

Description

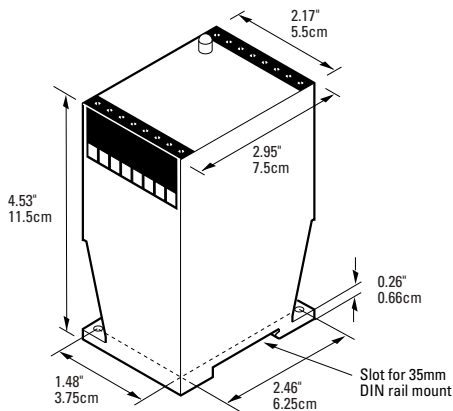
The INT-04 Series Emergency-Stop (E-Stop) Safety Relays are designed for use as part of a safety circuit in emergency-stop or safety floor mat sensing applications. Each is a safety relay that uses positive-guided relays, configured for self-checking, to inhibit machine restart in case of internal component failure.

The INT-04 relay can also monitor contacts on external relays for controlling primary machine control elements or expansion block relays (INT-05 or INT-06).

TUV Notes:

1. Relay conforms to Pollution Degree II, meets EN1760-1:1998, and must be installed in an IP54-type enclosure.
2. The wire insulation of connected devices must be rated for 250VAC. The relay meets basic insulation requirements only.
3. Input devices must meet requirements of EN60947-5-1.
4. The relay must be connected to a primary disconnect device that meets the requirements of EN60947-3.
5. System total response time must not exceed 200ms.
6. Controller meets IP20 and must be connected to safety category 4 mat or sensing device.
7. Test system before operation and after machine maintenance. Controller does not require maintenance.
8. The complete system should be tested weekly. If a fault occurs, contact Sentrol Industrial.

Dimensions



Integrity Series

Emergency-Stop Safety Relay

INT-04 INT-04-024 INT-04 _____
 INT-04-120



Installation

1. Mount the relay on a 35mm DIN rail or panel. See *Dimensions*.
2. Connect the wiring for the switches and relay. See *Wiring Diagrams*. (For proper operation, DO NOT jumper terminal 1 to terminal 2. Use a momentary button.) For floor mat applications, connect the two floor mat loops from terminal X1 to X2 and from Y1 to Y2.

Caution! The relay is available in either a 24 VDC, 120 VAC, or 230 VAC model. Make sure you are using the correct model before you apply power.

3. Use one of the following methods to energize the relay:

- For E-stop installations, close all E-stop button contacts and monitored contacts, and then press the START button.
- For floor mat installations, press the START button without an object on the mat.

Note: Use only outputs A, B, C, and D for safety outputs. The auxiliary outputs E, F, and G may fail in an unsafe condition and should only be used for signaling.

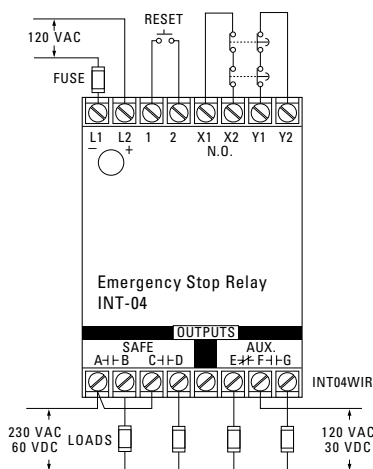
E-Stop Relay

When installed as an E-stop relay, the device monitors both contacts on the E-stop buttons to ensure both have opened and closed to allow machine restart. Multiple contacts can be wired in series. Upon failure of either contact, the relay turns off and prevents a restart.

Safety Floor Mat Relay

When installed as a Safety Floor Mat relay, the INT-04 monitors both loops of a safety floor mat. The safety outputs of the INT-04 turn off when an operator steps on the mat. The relay incorporates loop break detection to turn off if one of the loops breaks or becomes disconnected.

Typical Wiring Diagram



Auxiliary Contacts

POWER	RESET (1, 2)	E-STOPS	E, F	F, G
Off	Open or Closed	Open or Closed	Closed	Open
On	Open	Open or Closed	Closed	Open
On	Open or Closed	Open	Closed	Open
On	Closed	Closed	Open	Closed

Reset "Open" is prior to initiating a cycle.

Reset "Closed" can be momentary to maintained.



Declaration of Conformity available upon request.

European Directives

Machinery Directive (98/37/EEC)

Low Voltage Directive (73/23/EEC), LVD

Specific European Standards

EN60204-1 Safety of electrical equipment of industrial machines: 1993

EN954-1 Risk Assessment Category 4 depending on wiring method. See diagrams: 1997

EN50081-2 Electromagnetic Emissions: 1995

EN50082-2 Electromagnetic Immunity: 1995

IEC 664-1 Insulation requirements: 1992

IEC 68, part 2-1, 2-2, 2-3, 2-6, 2-14, 2-27, 2-30.

EN1760-1:1998

General Specifications

Listings	TUV, UL E122942	
Weight	INT-04-24	9oz
	INT-04-120	15oz
Field wiring size	12 gauge max.	
Environmental rating	Pollution Degree II	
Controller rating	IP20	
Temperature range	32°F to 149°F (-0°C to 65°C)	
Relative humidity	30 to 95% non-condensing	
Power Supply (+, - or L1, L2)		

INT-04-024	24VDC +/-15%
Required fuse	1/4A (250V, 5x20mm, F/T)
INT-04-120	120VAC +10%, -20%, 5VA, 50/60Hz
Required Fuse	80mA (250V, 5x20mm, F/T)

Control Inputs (X1, X2 & Y1, Y2 terminals)

Open-circuit voltage	24VDC
Closed-circuit current	24mA
Max. contact resistance	30 Ohms
Simultaneity	500ms typical

Safe Outputs (A, B & C, D terminals)

Voltage	230VAC/60VDC
Current	4A (resistive) each output
Response time	ON: <100ms OFF: <100ms
Required Fuse	4A (250V, 5x20mm, F/T)
Life Expectancy	100,000 cycles

Signaling Outputs (E, F, and G terminals)

Voltage:	120VAC/30VDC
Current:	1A (resistive)



File E 122942

Ordering/Electrical Specifications

PART NUMBER	POWER INPUT	INPUT FUSE REQUIRED
INT-04-024	24VDC +/-15%, 100mA	Fast acting 1/4mA (250V, 5 x 20mm, F/T)
INT-04-120	120VAC +10% -20%, 5VA, 50/60Hz	Fast acting 80mA (250V, 5 x 20mm, F/T)