

Adaptation unit Tina 5A



Approvals:



Application:

- Bypassing of safety device connected to the dynamic safety circuit and for supervision of lamp indication.

Features:

- One or more safety devices can be bypassed
- supervised lamp indication
- Indication of status by LEDs

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Function

The Tina 5A is designed for bypassing of safety devices connected to the Vital/Pluto safety circuit and for supervision of lamp indication.

During bypassing of safety devices e.g. a light grid or an interlocked gate, it must only be possible to allow the bypass function if a lamp indication is on. The lamp indication must therefore be supervised. Whether indication is required depends on the specific situation and result of risk analysis.

When the Tina 5A receives a coded dynamic signal to S1 and the bypass indication lamp is on (connected across L1-L2), a bypassing output signal is provided on S2 and S3. A broken or short circuit in the indication lamp leads to an interruption of the bypass output signal on S2 and S3, therefore stopping the bypassing.

The dynamic signal to S1 on Tina 5A must be the input signal from the first of the safety devices intended to bypass. The signal can be connected via output contacts from a safety relay, a safety timer or be initiated via a unit providing the dynamic coded signal as for example an Eden sensor or a Spot light beam. The dynamic output from S2 or S3 is connected to the output of the safeguards to be bypassed

S2 is used if:

- an odd number of dynamic safety units is to be bypassed using an odd number of dynamic safety units, i.e. the sum of Tina + Eden and Spot units (incl. Tina 5A). See drawing HE3824C
- an even number of dynamic safety units is to be bypassed using an even number of dynamic safety units, i.e. the sum of Tina + Eden and Spot units (incl. Tina 5A). See drawing HE3824F

S3 is used if:

- an odd number of dynamic safety units is to be bypassed using an even number of dynamic safety units, i.e. the sum of Tina + Eden and Spot units (incl. Tina 5A). See drawing HE3824D
- an even number of dynamic safety units is to be bypassed using an odd number of dynamic safety units, i.e. the sum of Tina + Eden and Spot units (incl. Tina 5A). See drawing HE3824E

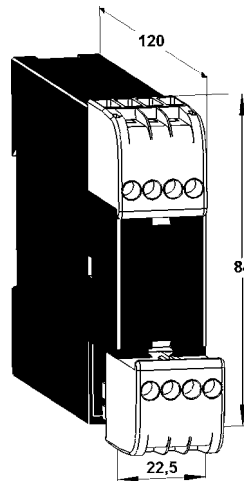
The total number of dynamic safety units is calculated by adding the number of Eden, Spot and Tina units connected in the Vital circuit. See the connection examples HE3824C, D, E, F or G.

Technical data – Tina 5A

Article number	2TLA020054R1900
Level of safety	SIL3
IEC/EN 61508-1...7	SIL3
EN 62061	PL e/Cat. 4
EN ISO 13849-1	
PFH ₀	4.50 × 10 ⁻⁹
Power supply	
Operating voltage	24 VDC + +10%, -10%
Current consumption, A1-A2	No bypass: 10 mA
Bypass connection	Bypass using a 5 W indication lamp: 240 mA Tina 5A can bypass max. 30 Eden/Tina-units or 6 Spot T/R
Time delay t (in/out)	t < 260 μs
Voltage supply at normal operation (protection OK) and 24 VDC supply voltage	Dynamic input: between 9 and 13 volt (RMS) Dynamic output: between 9 and 13 volt (RMS) Information output: ~ 23 VDC
Protection class	Enclosure: IP40 Connection block: IP20
Ambient temperature	-10...+55°C
Humidity range	35 to 85 % (with no icing or condensation)
Housing material	Based on polyamide, Macromelt OM646 (V0)
Connectors	Connection blocks with a total of 8 terminals (2 x 4)
Mounting	35 mm DIN rail
Size	120 × 84 × 22.5 mm (L x W x H)
Weight	~135 g
Colour	Grey
Approved standards	European Machinery Directive 2006/42/EC, EN ISO 12100-1:2003, EN ISO 12100-2:2003, EN 60204-1:2007, EN ISO 13849-1:2008, EN 62061:2005, EN 61496-1:2004 + A1:2008
Certificates	TÜV Nord

Bypassing of Eden and Tina units

If one or more Eden or Tina units are bypassed by a Tina 5A, a diode, such as a 1N4007 must be inserted with forward current out from pin 4 of the last bypassed unit. If one or more Eden or Tina units are bypassed by one or more Eden or Tina units direct to each other, a diode, such as a 1N4007 must be inserted by the last unit in both loops with forward current out from pin 4. Refer to example HD3801A. In the case of bypassing of a Tina 10A, B or C or of more than one unit towards each other, it is recommended that a Tina 5A or M12-3M is used. See the examples HE3824C, D, E, F or G.



Connections:

- +A1:** +24 VDC
- Y14:** Information of bypass
- L1-L2:** Bypass lamp
(or 820 ohm/2W resistor)
- A2:** 0 VDC
- S1:** Dynamic signal in
- S2:** Dynamic signal out,
transcoded
- S3:** Dynamic signal out,
transcoded twice