**Introduction**

The 70 Series GO Switch with connection head assembly provides the reliability of the GO Switch for use in increased safety applications. The connection head assembly is available with an M20 or 1/2 NPT conduit entry and has laboratory terminal block ease of use and installation. GO Switches operate on the principle of magnetic attraction, reacting to ferrous metal or magnetic targets as they come within the switch's sensing range.

Although switches vary in design according to their intended applications, all GO Switches use permanent magnets which, when actuated by the presence of a ferrous or magnetic target, change the state of electrical contacts.

**Mounting**

- 70 Series GO Switches are unfastened by hand and do not require tools.
- 70 Series GO Switches may be mount- ed adjacent to or surrounded by ferrous metals however the proximity of ferrous metals will affect sensing distance. For the maximum rated sensing distance, avoid mounting near non-ferrous metals. The switch / terminal assembly is bolted together by the internal cement/potting. Any attempt to separate the parts (except the threaded cover) voids the warranty and certifica- tion.

**GO Switches sense ferrous materials such as mild steel, 400 series and 1744 stainless steel.**

**Sensing and differential of switch may vary depending on target travel direction.**

- Avoid contact between target and switch. Configure mounting of switch end or target so that target passes within the sensing area. Sensing distance will vary across model number and mass of target used.

**Target magnets, available through TopWorx, will increase the sensing range of the switch. Reference sensing ranges in corresponding sections throughout the catalog.**

For optimum performance, provide sufficient mass of target, and choose the appropriate GO Switch model to match the application requirements for operating frequency, type of load, etc.

- Greater target mass and target move- ment fully into and along the sensing range will increase contact pressure. This is helpful in low current control applications.

- For heavy or inductive loads, arc sup- pressors or interposing relays are recommended for contact longevity. Con- tact factory for specifications.

- Do not use excessive force on external threads when installing. (38 lbs. max)

- Configure mount so tracted dampers swelling a close to the middle of the body as possible. This eliminates uncontrolled stresses caused by heavy cables, connectors, etc.

**Specifications - DPDT**

- Sensing Distance: 0.090” (2.3mm) and sensing (2000 PSI)
- Differential: Approx. 0.020” (0.5mm)
- Repeatability: 0.030” (0.8mm) Under identical operating conditions
- Contact Material: Pallaform silver with Sawtooth surface Configuration
- Electrical Ratings: Resistive 3A @ 120VAC / 3A @ 24VDC
- Target Material: Ferrous metal; optional target magnets
- Enclosure Material: 316 Stainless Steel, 303 or 316 Stainless Steel Connection Head Conduit Outlet: 1/2” NPT or M20. One location.
- Dimensions: 1.125” Height, 0.900” Width, 1.375” Length
- Connection Head Terminal Wiring Diagrams

### SPDT Terminal Wiring Diagram

- Orientation A

### DPDT Terminal Wiring Diagram

- Orientation B

**Connectors**

- Connection Head Terminal Wiring Diagrams

**70 Series with Connection Head**

- All GO Switches are "purs" contact switches, meaning they have no voltage drop when closed, nor do they have any leakage current when open. For multi-unit installation, switches may be wired in series or parallel, as shown below.

**Series Wiring**

Any number of GO Switches may be wired in series, without voltage drop. By contrast, solid state switches have about two volts drop across the switch when operated. In a 12 volt solid state system with four switches in series, 6 volts is dropped across the switches. Only 4.5v is left to operate the load. When using GO Switches, 12v is still available to operate the load.

**Parallel Wiring**

When solid state switches are placed in parallel, 10", 12", 18", and 24" may occur through each switch. If all solid state switches were wired parallel, the total leakage current would be 1400micro-amps or one micro-amp per switch. While this may indicate an "OK" condition to a programmer, these control switches, including the GO Switches may be wired in parallel, with no current leakage and without drawing current outputting.
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70 Series with Connection Head

PCB-Terminal Block

Article description: FRONT 2,5-F/SA 6-EX *
EC-Type Examination Certificate: KEMA 04050305 U
IEC61010-033 U
IEC61010-031 U
Marking: 6 x 1
Assembly on: Printed circuit board
Stepping length: 9 mm
Torque: 0.4 - 0.5 Nm
Assembly instructions: See page 2
Operating temperature range: -50 °C...+110 °C

Technical data according to EN 60079-7:2007 / IEC 60079-7:2006 (increased safety „a“)

Rated insulation voltage:
- without spacer: 180 V
- with one spacer: 250 V
- with two spacers: 430 V
Rated voltage:
- without spacer: 176 V
- with one spacer: 276 V
- with two spacers: 440 V
Rated current: 22 A
Contact resistance: 0.6 mΩ

Connection capacity:
Max. conductor cross-section 2.5 mm² AWS 14
Connectable conductor cross-section area 0.2 - 2.5 mm² AWS 24 - 14

Multi-conductor connection (2 conductors of the same cross-section and conductor type):
rigid / flexible 0.2 - 0.75 mm² AWS 24 - 19

Insulation material:
Description: PA 6.6
Creep resistance acc. to IEC 60112 - material group CTI 600 / 1

Accessories:

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<td>D-FRONT 3.5 V</td>
<td>1700011</td>
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<tr>
<td>FZ 2,5-FRONT 2,5-H-EX</td>
<td>1700794</td>
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* may be followed by color designation

Important assembly instructions – increased safety „a“

The Printed Circuit Single Terminal Blocks are suitable for use in enclosures on printed circuit boards in atmospheres with flammable gases or combustible dust. For flammable gases these enclosures must safely the requirements according to EN 60079-10 and EN 60079-7.

The Printed Circuit Single Terminal Blocks may be used at ambient temperatures of -50 °C to +80 °C at the mounting position in electrical apparatus, e.g. junction and connection boxes, for temperature class T3. When the Terminal Blocks are used in electrical apparatus of temperature classes T1 up to T5, the highest temperatures of the insulating material shall not exceed the maximum value of the operating temperature range.

If smaller cross section as this rated cross section are used, the belonging lower current has to be laid down in the IEC Type Examination Certificate of the complete apparatus.

When assembling with other certified series and sizes of PCB-terminal blocks and using belonging accessories, the required creepage distances and clearances have to be observed.

Operational Instructions – Intrinsically safe “a”

EN 60079-14 Clause 12 describes modular terminal blocks as simple apparatus when used in intrinsically-safe circuits. Testing by a notified body and marking is not required. If terminal blocks be identifiable as part of an assen sically circuit am marked by a colour, the colour used shall be light blue.

Testing for compliance to intrinsically-safe requirements including creepage, clearance, and solid insulation distances specified in EN 60079-0 and EN 60079-11 have been performed on circuits up to 48 V.

Compliance with distance requirements of EN 60079-14 Clause 12.2.3 for the connection of separated intrinsically-safe circuit accessories is met. A minimum distance of 30 mm to separate clamping units of intrinsically-safe and non intrinsically-safe circuits is required through the use of a separating plate or similar device.