Installation- / Safety technique

Delay module BA 7924, IL 7824, IN 7824, release delay

- According to EC Directive for machines 98/37/EG
- According to IEC/EN 61 812-1, IEC/EN 60 204-1
- Release delay
- Optionally with redundant timing circuit
- Without auxiliary voltage
- Output: 1 NC, 1 NO contacts, positively-driven
- Optionally with adjustable or fixed time delay up to 30 s
- Optionally with 1 or 2 separate timing circuits
- Optionally also in housing for distribution board
- Operating state display
- Width 45 mm, 35 mm or 52,5 mm

Approvals and marking

Application

Delayed switch-off in safety-oriented controls

Indication

LED's comes on when A1 / A2 connected to supply

Notes

The output contacts of the two timing circuits are connected in series in the BA 7924.21/002 and /003 modules. This results in so-called switch-off redundancy, i.e. the contact path 27-28 is opened reliably after expiry of the predefined delay time, even if a contact in this path is welded.

Circuit diagrams

All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.
### Technical data

#### Time ranges
- **BA 7924.21:** 0.1 ... 1 s; 0.3 ... 3 s; 0.5 ... 5 s; 1 ... 10 s; 3 ... 30 s
- **BA 7924.21/001:** 1 s; 3 s; 5 s; 10 s; 30 s fixed
- **BA 7924.21/002:** 5 s; 10 s fixed
- **BA 7924.21/003:** 0.5 ... 5 s; 1 ... 10 s
- **IL 7824.21:** 0.1 ... 1 s; 0.3 ... 3 s fixed
- **IL 7824.21/100:** 0.5 s; 1 s; 3 s fixed
- **IN 7824.21:** 0.5 ... 5 s; 1 ... 10 s
- **IN 7824.21/100:** 5 s; 10 s fixed

#### Repeat accuracy:
- Upper half of setting range: ± 15 % of set value
- Lower half of setting range: ± 25 % of full scale value

#### Setting accuracy
- Upper half of setting range: ± 100 % of full scale value

#### Input
- **Nominal voltage** $U_N$: DC 24 V
- **Voltage range**: AC 0.8 ... 1.1 $U_N$
- **At 10 % residual ripple**: DC 0.9 ... 1.2 $U_N$
- **Nominal consumption**: 0.85 W / 4.5 VA
- **At BA 7924.21/002 and BA 7924.21/003**: 1.7 W
- **Nominal frequency**: 50 / 60 Hz

#### Output
- **Contacts**
  - BA 7924.21: 1 NC, 1 NO contacts
  - IL/IN 7824.21: 1 NC, 1 NO contacts
- **Contact type**: Relay, positively-driven
- **Nominal output voltage**: AC 10 ... 250 V, DC 10 ... 110 V
- **Thermal current $I_{th}$**: max. 8 A
- **Switching capacity to AC 15**:
  - 3 A / AC 230 V for NO contact
  - 1 A / AC 230 V for NC contact
- **Electrical life to AC 15 at 1 A, AC 230 V**: $\geq 2.5 \times 10^5$ switching cycles
- **Permissible operating frequency**: max. 2000 switching cycles / h
- **Short circuit strength**
  - Max. fuse rating: 6 A gL
  - Mechanical life: $10 \times 10^5$ switching cycles

#### General data
- **Operating mode**: Continuous operation
- **Temperature range**: -20 ... + 60 °C
- **Clearance and creepage distances**
  - Overvoltage category / contamination level: 4 kV / 2 IEC 60 664-1
- **EMC**
  - Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2
  - HF irradiation: 10 V / m IEC/EN 61 000-4-3
  - Fast transients: 4 kV IEC/EN 61 000-4-4
  - Interference suppression limit value class B EN 55011
- **Degree of protection**
  - Housing: IP 40 IEC/EN 60 529
  - Terminal plate: IP 20 IEC/EN 60 529
- **Vibration resistance**
  - Amplitude 0.35 mm, IEC/EN 60 068-2-6
  - Frequency 10 ... 55 Hz
- **Climate resistance**
  - BA 7924: 20 / 060 / 04 IEC/EN 60 068-1
  - Terminal arrangement: DIN 46199-5
  - Terminal designation: EN 50 005

### Technical data

#### Wire connection:
- Max. 2 x 2.5 mm² solid or max. 2 x 1.5 mm² stranded ferruled DIN 46 228-1/-2/-3/-4
- Wire fixing: Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
- Mounting: DIN rail IEC/EN 60 715
- Weight:
  - BA 7924 DC / AC: 200 g / 350 g
  - IL 7824 / IN 7824: 120 g / 150 g

#### Dimensions
- **Width x height x depth**
  - BA 7924: 45 x 74 x 133 mm
  - IL 7824: 35 x 89 x 58 mm
  - IN 7824: 52,5 x 89 x 58 mm

#### Standard type
- **BA 7924.21 DC 24 V**: 0.3 ... 3 s
- **Article number**: 0039707
- **Stock item**
- **Output**: 1 NO contact
- **Nominal voltage $U_N$**: DC 24 V
- **Time range**: 0.3 ... 3 s
- **Width**: 45 mm

#### Variants
- **BA 7924.21/61**: with UL approval (Canada/USA)
- **BA 7924.21**: 1 timing circuit, adjustable time
- **BA 7924.21/001**: 1 timing circuit, fixed time
- **BA 7924.21/002**: 2 timing circuit, fixed time
- **BA 7924.21/003**: 2 timing circuit, adjustable time
- **IL 7824.21**: 1 timing circuit, adjustable time delay, 35 mm wide
- **IN 7824.21**: 1 timing circuit, adjustable time delay, 55 mm wide
- **BA 7824.21/100**: 1 timing circuit, fixed time delay, 35 mm wide
- **IN 7824.21/100**: 1 timing circuit, fixed time delay, 55 mm wide

#### Ordering example for variants
- **BA 7924.21 / _ _ _ DC 24 V**: 0.5 ... 5 s

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