

N.S1-L-24-4.0.4 relay - Signalling, line

Datasheet



Description

The N.S1-L-24-4.04 24 VDC instantaneous electro-mechanical vital relay is a track side safety relay for the signalling railway market.

It is a single module « plug-in relay » with positive mechanical keying, equipped with 4 normally open contacts and 4 normally closed contacts.

Application

The N.S1-L-24-4.04 is designed for applications such as signaling light control, automatic gate control, point mechanism control, control room.

Features

- Instantaneous electro-mechanical vital relay
- Weld resistant contacts
- Weld no transfer contacts
- Gravity drop out
- Solid gold and bifurcated contacts
- -25 °C...+70 °C operating temperature

Benefits

- Proven reliable
- Long life cycle
- Easy to maintain and replace
- Low life cycle cost
- No maintenance

Railway compliancy

- NF F 70-030 August 2004
- NF F 70-020 September 1991
- NF F 70-031 - Type approval testing procedure
- NF F 70-32 - Series acceptance test procedure

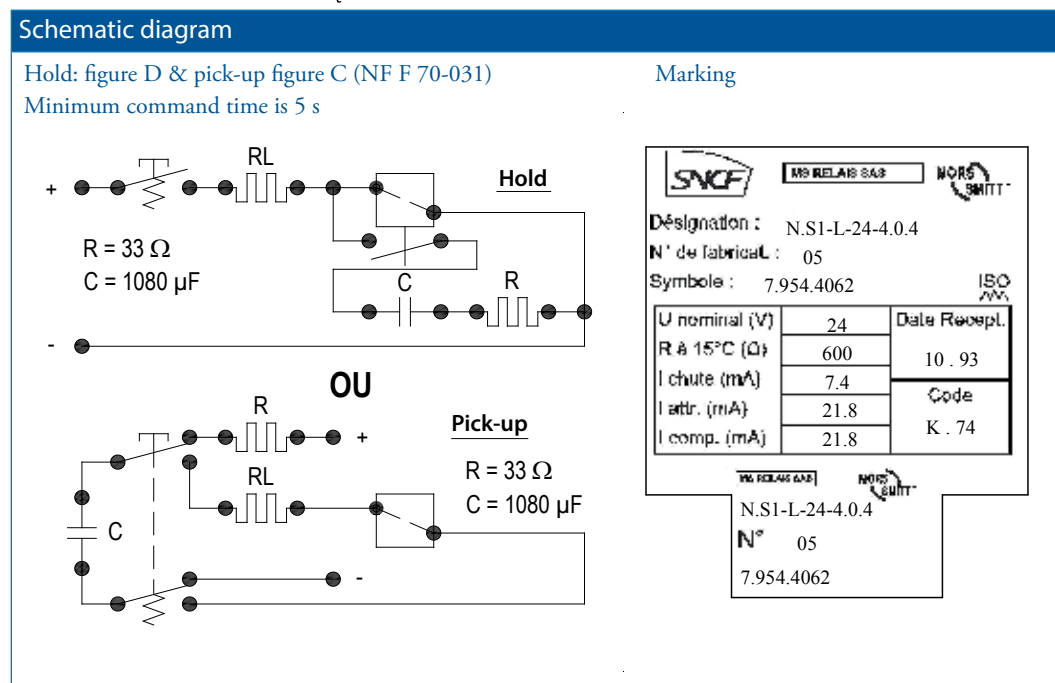
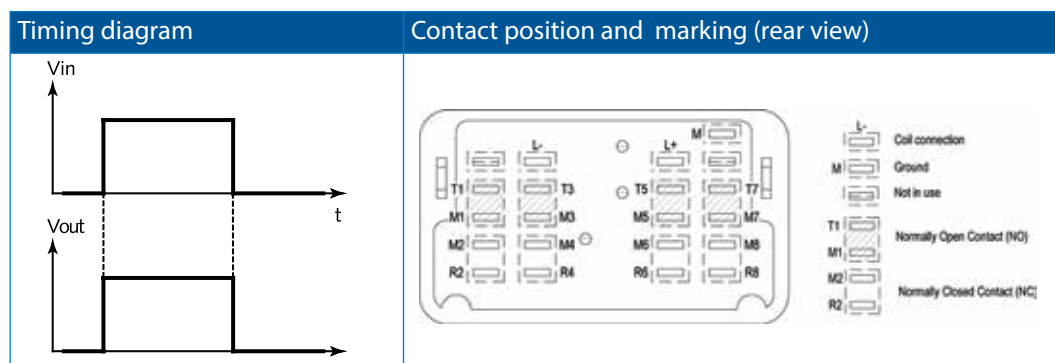


N.S1-L-24-4.0.4 relay

Technical specifications



Functional and connection diagrams



N.S1-L-24-4.0.4 relay

Technical specifications

Function

Function	Line
Housing type (# modules)	1
Contact arrangement:	
- Normally open (N/O)	4
- Change over (C/O)	0
- Normally closed (N/C)	4
Number of command elements (coils)	1

Contact characteristics

Travel and minimum contact gap:	
Minimum travel between the opening of the last making contact and the closing of the first breaking contact (neutral)	0.7 mm
Minimum fixed contact over travel	0.5 mm
Normally open contacts minimum gap when mobile armature is in rest position	1.2 mm
Normally closed contacts minimum gap when mobile armature is picked up	1.2 mm
Alignment	All contacts of the same type must close simultaneously, with a tolerance of 0.3 mm between making of the first and the last contact
Contact pressure	Normally closed: ≥ 0.2 N Normally open: ≥ 0.2 N
Maximum contact bounce time	20 ms

Operating time (ms)

Total pick-up time	$5 \text{ ms} < T_a < 200 \text{ ms}$
Normally open contacts opening time on drop-out	$5 \text{ ms} < T_c < 50 \text{ ms}$
Pick-up transfer time	$1 \text{ ms} < t_a < 70 \text{ ms}$
Drop-out transfer time	$1 \text{ ms} < t_c < 20 \text{ ms}$

General characteristics

Nominal voltage	24 VDC (-6...+20 %)
Coil resistance at 15 °C	600 ohm $\pm 5\%$
Maximum resistance which can be connected in series with the coil	135 ohm
Coil RMS voltage at 50 Hz frequency, which can be applied without generating the closing of an of the N/O contacts	300 V
Minimal drop-out torque	0.15 Nm



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Technical specifications

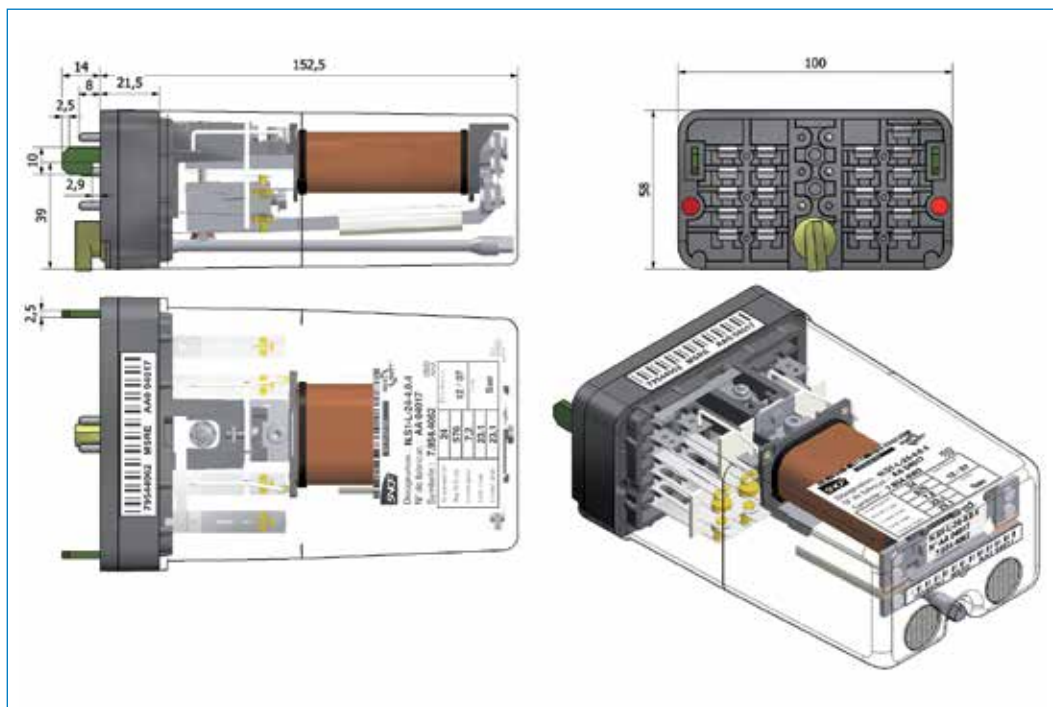
Electrical characteristics

Pick up current	$I_t < 23,5 \text{ mA}$
Drop out current	$4,5 \text{ mA} < I_c < 14 \text{ mA}$
Sensitivity (Ic/I _t ratio)	$s > 0,30$

Mechanical & environmental characteristics

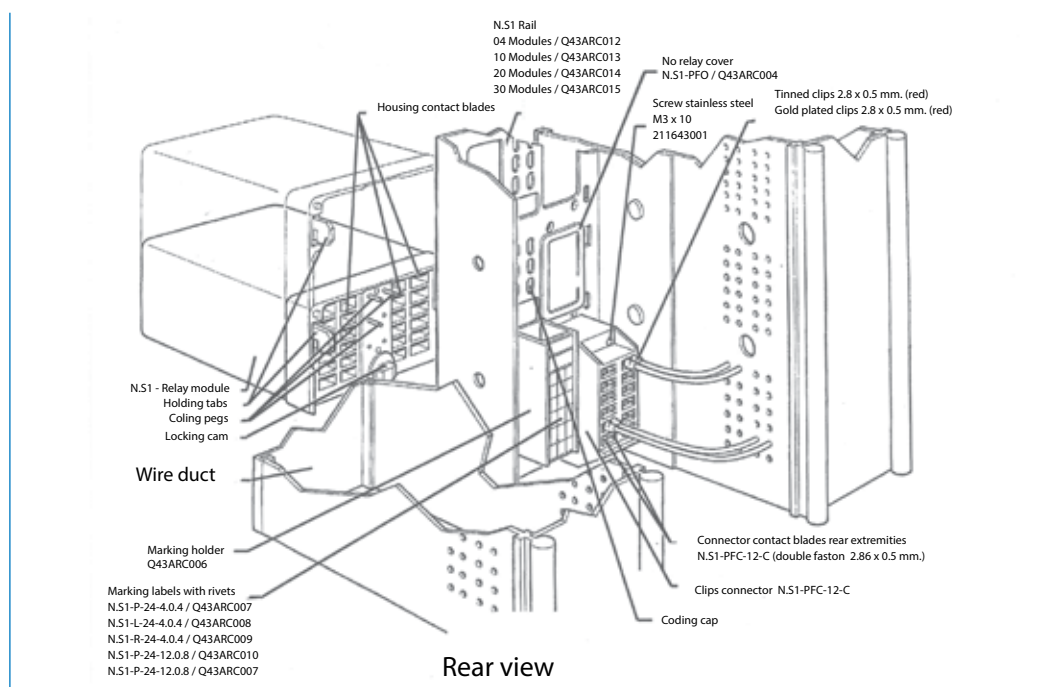
Vibration	0.25 g in X, Y, Z axis
Shock	n/a (track side)
Dimensions	152.5 x 100 x 58 mm
Weight	< 0.95 kg
Temperature	-25 °C...+70 °C
Humidity	95 % @ 20 °C
Salt mist	ISO 9227 for 96 h
Protection	IP 40
Fire & smoke	Polycarbonate (cover) / polyphenylene (base)

Dimensions (mm)



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Mounting possibilities / sockets



Rack / panelmounting

Description	SNCF-symbol	Part number	Quantity
Clips connector	N.S1-PFC.12-C	Q43ARC002	2 per module
Front mount connector	N.S1-PFC-12.AV-24	7.954.3895	1 per module

Additional accessories

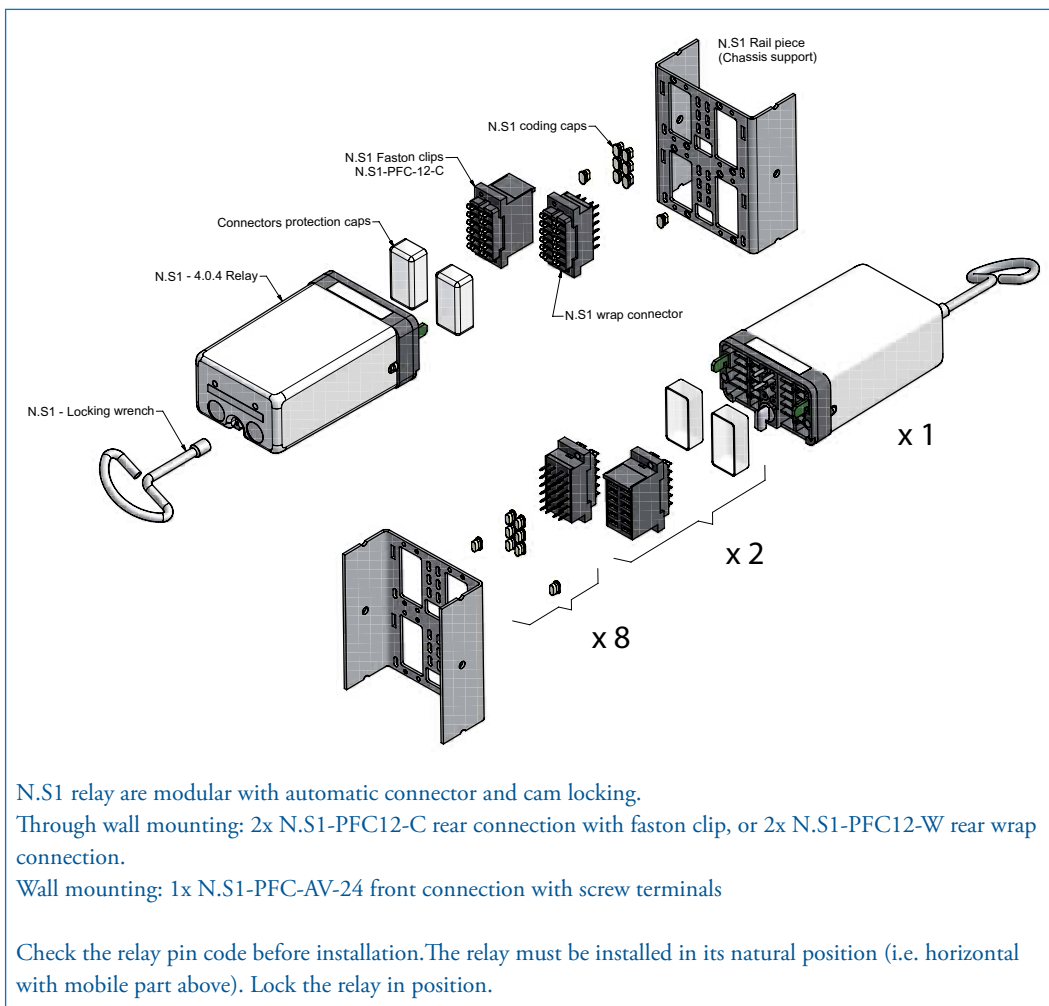
Description	SNCF-symbol	Part number	Quantity	
N.S1 Coding cap	7.966.0496	Q43ARC003	8 per module	
No relay snap-on cover, or no relay empty connector with screws and contacts coding	N.S1-PFO	7.954.0381	optional	
	N.S1-PFCO	7.954.4543	optional	
Marking holder	7.966.0494	Q43ARC006	1	
Screw stainless steel M3x10, or screw zinc brichomated M3x10		211643011	4 per module	
		60301106	4 per module	
Marking labels with rivets		Q43ARC008	1	
N.S1 Rail piece length	4 modules 10 modules 20 modules 30 modules	Q43ARC012 Q43ARC013 Q43ARC014 Q43ARC015	qty varies qty varies qty varies qty varies	
N.S1 Locking wrench		Q43ARC001	qty varies	
Tinned clips 2.8 x 0.5 mm (red), or Gold plated clips 2.8 x 0.5 mm (red)	AMP 140 822-1 or MTR 51031-2	7.847.4609	OEA408221	qty varies
	AMP 140 822-3 or MTR 51027 (gold)	7.847.4593	OEA408222	qty varies



N.S1-L-24-4.0.4 relay

Instructions

Installation



Operation

Before operating, check the integrity of the relay.

Maintenance

Correct operation of relay can easily be checked as transparent cover gives good visibility on the contacts. Relay service life, specified by the end user, depends of the circuit the relay is in use. For regular inspection process of our signalling relays please refer to our instruction document reference IQ2000-030.



N.S1-L-24-4.0.4 relay

Ordering code

Configuration:

N.S1 - L-24 - 4 · 0 · 4





Mors Smitt
A Wabtec Company



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