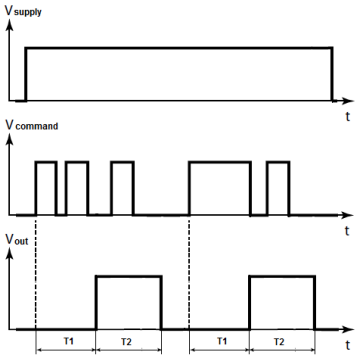


Connection diagram



Example, depending on configuration

Timing diagram



Example diagram, more on pages 3 & 4

Weight

~ 145 g (depending on configuration)

Serializing

Each relay is marked with a unique serial number to which link important information and test results.

The GTIN (Global Trade Item Number) and part number are printed on each relay in both text and data matrix code according the worldwide recognized GS1 standard, being able to scan each relay for logistical and traceability purposes.

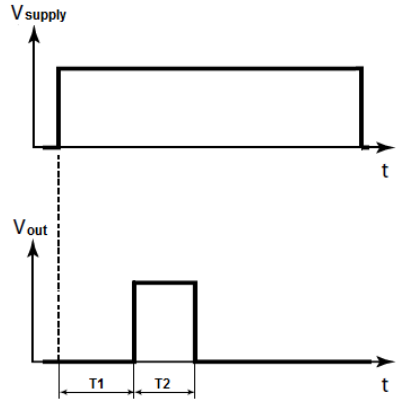
Sockets

		Mounting			
		Surface / Wall	35 mm rail	Panel / Flush	PCB
Terminal connection	Screw	V23	V23	-	-
	Screw - wide terminals	V22 BR	V23 BR	-	-
	Spring clamp	V29	V29	V33	-
	Faston	-	-	V31	-
	Crimp	-	-	V26	-
	Solder tag	-	-	V3	-
	PCB	-	-	-	V32

For more information see the respective datasheets

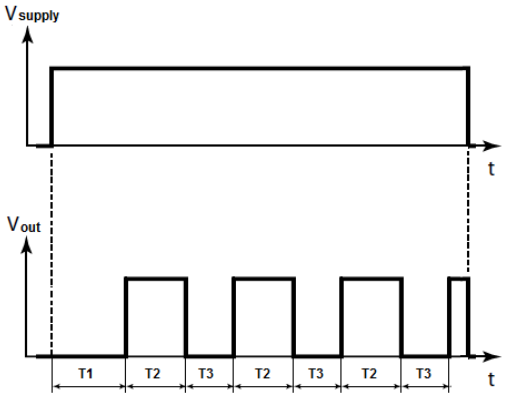
Technical specifications

Timing diagrams, examples



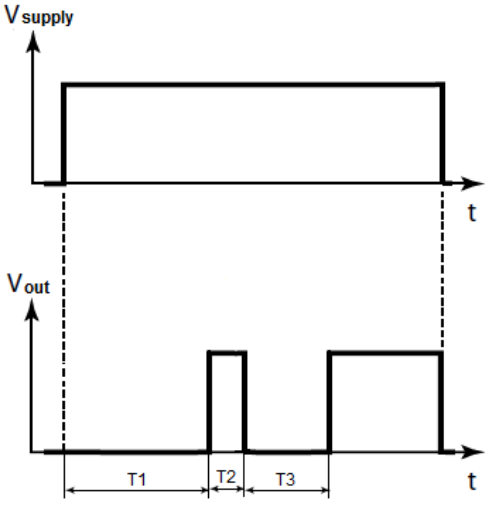
When supply voltage is applied, after period T1 the relay is activated once for period T2.

The relay is reset when supply voltage is removed.



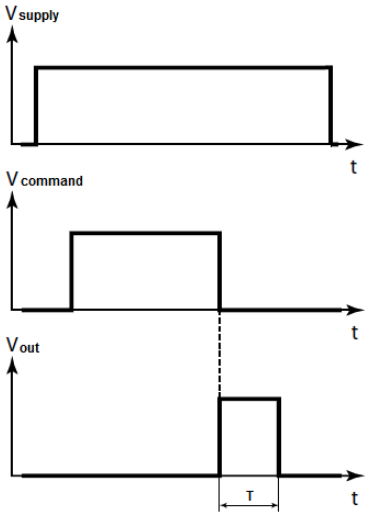
When supply voltage is applied, after period T1 the relay is activated for period T2.

After period T3 the relay is again activated for period T2, which repeats until supply voltage is removed which resets the relay.



When supply voltage is applied, after period T1 the relay is activated for period T2.

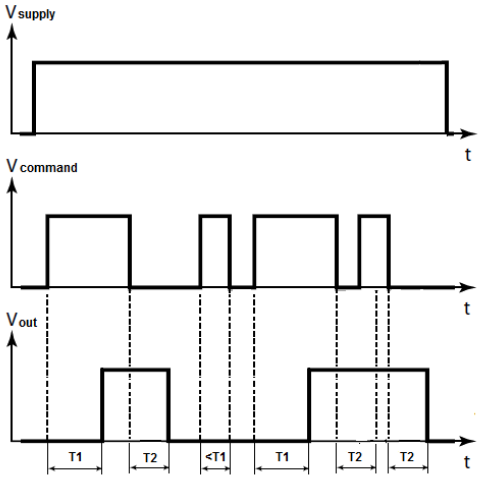
After period T3 the relay is activated again until the supply voltage is removed, which resets the relay.



Supply voltage and command voltage is applied to the relay. The relay is activated for period T when command voltage is removed.

The relay is reset after period T or when supply voltage is removed.

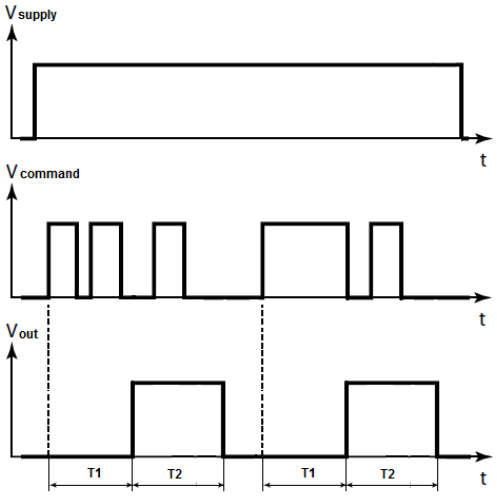
Timing diagrams, examples



Supply voltage is applied to the relay. When command voltage is applied, after period T1 the relay is activated if the command voltage is supplied during T1.

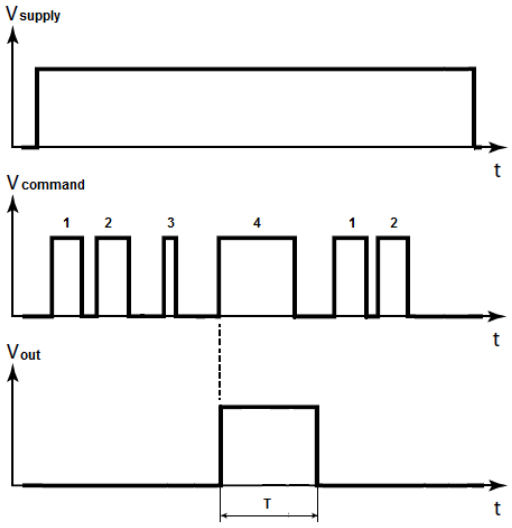
When control voltage is removed, after period T2 the relay is de-activated unless control voltage is applied again within period T2.

The relay is reset after period T2 if the relay is de-activated or when supply voltage is removed.



Supply voltage is applied to the relay. When command voltage is applied, after period T1 the relay is activated for period T2 regardless of the command voltage.

The relay is reset after period T2 or when supply voltage is removed.



Supply voltage is applied to the relay. The 4th time a command voltage is applied regardless of the duration of the command voltage, the relay is activated for period T regardless the command voltage.

The relay is reset after period T or when supply voltage is removed.

Remarks:

1. Delay/pulse times can be adjustable or fixed; maximum 2 adjustable times possible (maximum of 2 adjustable knobs), if more times needed those must be fixed
2. Many other diagrams are possible, please contact Mors Smitt to optimize the timing diagram for your application
3. Number of change-over contacts depends on desired timing diagram

Timer relay
CTD4-U200N

Coil characteristics

Nominal power consumption	Depends on configuration
Nominal voltages	Depends on requirements, typical any value between 24...220 VAC/ DC

Type	U_{nom} (VDC)	U_{min} (VDC)	U_{max} (VDC)	U_{reset} (VDC)	$U_{drop-out}$ (VDC)
CTD4-U201N	24	16.8	30	11	2.4
CTD4-U202N	48	33.6	60	11	4.8
CTD4-U203N	72	50.4	90	11	7.2
CTD4-U204N	110	77.0	138	44	11.0
CTDA-U205N	96	67.2	120	44	9.6
CTD4-U207N	36	25.2	45	11	3.6

Other types on request

Remarks:
- Umin is the must-operate voltage at which the relay has picked up in all circumstances (worst-case situation), in practice the relay picks up at a lower voltage
- Udrop-out is the must-release voltage at which the relay has dropped-out in all circumstances (worst-case situation), in practice the relay drops out at a higher voltage (Urelease) Take the time delay into account (if applicable)
- Ureset: Electronic time function resets below this value and LED is OFF below this value (if applicable)
- Always select the nominal voltage as close as possible to the actual voltage in the application

Contact characteristics
(for configurations with 4 C/O or 3 C/O + 1 N/C contact)

Contact configuration	4 C/O or 3 C/O + 1 N/C contact
Peak inrush current NF F 62-002	200 A (withstand > 10 x 200 A @ 10 ms, 1 min) 80 A (withstand > 10 x 80 A @ 200 ms, 1 min) 40 A (withstand > 10 x 40 A @ 500 ms, 1 min) 30 A (withstand > 10 x 30 A @ 1000 ms, 1 min)
Maximum continuous current	10 A
Maximum switching voltage	250 VDC, 440 VAC
Minimum switching voltage*	5 V
Minimum switching current*	1 mA
Maximum breaking capacity (> 50.000 operations)	110 VDC, 10 A (resistive load) 72 VDC, 5 A (L/R ≤ 40 ms) 110 VDC, 0.5 A (L/R ≤ 40 ms)
Contact resistance	≤ 15 mΩ (initial)
Material	Ag standard (optional $AgSnO_2$, Au on Ag)
Contact gap	0.7 mm
Contact force	> 200 mN

* Standard silver contacts tested in lab conditions. However we strongly advise to always use gold plated contacts when switching very low currents, as long time reliable operation depends also on switching frequency and environmental conditions. Take recommendations for long time reliability on page 11 into account.

Contact reliability according IEC 60947-5-4
(for configurations with 4 C/O or 3 C/O + 1 N/C contact)

Contact switching load	Contact material	Failure rate λ_c*	Mean number of operating cycles to contact failure m_c*
1 mA , 5 VDC resistive	Gold (option E)	$5x10^{-8}$	20.000.000
5 mA , 24 VDC resistive	Gold (option E)	$4x10^{-8}$	25.000.000
10 mA , 50 VDC resistive	Silver (standard)	$2x10^{-8}$	50.000.000

*at confidence level 90%

Note: tested in laboratory environment at ambient temperature 20 ºC. To underline the reliability of low current switching in parallel a 1 mA / 5 V test was done using standard silver contacts, resulting in the same reliability. But since real train conditions are far different from lab conditions we strongly advise gold plated contacts for such low contact ratings. Take recommendations for long time reliability on page 12 into account.

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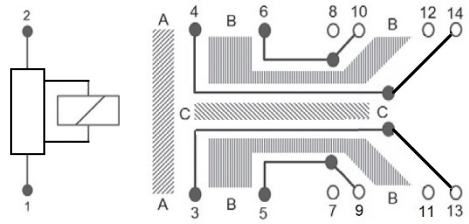
Electrical characteristics
(for configurations with 4 C/O or 3 C/O + 1 N/C contact)

Dielectric strength	Pole-pole Cont-coil Open contacts	4 kV, 50 Hz, 1 min 2.5 kV, 50 Hz, 1 min 2.5 kV; 50 Hz; 1 min

Clearance and creepage according IEC 60664-1 / EN 50124-2



Section	Clearance	Creepage	Material group	Unom*
A	≥ 4.0 mm	≥ 4.0 mm	I (CTI600)	≤ 450 V
B	≥ 3.0 mm	≥ 3.0 mm	I (CTI600)	≤ 300 V
C	≥ 6.1 mm	≥ 6.1 mm	I (CTI600)	≤ 696 V

*For basic insulation, PD2 and OV3

Pulse withstanding	IEC 60255-5	5 kV (1.2/50 µs)
Insulation resistance	EN 50155	> 20 MΩ (test voltage 500 VDC)
EMC	EN 50121-3-2	Compliant

Mechanical characteristics

Torque value screw to lock knob	0.2-0.4 Nm

Environmental characteristics

Vibration	IEC 61373, Category I, Class B, Body mounted
Shock	IEC 61373, Category I, Class B, Body mounted
Operating temperature	-40 °C...+70 °C
Operating temperature class	OT4
Humidity	93%
Maximum altitude	2000 meter. Higher altitudes are possible but have consequences mentioned in IEC 60664 (for example 5000 meter with bigger clearance distance)
Salt mist	IEC 60068-2-11, class ST4
Dry heat	IEC 60068-2-2 test Be
Damp heat	IEC 60068-2-30, Test method Db variant 2
Protection	IEC 60529, IP40 (relay on socket) (with option K: IP50)
Fire & smoke	NF F 16-101, NF F 16-102, EN 45545-2: HL3 for requirements R22, R23, R26
Insulation materials	Cover: polycarbonate Base: nylon
Natural cooling or forced ventilation constraints for the equipment	None: no extra measures necessary, relays can be mounted tightly together to save space
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals	European Regulation No 1907/2006

Timer relay
CTD4-U200N

RAMS features

Life class	L4 (Useful life 20 years, take electrical life cycle curves into account)
Repairability	Non-repairable
Maintenance instructions	See inspection/maintenance on page 13
Reliability / lifetime Mechanical lifetime Low energy electrical lifetime High energy electrical lifetime	 > 30 million operations, maximum switching frequency 1 Hz (1 million operations at -40 °C) 5 million operations, maximum switching frequency 1 Hz See life cycle curves on page 9
Storage precautions	Storage temperature: -50 °C…+85 °C Store in original packaging Silicon free environment

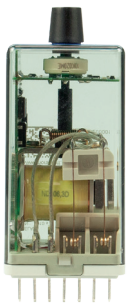
Product labeling

Part number identification	Part number mentioned on top side relay
Serial number identification	Serial number mentioned on top side relay Serial number = Lot number + year + week + reference number
Data matrix code	According GS1 standard, placed on top side relay 01 Global Trade Item Number 240 Part number 21 Serial number Example: 01123456789012324012345678921123456220900 1
Revision index identification	Linked to serial number
Terminals	Identification on bottom plate relay Relay to be used with Mors Smitt relay sockets which have clear terminal identification on each socket

Railway compliancy

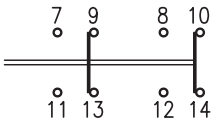
EN 50155: 2017	Railway applications - Rolling stock - Electronic equipment
IEC 60571: 2012	Railway applications - Electronic equipment used on rolling stock
IEC 60947-5-1: 2016 / IEC 60947-5-4: 2002	Low-voltage switchgear and controlgear
IEC 61373: 2010	Railway applications - Rolling stock equipment - Shock and vibration tests
EN 50121-3-2: 2016	Railway applications - Electromagnetic compatibility
NF F16-101/102	Railway rolling stock - Fire behavior
EN 45545-2: 2020	Railway applications - Fire protection on railway vehicles Part 2: Requirements for fire behavior of materials and components

(Pictures for reference only, depending on configuration)



Timer relay
CTD4-U200N

Options*

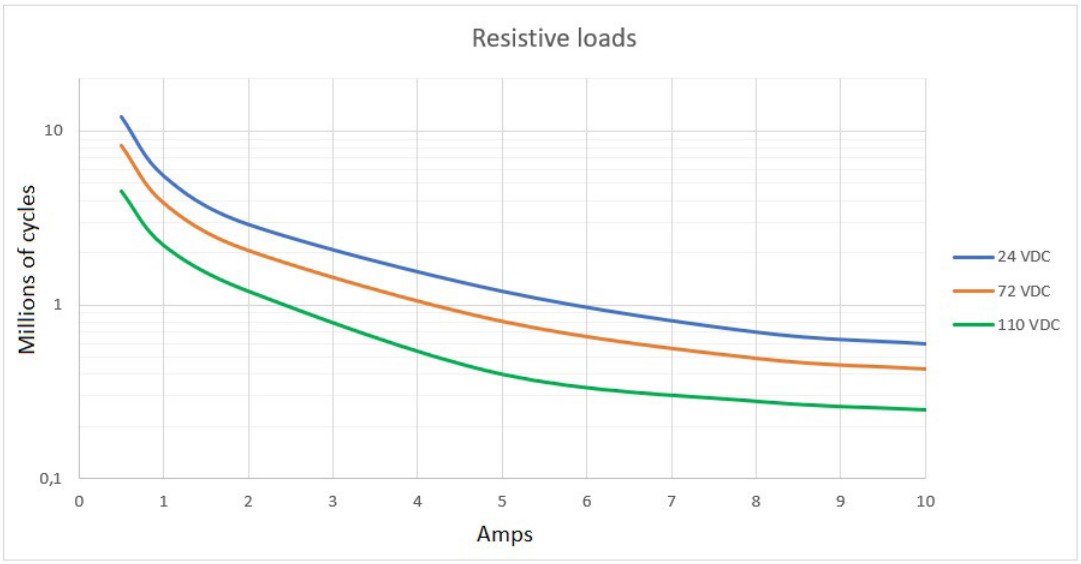
Code	Description	Remark	Cannot be combined with:
Standard options:			
E**	Au; Gold plated contacts		M
K	Extra dust protection	IP50 Cat 2 for the relays mounted in a Mors Smitt socket. Application PD1/PD2 and contact load > 0.5 A.	
Lg***	Green LED indicators		
Lr***	Red LED indicators		
Q	Double zener diode over coil	Maximum allowed peak voltage 180 V, higher voltage will damage the diode.	X2
Y	Double make/double break contacts, contact gap 1.4 mm	2 C/O DM/DB 	
Keying	Coil coding relay	Also order socket with keying	
Special options:			
M	$AgSnO_2$; “non-weldable” contacts, used for capacitive loads e.g. LED lighting	Icontact > 100 mA	E
X2	AC/DC coil		Q

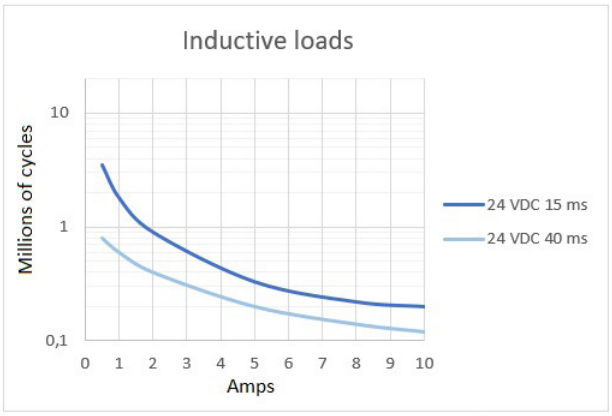
* Depending on configuration	
** Gold plated contacts characteristics	
Material	Ag, gold plated
Maximum switching voltage	60 V (higher voltages may be possible, contact Mors Smitt for more information)
Maximum switching current	400 mA (at higher rate gold will evaporate, then the standard silver contact rating of minimum 10 mA and 12 V is valid)
Minimum switching voltage	5 V
Minimum switching current	1 mA
*** Lg or Lr must be selected in the ordering scheme to have the correct LED color	

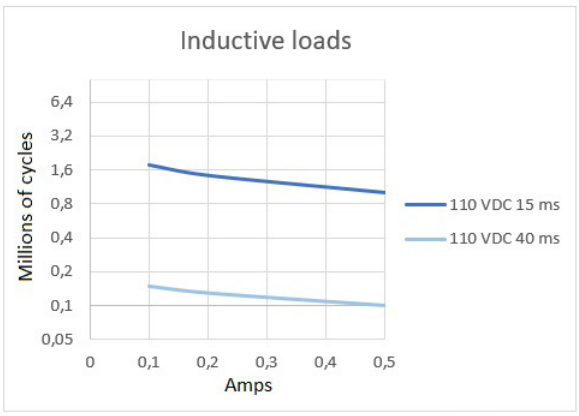
Remark: For application support or technical product support, contact your local Mors Smitt sales office (see contact details on last page).

Electrical life expectancy

(for configurations with 4 C/O or 3 C/O + 1 N/C contact)







By connecting 2 contacts in series the DC current breaking capacity is increased by 50 %. Electrical lifetime is tested under laboratory conditions with switching frequency 0.33 Hz.

Note: The actual electrical lifetime in the application is affected by the switching frequency, type of contact (N/O or N/C), environmental conditions, etc.

For highly inductive loads Mors Smitt A400/B400 relays with standard double make double break contacts are the optimal solution.

Self-cleaning contacts

Each contact attracts organic molecules. When the surface is loaded with a voltage, like a relay contact, the attracting force is even higher. Therefore on each contact surface there is organic “pollution”.

Mors Smitt relays are designed to self-clean during switching of the contacts:

1. Mechanical wiping action: the “pollution” is swept aside.
   The movement of opposing contacts when they make contact: this wiping action cleans the surface of both contacts. Mors Smitt relays are designed for optimal wiping action: enough to clean the surface and not too much to prevent contact wear.
2. Electrical cleaning: the “pollution” is burnt away.
   A current at sufficient level will evaporate organic “pollution”. When switching loads (typically of a current >100 mA), the “pollution” is totally burnt away and a clean contact surface is available.

This results in reliable contact operation without interference due to contact pollution.

Timer relay
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Mounting possibilities/sockets

 V3	 V22BR	 V23	 V23BR	 V26
 V29	 V31	 V32	 V33	

Surface/wall mounting

338000302	V22BR	Screw socket, wall mount, front connection (9 mm terminals)
338000580	V23	Screw socket, wall mount, front connection (7.5 mm terminals)
338000610	V29	Spring clamp socket, wall mount, front dual connection (2.5 mm^2)

Rail mounting

338000580	V23	Screw socket, rail mount, front connection (7.5 mm terminals)
338000402	V23BR	Screw socket, rail mount, front connection (9 mm terminals)
338000610	V29	Spring clamp socket, rail mount, front dual connection (2.5 mm^2)

Panel/flush mounting

338100100	V3	Solder tag socket, panel mount, rear connection
328400100	V26	Crimp contact socket, panel mount, rear connection, A260 crimp contact
338000560	V31	Faston connection socket, rear dual connection (4.8 x 0.8 mm)
338000670	V33	Push-in terminal socket, panel mount, rear dual connection (3.3 mm^2)

PCB mounting

338000561	V32	PCB soldering socket

No external retaining clip needed as the ‘snap-lock’ will hold the relay into the socket under all circumstances and mounting directions (according shock & vibration requirements IEC 61373, Category I, Class B, Body mounted). If regulations require external retaining clips, these are available as well.

For more details see datasheets of the sockets on www.morssmitt.com

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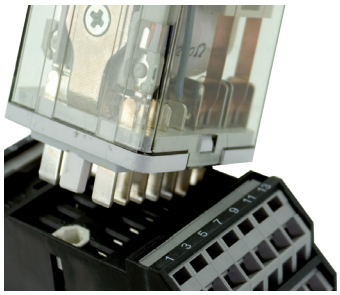
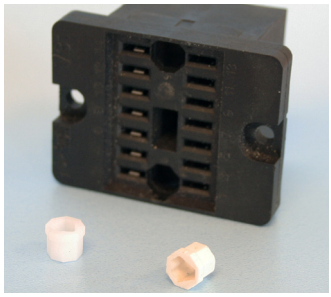
Mechanical keying relay and socket (optional)





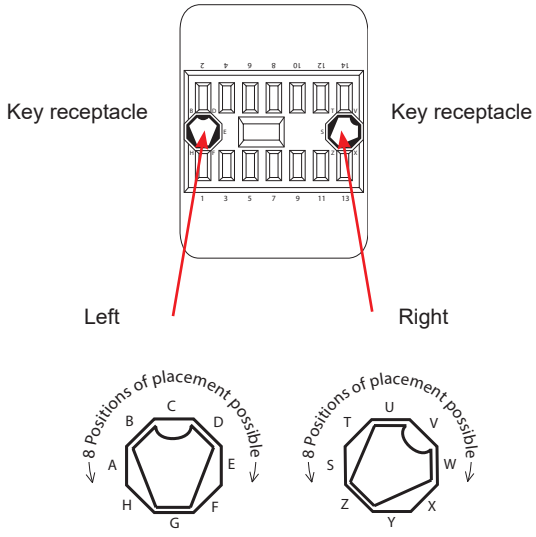
Function:
- To prevent wrong installation
- To prevent damage to equipment
- To prevent unsafe situations

Using keyed relays and sockets prevents a relay is inserted in a wrong socket. For example it prevents that a 24 VDC relay is put in a 110 VDC circuit. Positive discrimination is possible per different function, coil voltage, timing, monitoring, safety and non-safety.

The D relay socket keying option gives 8 x 8 = 64 possibilities. Upon ordering the customer simply indicates the need for the optional keying. Mors Smitt will assign a code to the relay and fix the pins into the relay. The sockets are supplied with loose key receptacles. Inserting the keys into the socket is very simple and self explaining.

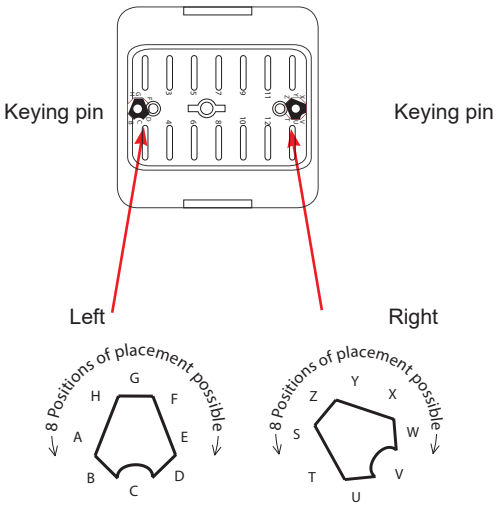
Remark: Sockets and relay shown are examples.

Top view socket



Example keying position G-Z on socket

Bottom view relay



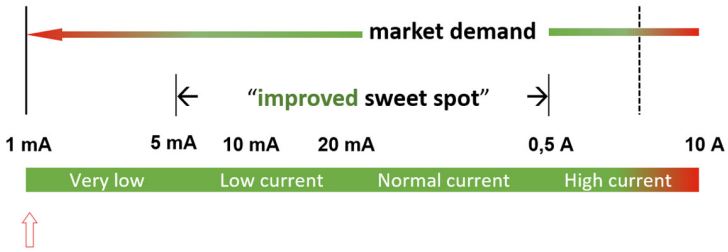
Example keying position G-Z on relay

Important for relay selection and operation

Make sure the relay is suitable for the application. For critical applications (for example: green loop applications) relays should be checked on correct working during periodic inspection.

Contact switching current (for versions with 4 C/O contacts or 3 C/O + 1 N/C contact))

Each relay has a range of switching currents in which it performs optimally: the sweet spot. As switching currents are decreasing in field applications, the CTD4-U200N relay has an improved sweet spot compared to its predecessors.



CTD4-U200N with gold contacts

Recommendations for long time contact reliability

For relays to enable failure free performance over a very long operational time, it is important to create the right circumstances. In any relay, contact usage and atmospheric conditions influence the contact surface. To counter this effect it is common practice to use a safety factor of > 2 to ensure long time contact reliability.

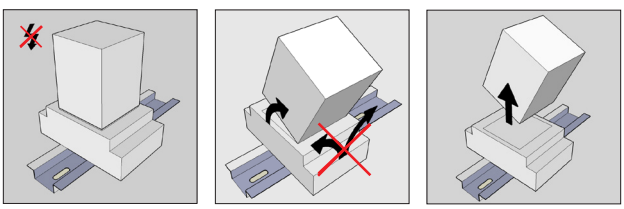
Therefore for long time contact reliability we recommend:
- Silver contacts: a minimum contact current of 20 mA per contact
- Gold contacts: a minimum contact current of 10 mA per contact
- Double Make Double Break contacts: a minimum contact current of 40 mA per contact
- When low currents are switched and not frequently, e.g. 10 mA once a day, it is advised next to gold plated contacts to put similar contacts within the same relay in parallel
- With higher load switching, e.g. 110 VDC and > 1 A, put relay contacts in series
- Rule of thumb: any relay works best with switching currents > 20 mA in DC environment when frequently switched. When not switched frequently a higher switching current like 50 mA is better for a long reliable operational time
- Check relays regularly, for example with the Mors Smitt Portable Relay Tester and visually through the transparent cover

Instructions for use

Installation

Before installation or working on the relay: disconnect the power supply first (no hot swapping)! Install socket and connect wiring according to the terminal identification. Plug relay into the socket ensuring there is no gap between the bottom of relay and the socket. Reverse installation into the socket is not possible due to the mechanical blocking snap-lock feature. Check to ensure that the coil connection polarity is not reversed. Relays can be mounted tightly together to save space. When rail mounting is used, always mount the socket in the direction of the UP arrow, to have proper fixation of the socket on the rail. Torque value screw to lock knob: 0.2-0.4 Nm.

Warning!
- Never use silicon in the proximity of the relays
- Do not use the relay in the presense of flammable gas as the arc generated from switching could cause ignition
- To remove relays from the socket, employ up and down lever movements. Sideway movement may cause damage to the coil wires



- Relays should never be swapped to other circuit positions when taken out of its socket for inspection or fault finding, always place it back into the original position to prevent contact resistance problems. Contact resistance problems can be created when swapping relays between different circuit loads due the contact wear/condition having changed during its operational life.

Operation

After installation always apply the rated voltage to the coil to check correct operation. Long term storage may corrode the silver on the relay pins. When plugging the relay into the socket, the female bifurcated or trifurcated receivers will automatically cut through the corrosion on the pins and guarantee a reliable connection.

Before actual use of relays, it is advised to switch the load several times with the contacts. The contacts will both be electrically and mechanically cleaned due to the positive wiping action. Sometimes a contact can build up increased contact resistance (≤ 15 mΩ when new). When using silver contacts one can clean the contact by switching a contact load a few times using >24 VDC & ~ 2A. Increased contact resistance is not always problematic, as it depends on circuit conditions. In general a contact resistance of 1 Ω is no problem, consult Mors Smitt for more information.

Condensation in the relay is possible when the coil is energised (warm) and the outside, environmental temperature is cold. This is a normal phenomenon and will not affect the function of the relay. Materials in the relay have no hygroscopic properties.

Inspection / maintenance

Correct operation of the relay can easily be checked as the transparent cover provides good visibility of the moving contacts. If the relay does not seem to operate correctly, check for presence of the appropriate coil voltage and polarity using a suitable multimeter. If a LED is fitted, it indicates voltage presence to the coil. If coil voltage is present, but the relay does not operate, a short circuit of the suppression diode is possible (This may have been reversed due to the coil connection).

Relays can easily be tested with the Mors Smitt Relay Tester. More information on: www.morssmitt.com.

If the relay doesn’t work after inspection, replace the relay unit with a similar model. Do not attempt to open the relay cover or try to repair. Contacts are calibrated and in balance, touching can affect proper operation. Also resoldering may affect correct operation. Since 2009 relays have tamper proof seals fitted and once broken, warranty is void.

Most relay defects are caused by installation faults such as overvoltage, spikes/transients, high/short current far exceeding the relay specifications. When returning the relays for investigation, please provide all information on the RMA form. Send defective relays back to the manufacturer for repair or replacement. Normal wear and tear or external causes are excluded from warranty.

RMA procedure see www.morssmitt.com

Timer relay
CTD4-U200N

Ordering scheme

CTD4-U		N -		Ref		Code	

Coil voltages	201				24 VDC	
	202				48 VDC	
	203				72 VDC	
	204				110 VDC	
	205				96 VDC	Cannot be combined with:
	207				36 VDC	
Options (depending on config)		E			Gold plated contacts	M
(add as many options as needed, always in alphabetical order)		K			Extra dust protection, IP50	
		Lg*			Green LED indicators*	
		Lr*			Red LED indicators*	
* a LED indicator is MANDATORY		Q			Double zener diode	X2
		Y			Double make/ double break	
Special options						
(minimum order quantity: 20)		M			$AgSnO_2$ contacts, highly resistant to welding	E
		X2			Coil for both DC and AC	Q
Ref				....	**Customer specific configuration**	
Keying code (optional, leave blank if not required)					**Standard, silver contacts**	
					AS 24 VDC	
Remark: keying codes are available for all possible coil voltages.					AY 36 VDC	
					AT 48 VDC	
					AU 72 VDC	
					AV 110 VDC	
					Option E, gold contacts	
					DT 24 VDC	
					FV 36 VDC	
					HU 48 VDC	
					AZ 72 VDC	
					HV 110 VDC	
					Option M, silver tin oxide contacts	
					GT 24 VDC	
					HT 36 VDC	
					GU 48 VDC	
					GV 72 VDC	
					GW 110 VDC	

Examples:

CTD4-U204N-LrQ Ref 0312
Description: CTD4-U200N relay, Unom 110 VDC, red LED indicators, double zener diode, reference 0312

CTD4-U201N-LgMX2 Ref 0609 code AZ
Description: CTD4-U200N relay, Unom 24 VDC, green LED indicators, AgSnO2 contacts, AC/DC coil, reference 0609, keying code AZ

Over 11 million Mors Smitt relays in use in rail transport applications worldwide!

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