TAC relay - Electronic timer, windshield wiper control module

Datasheet

Features

- Train windshield wiper monitoring
- Wiping sequence adjustable with a potentiometer from one every 3 seconds to one every 30 seconds
- Compact plug-in design
- -40 °C...+85 °C operating temperature

Benefits

- Proven reliable
- Long life cycle
- Accurate timing selection finger safe
- Easy to maintain and replace
- Low life cycle cost
- No maintenance

Railway compliancy

- CF 62-003 European railway standard
- NF F 16-101/102 Fire behaviour - Railway rolling stock
- EN 50155 Railway application - Electronic equipment used on rolling stock
- IEC 61373 Railway application - shock and vibration tests

Description

The electronic timer TAC is a train windshield wiper monitoring module. A simple turn of a cals potentiometer allows to set the wiping sequence from one every 3 seconds to one every 30 seconds. The plug-in design offers secure locking feature for maximum ease of maintenance (no wires need to be disconnected or other hardware removed for relay inspection or replacement).

The resistance to impact and vibration is conform to standards in force for Railway Transported Equipment.

Positive mechanical keying of relay to socket is built into relay and socket during manufacture and terminal identifications are clearly marked on identification plate that is permanently attached to the relay..

The TAC module is pluggable in the following sockets: EA 102 A, EA 102 AF, EA 103 AF, EA 104 A, EA 104 AF, EA 105 AF, EA 112 AF.

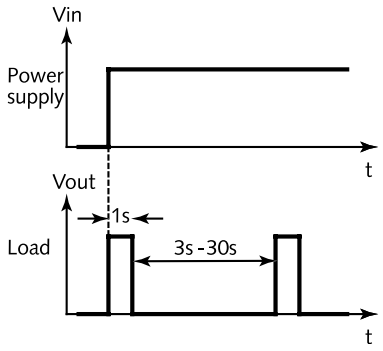
Application

The TAC electronic timing module is designed for windshield wiper control applications with a programmable timing function.

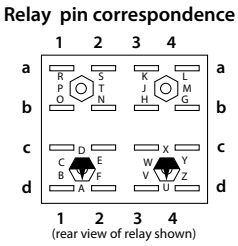
TAC relay
Technical specifications

Functional and connection diagrams

Timing diagram

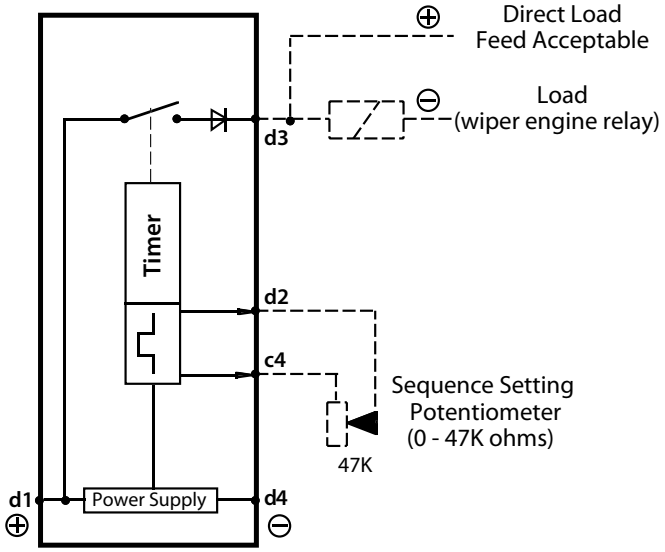


Relay pin correspondence



Example: **UA keying**

Connection diagram



TAC relay
Technical specifications

Timing specifications

Wiping sequence	Adjustable, 1s pulse every 3 s to every 30 s
Adjustment / repeatability	± 10%

Input data

Keying	Unom (VDC)	Uoperating (VDC)
UA	24	16 / 30
UB	36	25 / 45
UC	48	33 / 60
UD	72	50 / 90
UE	110	77 / 138

Electrical characteristics

Operating voltage	24 VDC...110 VDC
Operating current	< 20 mA
Maximum load current	0.35 A
Dielectric strength	1500 VAC, 1 min between housing and tabs
Insulation resistance	≥ 1000 MΩ at 500 VDC

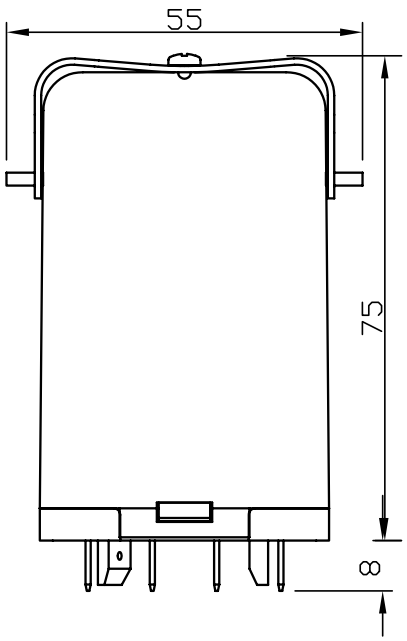
TAC relay
Technical specifications

Mechanical and environmental specifications

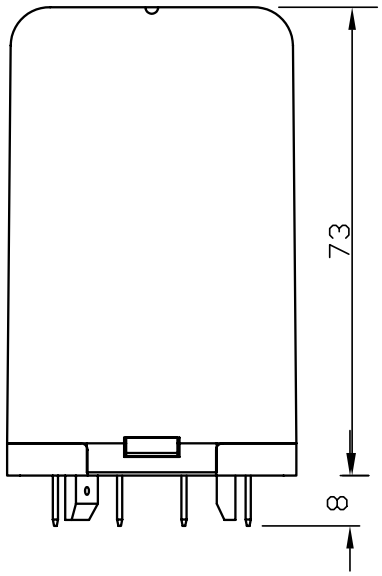
Vibration	NF F 62-002 The tests are conducted in the X, Y , Z planes at frequency between 10 & 150 cycles (sinusoidal) at 5 g
Shock	NF F 62-002 Tests are applied in both directions in the X, Y & Z planes. Then successive shocks are administered consisting of the positive component of sinusoidal with a value of 30 g, 18 ms Other vibration and shock tests can be performed on request
Mechanical life	MTBF > 1.000.000 hours
Weight	142 g (5 ounces)
Temperature	-40 °C...+85 °C
Humidity	93% RH, 40° C for 4 days
Salt mist	5% NaCl, 35° C for 4 days
Protection	IP40 (electronic timer on socket)
Fire & smoke	Materials: Polycarbonate (cover) / polyester melamine (base) Note: These materials have been tested for fire propagation and smoke emission according standards NF F 16-101, NF F 16-102.

TAC relay
Technical specifications

Dimensions (mm)



Used
with locking brackets



Used
with wire locking spring

TAC relay
Mounting possiblities / sockets

EA 102 A

EA 103 AF

EA 104 A

EA 112 AF

Panel/flush mounting

EA 102 A	Locking bracket (905843), rear connection, double Faston 5 mm
EA 102 AF	Wire locking spring (926853), rear connection, single Faston 5 mm
EA 104 A	Locking bracket (905843), rear connection, single Faston 5 x 0.8 mm
EA 104 AF	Wire locking spring (926853), rear connection, single Faston 5 x 0.8 mm
EA 112 AF	Wire locking spring (926853), rear connection, crimp contact

Surface/wall mounting

EA 103 AF*	Wire locking spring (926853), front connection, M3 screw 6.5 mm ring terminals ($2{,}5\ mm^2$)
EA 105 AF*	Wire locking spring (926853), front connection, single Faston 5 mm

* Mounting possibility on 35 mm rail EN 50022 by adding suffix D to the part number (see socket datasheet)

Note: Keying of relay to socket can be specified by adding the keying letters in the part number.
See all details in the related socket datasheet.

TAC relay
Spare parts

Spare parts - order part numbers

(1)

LOCKING BRACKET
905843

(1)

SCREW FOR BRACKET
C927210

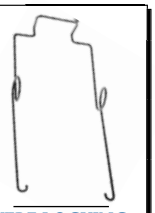
(1)

METAL STRAP (2)
P928060

(1)

METAL STRAP (4)
P928061

(1)



WIRE LOCKING SPRING
926853

(1)

ROUND PLASTIC PLUGS
414928005

(2)

HEX. PLASTIC KEYS
414905678

(3)

LOCK PINS ASSY 2 SCREWS
906364
212903020

(1) Parts only for socket
(2) Parts for relay and socket
(3) Parts only for relay

TAC relay
Instructions

Installation

Install socket and connect wiring correctly according identification to terminals. Plug relay into socket. Reverse installation into socket not possible due to mechanical blocking by snap-lock.
Don't reverse polarity of coil connection. Relays can be mounted (tightly) next to each other and in any attitude.
Warning! Never use silicon near by relays

Operation

Before operating always apply voltage to coil to check correct operation.
Long term storage may corrode the silver on the relay pins. Just by plugging the relay into the socket, the female bifurcated receivers will automatically clean the corrosion on the pins and guarantee a good connection.
Do not use the relay in places with flammable gas as the arc generated from switching could ignite gasses.

Maintenance

Correct operation of relay can easily be checked as transparent cover gives good visibility on the moving contacts. When the relay doesn't seem to operate correct, please check presence of coil voltage. Use a multimeter. If LED is used, coil presence should be indicated. If coil voltage is present, but the relay doesn't work, a short circuit of suppression diode is possible (The coil connection was reversed). If relay doesn't work after inspection, please replace relay unit by a similar model. Send defective relay back to manufacturer. Normal wear and tear excluded.

TAC relay
Ordering scheme

Configuration:

TAC	24	UA	-	F	1
1. Relay model	2. Nominal voltage	3. Keying	4. Output capability	5. Cover type	6. Language (test report)

This example represents a **TAC 24 UA F 1**
Description: TAC relay, U_{nom}: 24 VDC, keying UA, relay cover for wire locking spring, test report in English.

1. Relay model

TAC

2 & 3. Nominal voltage and keying

24 UA	24 VDC
36 UB	36 VDC
48 UC	48 VDC
72 UD	72 VDC
110 UC	110 VDC

4. Output capability

–	Standard rating
P	5 A max

5. Relay cover type

–	Relay cover with lock pins
F	Relay cover for wire locking spring

6. Language on test report

–	French
1	English
2	Spanish

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DS-TAC-V2.0 May 2013

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