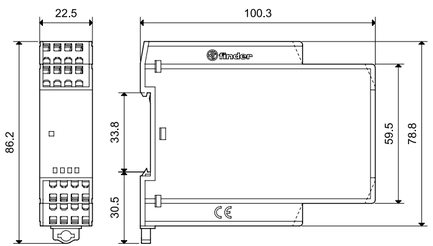
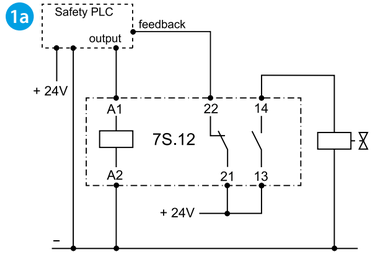
**7S**

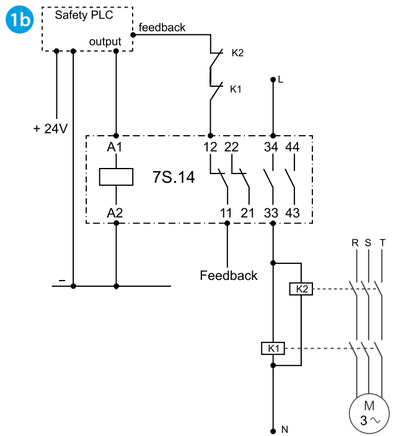
| | | |
|---|---|---|
| | **7S.1x.8.xxx.xxx0**<br>**120** $U_N$ (110...125)V AC<br>**230** $U_N$ (230...240)V AC<br>$U_{min}$ - $U_{max}$ (0.85...1.1)$U_N$ | **7S.1x.9.xxx.xxx0**<br>**012** $U_N$ 12 V DC<br>$U_{min}$ - $U_{max}$ (0.8...1.2)$U_N$<br>**024** $U_N$ 24 V DC<br>**110** $U_N$ 110 V DC<br>$U_{min}$ - $U_{max}$ (0.7...1.25)$U_N$ |
| | P 2.3 VA (50 Hz) / 1 W | |
| | **7S.12.x.xxx.5110** 1NO (SPST– NO) + 1NC (SPST– NC)<br>**7S.14.x.xxx.0220** 2NO (SPST– NO) + 2NC (SPST– NC)<br>**7S.14.x.xxx.0310** 3NO (SPST– NO) + 1NC (SPST– NC)<br>**7S.16.x.xxx.0420** 4NO (SPST– NO) + 2NC (SPST– NC) | |
| | 6 A 250 V AC (∑ I ≤ 12 A) | |
| | AC1<br>AC15 (230V)<br><br>DC1 (30/110/220)V<br><br>DC13 (24V) | 1500 VA<br>500 VA<br>700VA (7S.12)<br>(6/0.6/0.3)A<br>(6/0.6/0.2)A (7S.12)<br>1A |
| | (–40...+70)°C | |
| | IP20 | |

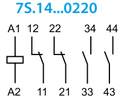
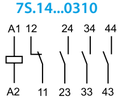
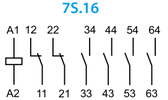
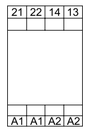
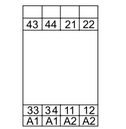
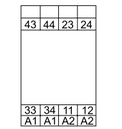
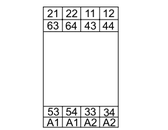


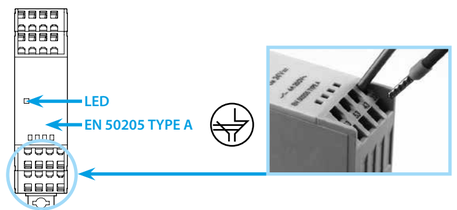

**1a**

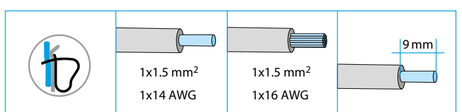



**1b**




| 7S.12 | 7S.14...0220 | 7S.14...0310 | 7S.16 |
|---|---|---|---|
| |  |  |  |
|  |  |  |  |






# ENGLISH

**7S.12/14/16 SIL2 - IEC61508**

**Use of relay with forcibly guided contacts for applications up to SIL2.**
Considering that 7S is a single channel device, the diagnostics, entrusted for example to safety PLC, should be aimed at identifying the fault before the safety function is required. There is no requirement for dynamic tests to be imposed on the relay, but it is required that the frequency of the demand for the NO to open under emergency function will not exceed 1/100 of the demand for it to open under normal machine cycling.
Any time the NO contact fails to open when the coil is de-energized the NC contact will not close, and restarting the machine must then be prevented. Using the relay as a device for realising a safety function requires that circuit techniques well established for safety purposes are followed. ie. Using the NO contacts of a relay which will remove the power supply circuit from the load when the coil is de-energised. On this basis, the failure of the NO contact to close is a failure in safety, whereas failure to open is a dangerous failure.

**Relay interface type 7S.12.9xxx.5110**

| SIL | Load Type | Cycle time (s) | $PFH_D$ (1/h) | External diagnostic | Architecture | DC avg |
|---|---|---|---|---|---|---|
| 2 | AC1-8 A 250 V | 180 | $9*10^{-7}$ | YES | Single channel | 90% |
| 2 | AC1-4 A 250 V | 120 | $8.5*10^{-7}$ | YES | Single channel | 90% |
| 2 | AC15-3 A 250 V | 450 | $9.4*10^{-7}$ | YES | Single channel | 90% |
| 2 | AC15-2 A 250 V | 240 | $9.3*10^{-7}$ | YES | Single channel | 90% |
| 2 | AC15-1 A 250 V | 180 | $8*10^{-7}$ | YES | Single channel | 90% |
| 2 | DC13-1 A 24 V, 60 ms | 180 | $9.5*10^{-7}$ | YES | Single channel | 90% |

**Relay interface type**
**7S.14.9xxx.0310 - 7S.14.9xxx.0220 - 7S.16.9xxx.0420**

| SIL | Load Type | Cycle time (s) | $PFH_D$ (1/h) | External diagnostic | Architecture | DC avg |
|---|---|---|---|---|---|---|
| 2 | AC15-3A 230V | 30 | $6*10^{-7}$ | YES | Single channel | 90% |
| 2 | AC15 - 1.5 A 230V | 12 | $9.3*10^{-7}$ | YES | Single channel | 90% |
| 2 | DC13-5 A 24 V, 100 ms | 60 | $7.7*10^{-7}$ | YES | Single channel | 90% |

1a Direct load switching & contact diagnostics-common supply
1b Indirect load switching & contact diagnostics-different load supply