

# Manostar Switch For intrinsically safe apparatus

WO81

WO70

FR51A

MS30

MS61A

MS65

EB3C

EMD8

EMD7

EMT6

EMT1

EMTGP1

EMT1H

EMP5

EMA3

EMRT1

HWS15

Combination of Manosys

Accessories

Application Cautions for use Maintenance

## Contact signal transducer EB3C For intrinsically safe apparatus

(Intrinsically-safe system can be constructed by using with the combination of manostar switch of low electrical load type and EB3C)



Explosion-proof performance	Relay barrier : [Exia] II C
	Switch(EB9Z-A) : Exia II CT6
	Switch(EB9Z-A1) : Exia II BT6

The one that public institution admitted explosion-proof safety by test, is called "Intrinsically-safe apparatus", which is designed in consideration of a necessary safety factor to make a combustible gas not ignited by the spark or rising in temperature at normal condition and even at accident.

- Technical standard (IEC60079) conformity
- Compact and lightweight
- Universal AC power supply voltage from AC 100 to 240 V
- No grounding required
- Spring-up terminal of the terminal block reduce wiring time.
- Installation method : 35 mm DIN rail or screws
- Global use USA/FM, Canada/CSA, Europe/CE, ATEX, Japan/TIIS (Technology institution of industrial safety)
- Class NK approval test (nippon kaiji association) is passed



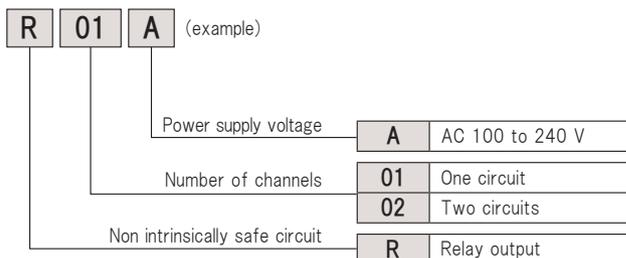
**EB3C-R01A**  
(one circuit)



**EB3C-R02A**  
(two circuits)

### Product code

**E B 3 C - R 01 A** (example)

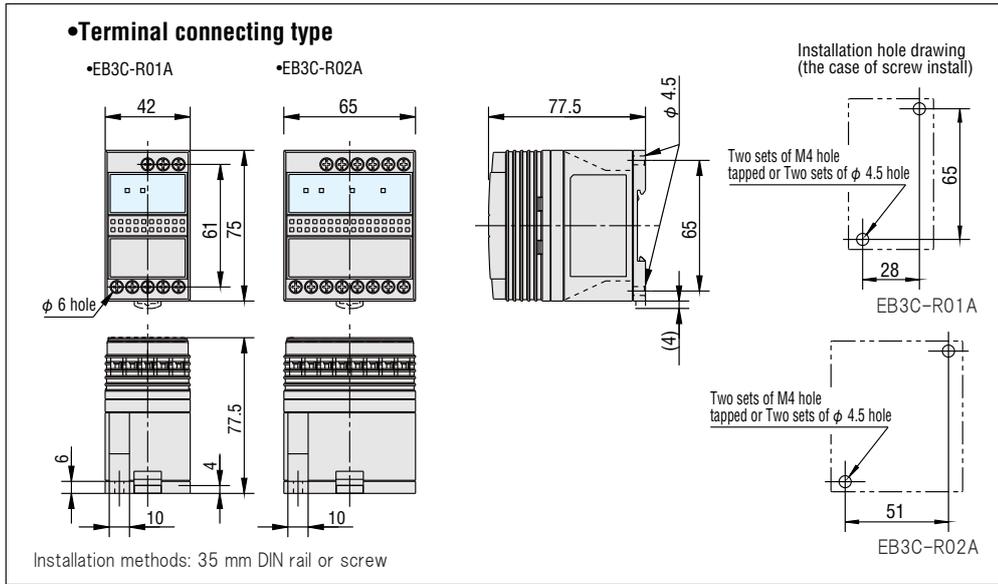


◆ If you order or ask, please specify the product code and the pressure range code.  
◆ EB3C is produced by IDEC IZUMI Co., Ltd.

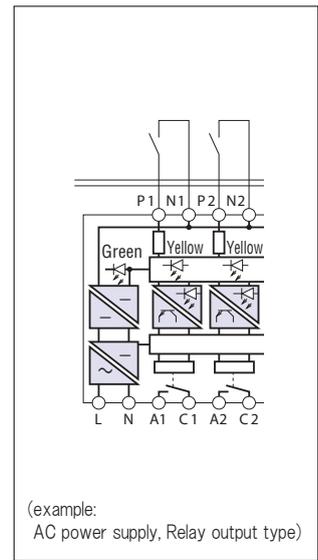
## Specification

Types	EB3C-R01A		EB3C-R02A		
Number of circuits	One circuit		Two circuits		
Power supply voltage Explosion-proof type Degree of protection Installation location	AC 100 to 240 V Intrinsically safe apparatus composition IP20(IEC60529) Relay barrier: Safe indoor place (non-hazardous area) The contact installed in hazardous place: For zone zero, one, two hazardous areas		Withstand voltage  Insulation resistance Medium and ambient temperature Ambient humidity	Between intrinsically safe circuit and non-intrinsically safe apparatus circuit: AC 1500 V Between AC power supply and output terminal: AC 1500 V 10 MΩ or more (at 500 V DC megger) - 20 to + 60 °C (no freezing) 45 to 85 % RH (no dewing)	
Power supply consumptions (approximately) Masses (approximately)	3.0 W at AC 100 V, 3.9 W at AC 200 V 150 g			3.5 W at AC 100 V, 4.6 W at AC 200 V 180 g	
Intrinsically safe circuit	Rated operating voltage: DC 12 V ± 10 % Rated operating current: DC 10 mA ± 20 % Max. output voltage: 13.2 V Max. output current wiring one channel separate: 14.2 mA Common channels wiring: 227.2 mA Max. external capacitance: 740 nF		Max. external inductance: wiring one channel separate: 125 mH Common channels wiring: 0.68 mH Max. wiring resistance: wiring one channel separate: 300 Ω Common channels wiring: 600 / (n+1) Ω (n=number of common channels) Max. circuits on wiring common line: 8 circuits (Max. 16 circuits)		
Non-intrinsically safe circuit	Relay output Contact composition: 1a contact Rated insulation voltage: AC 250 V, DC 125 V Max. current turned on the power supply current: 3 A		Rated load: Resistive load: AC 250 V 3 A, DC 24 V 3 A Inductive load: AC 250 V 3 A (cos φ=0.3 to 0.4) DC 24 V 2A (L/R= 7 ms)		
Accessory	Japanese explosion-proof certificate, Caution name plate for static electricity				

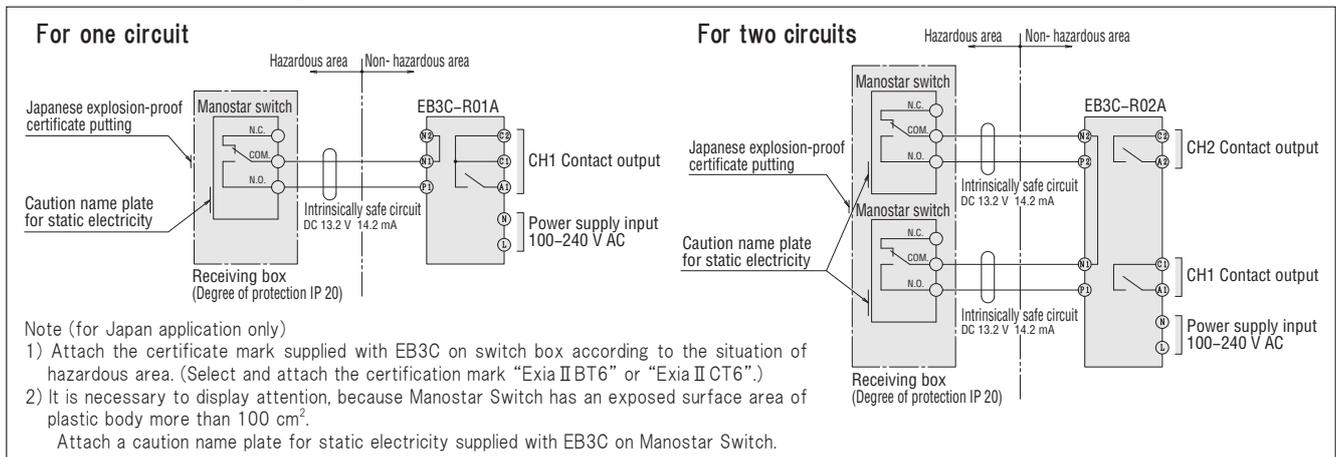
## Outline drawing



## Example of internal circuit block diagram



## Terminal connection diagram



	Do not apply excessive torque more than necessary, otherwise it will damage the instrument body. Tighten the screw of terminal with the torque from 0.6 to 1.0 N·m.		In case of using Manostar Switch as intrinsically-safe system, use the low electrical load type.
--	--	--	--

- WO81
- WO70
- FR51A
- MS30
- MS61A
- MS65
- EB3C**
- EMD8
- EMD7
- EMT6
- EMT1
- EMTGP1
- EMT1H
- EMP5
- EMA3
- EMRT1
- HWS15
- Combination of Manosys
- Accessories
- Application Cautions for use Maintenance

## Product Warranty

### Warranty Period

This product warranty is valid for one year from the date of delivery to a place specified by an ordering party who has transacted directly with Yamamoto Electric Works Co., Ltd.

### Coverage

If a product breaks down due to a reason for which we are responsible during the warranty period and you return the product to us, we will either repair or replace the product free of charge.

This warranty does not cover:

- (1) Usage of the product under any inappropriate conditions or environment contrary to what is described in our product catalog, specifications or manual.  
Handling or usage of the product other than as described in our product catalog, specifications or manual.
- (2) Breakdown due to a reason other than a fault within our product.
- (3) Any product that has been modified or repaired by a party other than us.
- (4) Any breakdown due to a reason that was not foreseeable based on scientific and technical standards applied at the time of shipment.
- (5) Any breakdown due to a reason not attributable to us such as a natural calamity or other disaster.

These terms of warranty represent our entire liability with respect to the product, and we shall have no liability for any other loss arising in connection with a breakdown of the product.

\*This product warranty is only valid within Japan.

This document is a translation from the original Japanese version, and the original Japanese version has priority over this translation.

Be sure to refer to the original Japanese for the details of this warranty.



Caution

The Japanese original document shall always take precedence over the translated versions.

You should be sure to refer to the Japanese original document.

Sole Agent  **Manostar CO.,LTD.**

1-2-3, Nishishiriike-cho, Nagata-ku, Kobe,  
Hyogo 653-0031 JAPAN  
TEL. +81 (78) 621-7000 FAX. +81 (78) 621-7788

Manufacturer

 **Yamamoto Electric Works Co., Ltd.**

1-2-3, Nishishiriike-cho, Nagata-ku, Kobe,  
Hyogo 653-0031 JAPAN  
TEL. +81 (78) 631-6000 FAX. +81 (78) 631-6020