

N.S1-L-24-12.0.8 relay - Signalling, line

Datasheet



Description

The N.S1-L-24-12.0.8 24 VDC instantaneous electro-mechanical vital relay is a track side safety relay for the signalling railway market.

It is a dual module « plug-in relay » with positive mechanical keying, equipped with 12 normally open contacts and 8 normally closed contacts.

Application

The N.S1-L-24-12.0.8 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-24-12.0.8 relay

Technical specifications



Functional and connection diagrams

| Timing diagram | Contact position and marking (rear view) | | | | | | | | | | | | | | |
|--|---|---------------|----|--------------|--------------|-----|-------|--------------|-----|------|--------------|------|--------------|------|------|
| | | | | | | | | | | | | | | | |
| Schematic diagram | Marking | | | | | | | | | | | | | | |
| <p>Hold: figure D & pick-up figure C (NF F 70-031) Minimum command time is 5 s</p> | <p>Désignation : N.S1-L-24-12.0.8 N° de fabricant : 001 Symbole : 7.954.3824</p> <table border="1"> <thead> <tr> <th>U nominal (V)</th> <th>24</th> <th>Date Recept.</th> </tr> </thead> <tbody> <tr> <td>R à 15°C (Ω)</td> <td>600</td> <td>01_93</td> </tr> <tr> <td>I chute (mA)</td> <td>7.0</td> <td rowspan="2">Code</td> </tr> <tr> <td>I attr. (mA)</td> <td>19.5</td> </tr> <tr> <td>I comp. (mA)</td> <td>19.5</td> <td>K_74</td> </tr> </tbody> </table> | U nominal (V) | 24 | Date Recept. | R à 15°C (Ω) | 600 | 01_93 | I chute (mA) | 7.0 | Code | I attr. (mA) | 19.5 | I comp. (mA) | 19.5 | K_74 |
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N.S1-L-24-12.0.8 relay

Technical specifications

Function

| | |
|------------------------------------|------------------------|
| Function | Signalling, track side |
| Housing type (# modules) | 2 |
| Contact arrangement: | |
| - Normally open (N/O) | 12 |
| - Change over (C/O) | 0 |
| - Normally closed (N/C) | 8 |
| 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 | $5 \text{ ms} < T_a < 350 \text{ ms}$ |
| Normally open contacts opening time on drop-out | $5 \text{ ms} < T_c < 100 \text{ ms}$ |
| Pick-up transfer time | $1 \text{ ms} < t_a < 150 \text{ ms}$ |
| 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 | 200 ohm |
| Coil RMS voltage at 50 Hz frequency, which can be applied without generating the closing of an of the N/O contacts | 450 V |
| Minimal drop-out torque | 0.15 Nm |



N.S1-L-24-12.0.8 relay

Technical specifications

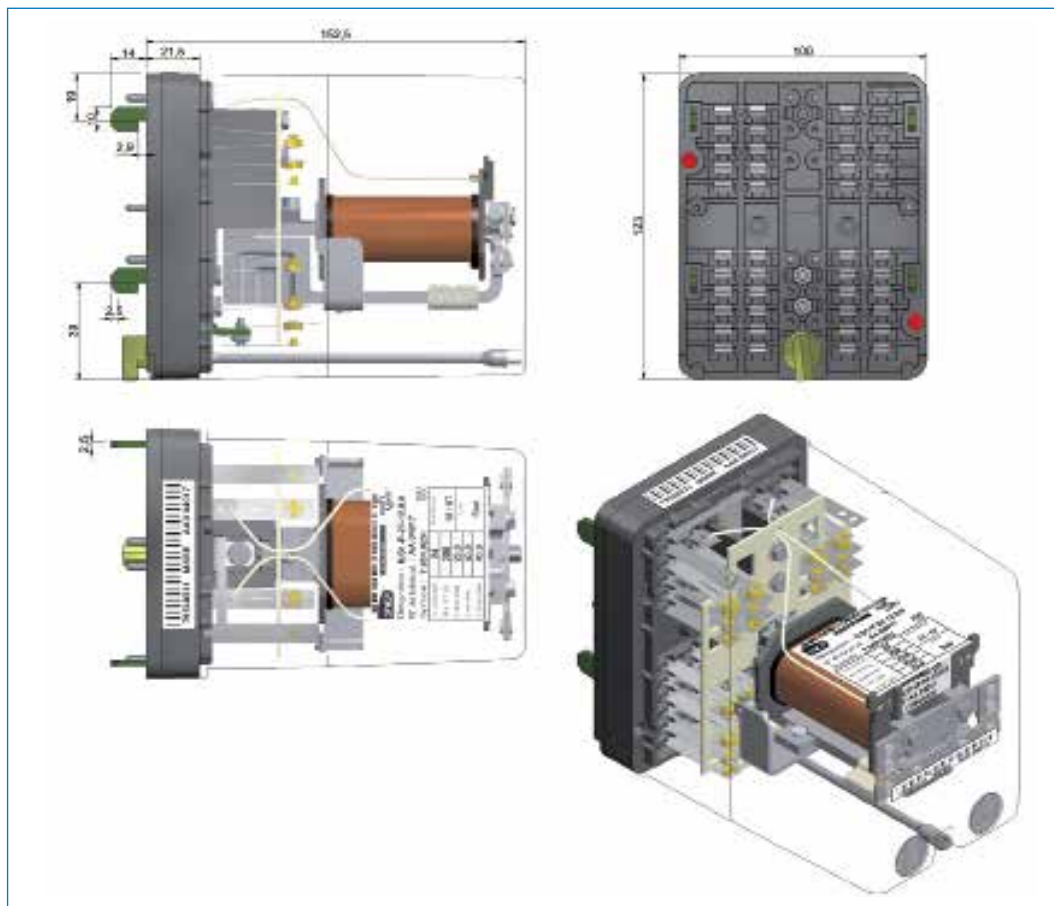
Electrical characteristics

| | |
|--------------------------------|--------------------------------------|
| Pick up current | $I_t < 22 \text{ mA}$ |
| Drop out current | $5 \text{ mA} < I_c < 13 \text{ mA}$ |
| Sensitivity (I_c/I_t ratio) | $s > 0.30$ |

Mechanical & environmental characteristics

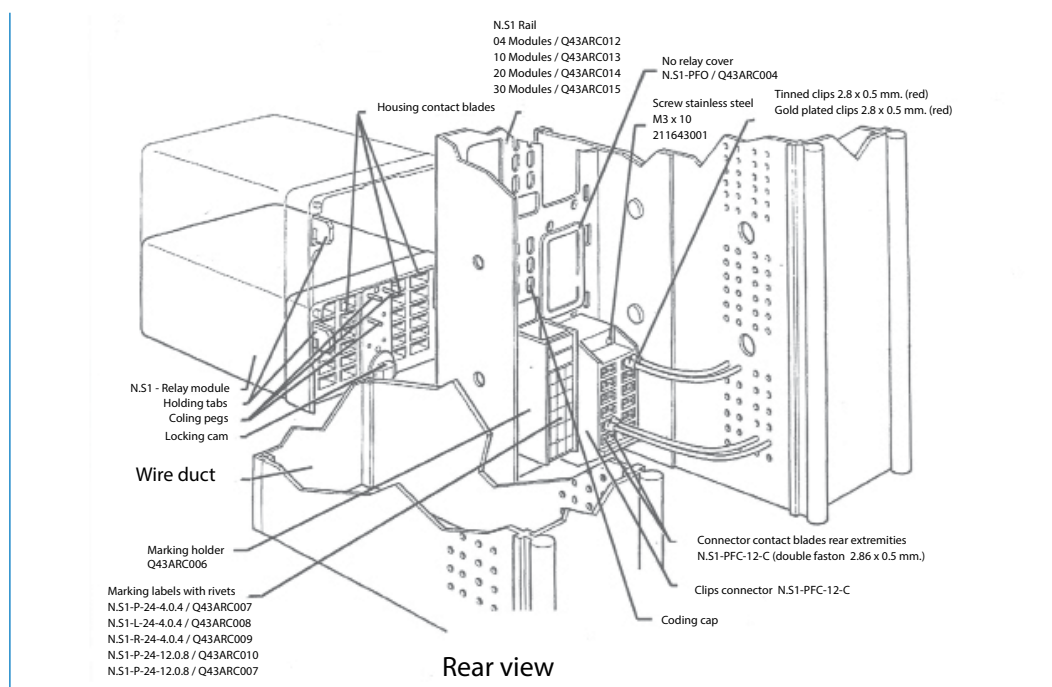
| | |
|--------------|--|
| Vibration | 0.25 g in X, Y, Z axis |
| Shock | n/a (track side relay) |
| Dimensions | 152.5 x 100 x 123 mm |
| Weight | < 1.75 kg |
| Temperature | -25 °C...+70 °C |
| Humidity | 95 % @ 20 °C |
| Salt mist | ISO 9227 for 96 h |
| Protection | IP40 |
| Fire & smoke | Polycarbonate (cover) / polyphenylene (base) |

Dimensions (mm)



N.S1-L-24-12.0.8 relay

Mounting possibilities / sockets



Rack / panelmounting

| Description | SNCF-symbol | Part number | Quantity |
|-----------------------|-------------------|-------------|--------------|
| Clips connector | N.S1-PFC.12-C | Q43ARC002 | 4 per module |
| Front mount connector | N.S1-PFC-12.AV-24 | 7.954.3895 | 2 per module |

Additional accessories

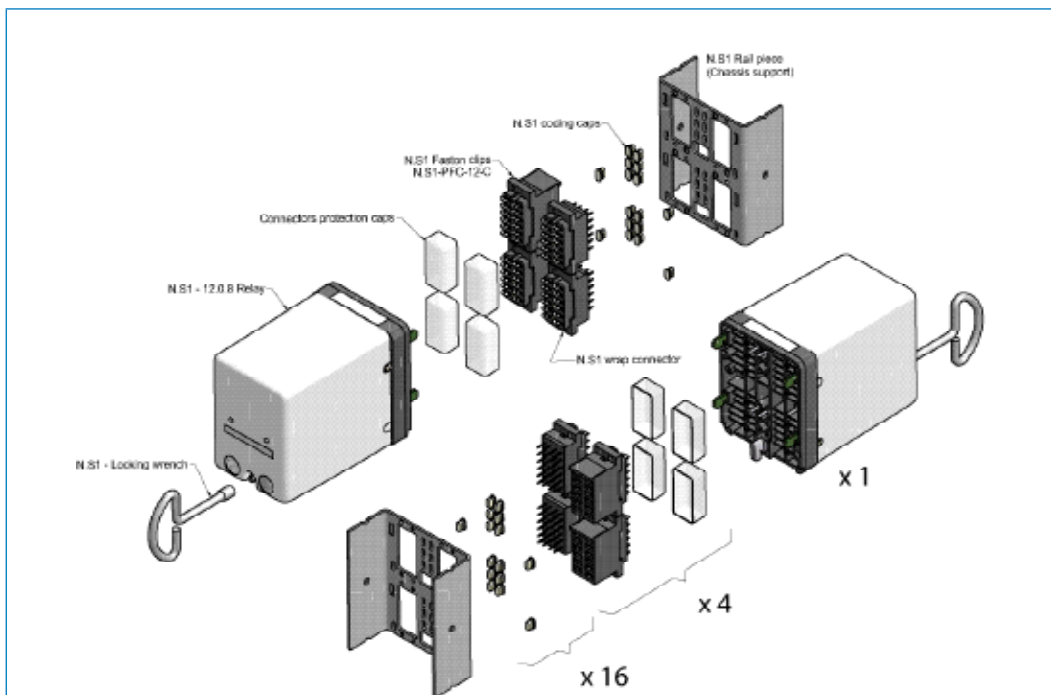
| Description | SNCF-symbol | Part number | Quantity | |
|---|---|-------------|--|--|
| N.S1 Coding cap | 7.966.0496 | Q43ARC003 | 16 per module | |
| No relay snap-on cover, or no relay empty connector with screws and contacts coding | N.S1-PFO | 7.954.0381 | optional | |
| | N.S1-PFCO | 7.954.4543 | optional | |
| Marking holder | 7.966.0494 | Q43ARC006 | 2 | |
| Screw stainless steel M3x10, or screw zinc brichomated M3x10 | | 211643011 | 8 per 2 modules | |
| | | 60301106 | 8 per 2 modules | |
| Marking labels with rivets | | Q43ARC011 | 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-24-12.0.8 relay

Instructions

Installation



N.S1 relays are modular with automatic connector and cam locking.

Through wall mounting: 4x N.S1-PFC12-C rear connection with faston clip, or 4x N.S1-PFC12-W rear wrap connection.

Wall mounting: 2x N.S1-PFC-AV-24 front connection with screw terminals

Check the relay pin code before installation. The relay must be installed in its natural position (i.e. horizontal with mobile part above). Lock the relay in position.

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-24-12.0.8 relay

Ordering code

Configuration:

N.S1 - L-24 - 12 · 0 · 8





Mors Smitt
A Wabtec Company



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