

ITS position monitoring switch Installation and operating manual



(ITS-M0101/0903)

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**Position monitoring switch ITS100 series
Installation and operating manual (ITS-M0101/0903)**

ITS 100 POSITION MONITORING SWITCH

ITS position monitoring switch

Note : These instruction are divided by several sectors, and please make sure to carefully read all the matter and follow the procedure

Description

ITS position monitoring switch is used for the valve and actuators which rotates 90degree quarter turn. The first function of ITS is to provide the visual indication of the current position of the valve and actuator. Dome indicator unit shows current position by color indication. If there is full red color indication, current position of valve or actuator is fully closed position, and yellow is on fully open position. Different Color indication combination can be provided by customer's specific requirement

Secondly ITS provide electrical signal at the fully open or closed position by activating mechanical switches (SPDT, SPST), Proximity sensors and other magnetic sensors which independently makes function. Switches vary in a wide range and construction to meet customer's requirement.

ITS has function direction tree installation on valve different, and generally no need to adjust position of the internal cams to activate the switches as long as 0 at close and 90 at open because of adjustable cam. If it is required, customer can adjust it easily with finger or hand watching it's movement. Red is for close position and Yellow is for open position.

Enclosure is designed to protect inside as IP67 and no restriction to install for any place except for the hazardous area.



Standard ITS100

Installation

Please check the switch type and rating on the name plate on ITS enclosure, and be careful not to electrically exceed the switch rating.

All installation and maintenance should be done by authorized personnel only

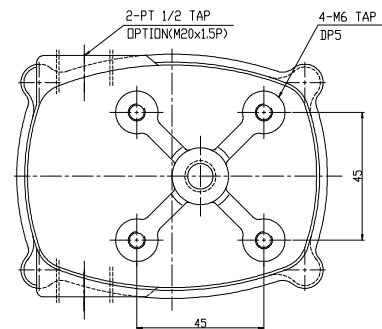
Caution : In order to avoid unexpected accident, serious injury and property damage, make sure to cut all power supply to the actuator and valve before inspection, maintenance and repair , Ambient temperature : -20°C ~+60°C

Direction and positioning of installation: No limitation excluding hazardous area

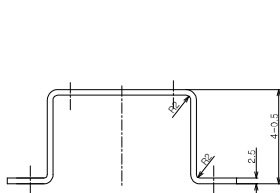
Mounting

Proper size of Mounting bracket is required for mounting ITS on valve or actuator. Standard Mounting bracket is provided together with ITS, but in case of special making by customer for special application, please refer to the drawing in right hand-side. The most important thing in mounting is to align the shaft of valve (or actuator) and ITS' shaft. ITS's shaft is done according to NAMUR standard, so that it may suitable for various application without further modification.

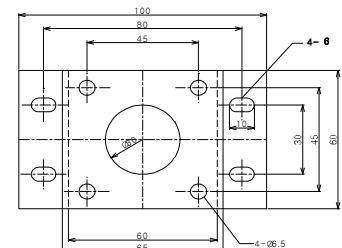
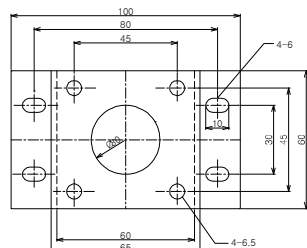
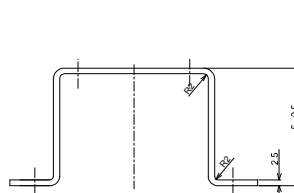
Below drawings are the standard mounting bracket to be provided together with ITS100 as free of charge



20x30 H=20



20x30 H=30



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Electrical wiring

Electrical wiring must be done in accordance with the specification of international standard or local specific regulation.

ITS100 provides two 1/2" PT conduit for the wiring and by using proper Coupling, secure the tight sealing.

Wiring of mechanical switch

After loosening 4 screws, open upper cover.

Standard ITS100 has 8 terminal strips.

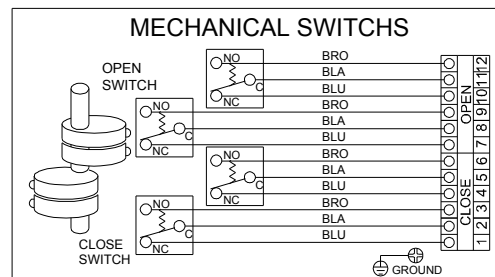
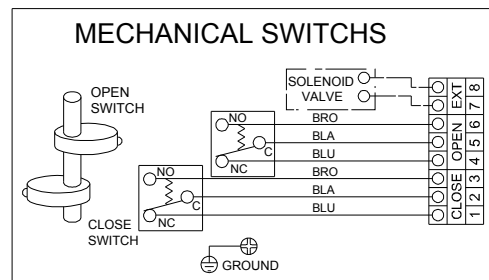
Strip no 1~6 are for wiring of mechanical switch contacts for position detecting and, 7, 8 are for power for solenoid valve when required.

Recommended thickness of wire is up to 15mm for signal,

By loosening screw in terminal by screw driver, and insert the wire inside of terminal strip and tight the screw again.

Please refer to right hand-side wiring.

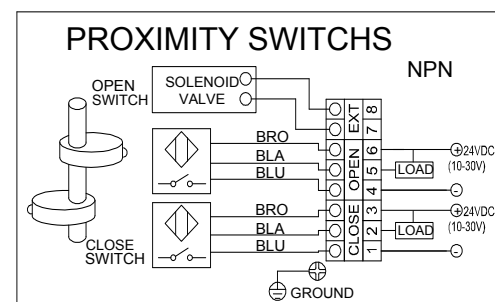
Caution: Make sure to use electricity within the rating of mechanical switch.



Wiring for proximity sensors

Wiring is just the same as that of mechanical switches, but since the operating type can be different depending on the sensor type, so must follow the provided wiring method.

(Right hand-side wiring is the sample of 3 wire type Proximity sensors)

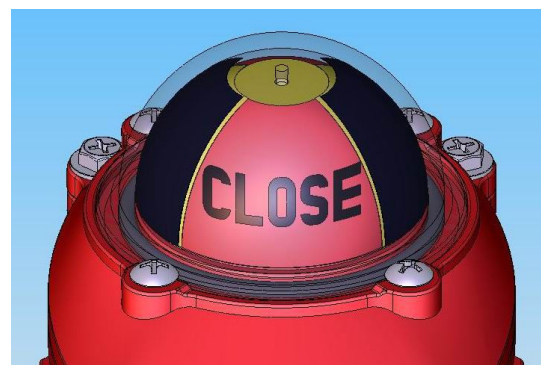


Indicator setting

By operating the actuator or valve, check if the indicator shows the correct position of the actuator or valve or not.

Generally, the indicator is set at 0° and 90° in the factory before delivery, but it would be better to set the indicator after installation of ITS on the actuator or valve before operating.

If the indicator is not well aligned, loosen 4 bolts on the cover, and adjust the position of the transparent cover by hand, and tighten the 4 bolts again (Refer to right hand-side picture)



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Setting cams and switches

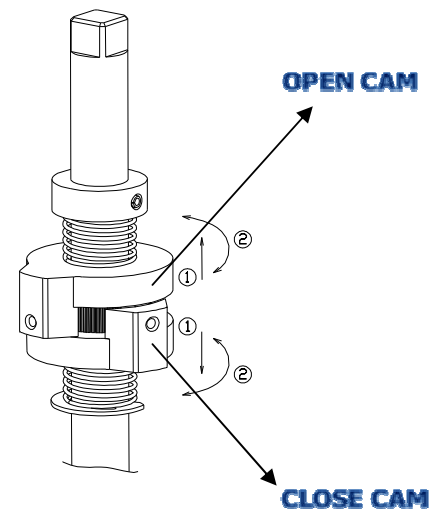
Setting switch and cam can be simply done by using resistance of Multi-meter, Buzzer, or lamps.

Taking off the upper cover from lower body and putting the valve or actuator on correct position, and adjust the cam by finger checking the resistance or lamp.

Locate the cam on the position which resistance is detected or lamp is on.

If to set another switches, repeat above procedure.

Before wiring, must cut off all power coming to the switch box.



Maintenance and repair

Regular operating of actuator or valve is required to check ITS makes function properly. make sure not to give any harmful action to other equipment or machine

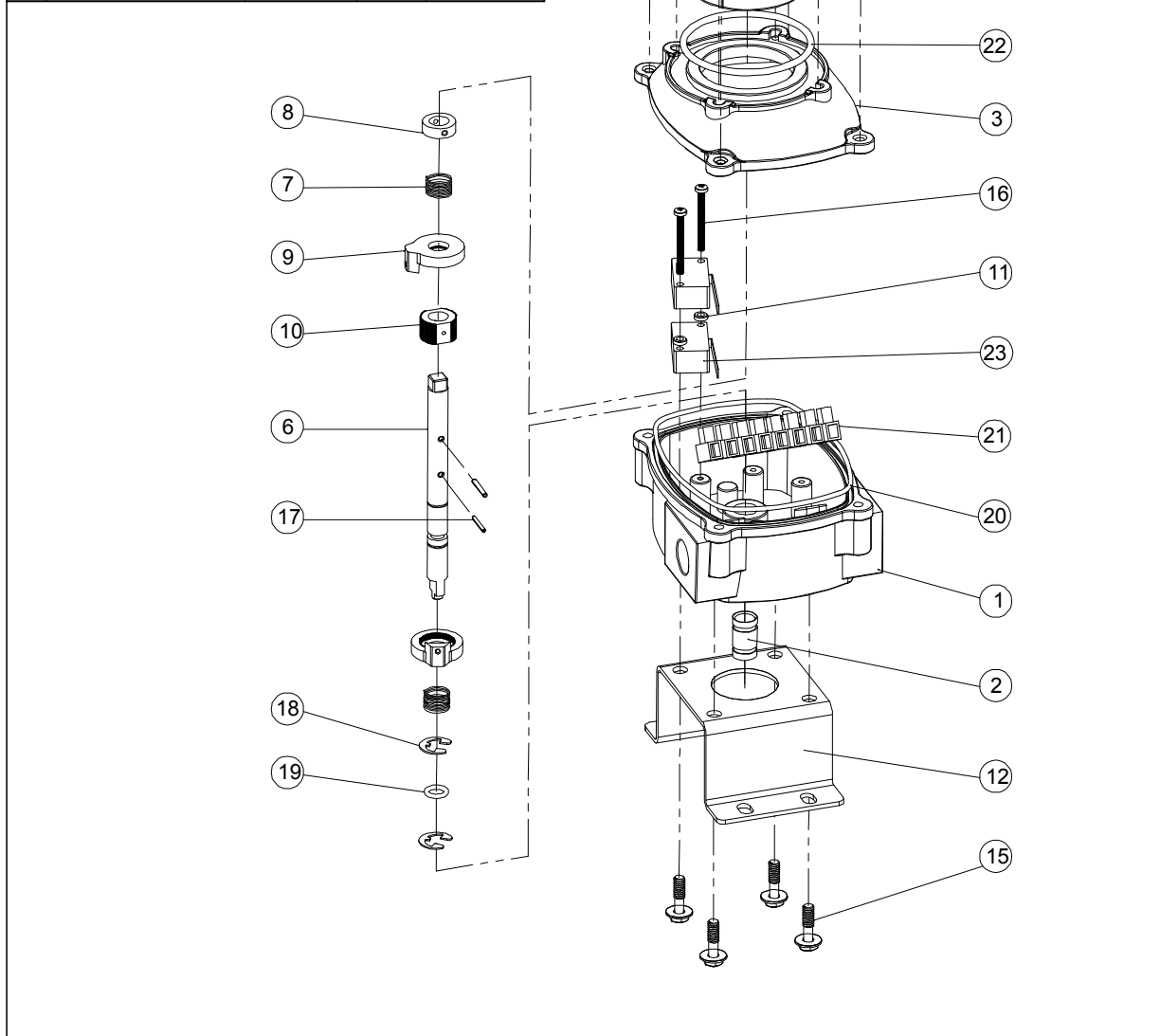
Checking proper work

1. Check power connecting line coming into ITS
2. Check if power rating (voltage, ampere or etc) is proper.
3. Check if Indicator shows correct position or not(refer to setting indicator.
4. Check Electrical position indication is correct or not.(refer to setting switch and cam)

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ITS 100 PART LIST

23	LIMITS SWITCH		2	SZM-V16 -2FA-61
22	O-RING		1	G55
21	TURMINAL BLOCK		1	LMTS102-2 05A12H6mm
20	O-RING		1	S95
19	O-RING		1	P06
18	E-RING		2	#8
17	SPRING PIN		2	?x14
16	BOLT		2	M3x30
15	BOLT		4	M6x8
14	BOLT		4	M4x5
13	CAPTIVE COVER BOLT		4	M5x20
12	BRACKET	SUS304	1	
11	SUPPORT	ABS	1	
10	CAM INNER	P.C.	1	
9	CAM OUTER	P.C.	2	
8	SPACE	ABS	1	
7	SPRING	SWP-A	2	
6	SHAFT	SUS304	1	
5	COVER INDICATOR	P.C.	1	
4	INDICATOR	ABS	1	
3	COVER	AL20	1	
2	BUSH	BC20	1	
1	BODY	AL20	1	
NO.	NAME OF PARTS	MATERIALS	QTY	REMARKS



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