

# SAFETY SWITCH HEAD CONNECTION

## PRODUCT DESCRIPTION

Mechan Safety Switch heads are a special type of proximity switch, differing from standard types in two important areas:- a) They are fail safe; b) They can only be actuated by a Mechan target block.

Mechan Safety Switch Heads generate a Dynamic Analogue Output Signal which is inherently fail safe insofar as component failure, or damage to interconnecting cables, is concerned. Both "F" and "B" series heads are completely solid-state electronic devices, resin encapsulated into ABS shells, providing extremely high reliability and total sealing to IP67. They are tough, easy to fit, and contain no magnets, moving parts or contacts to stick or wear out.

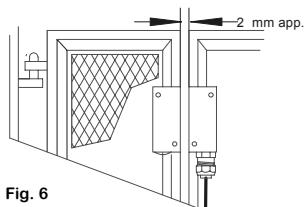


Fig. 6

## HEAD FIXING

The heads can be mounted on hinged, sliding or removable guards. Ensure the targets are aligned and there is approximately 2-3 mm between the sensitive faces when the guards are closed. This gives maximum lateral tolerance and freedom from nuisance tripping due to guard vibration.  
**Do not enlarge the fixing holes.**

## CABLE

Run the head cable back to the control unit, and connect into the terminal block as shown. The MPX8/DIN uses a common terminal for consecutive pairs of safety switch heads. (The drain for each head must be brought back to these terminals separately)

**Treat the head cables as instrument cables and keep separate from power cables, 150mm is usually sufficient.**

The head cable may be extended if required using a similar type of cable (Belden Type 8761) and runs of up to 100 metres will not significantly affect performance. Multi way versions of Individually screened and twisted pair cables are available for running several heads back to a control unit. Cable joints should be moisture proof and not earthed. The only earth connection should be via the green terminal at the control unit channel input block.

**FOR MORE INFORMATION SEE OUR 'INSTALLATION GUIDE FOR SAFETY SWITCH HEADS'**

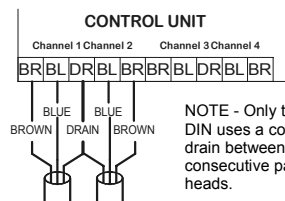


Fig. 7

< TO SAFETY SWITCH HEADS / GUARDS >

NOTE - Only the MPX8/DIN uses a common drain between consecutive pairs of heads.

# MPX8/DIN CONTROL UNIT SPECIFICATION

SWITCH CHANNEL SELECTION	5 to 8 CHANNEL OPERATION
SUPPLY VOLTAGES AVAILABLE	24, 48, 110, 240vAC / 24vDC
POWER CONSUMPTION	6VA
MAXIMUM SWITCHING CAPACITY	2A, 240vAC / 2A 30vDC RES.
PROTECTION	HOUSING - IP40 TERMINALS - IP20
DIMENSIONS	150 x 75 x 110 mm
MOUNTING	35MM DIN RAIL / 2 X 4 mm HOLES
OPERATING TEMP.	0 TO 45C
STORAGE TEMP.	-20 TO +50C
SYSTEM INDICATION	POWER ON LED GUARDS CLOSED LED FAULT LED
CHANNEL INDICATION	8 X VOLT FREE CONTACT. (125V 0.5A RES.) 8 X LED's

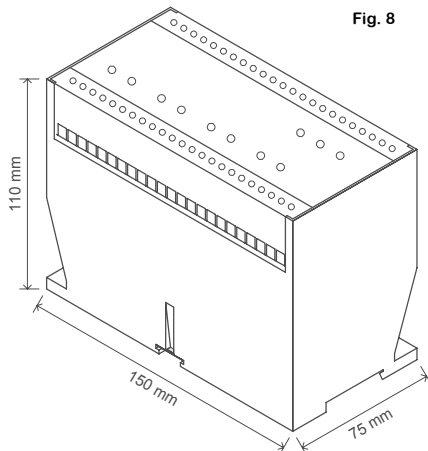
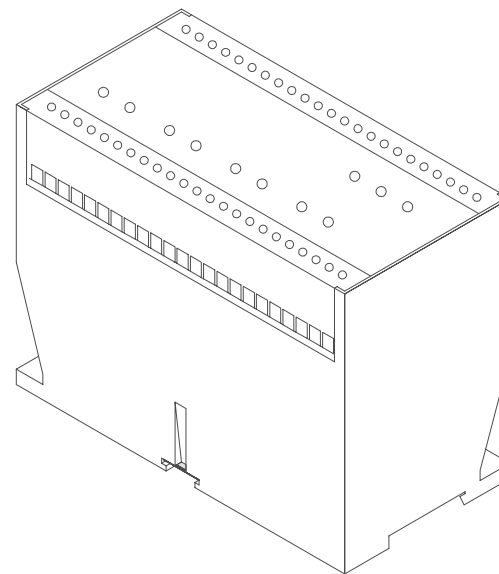


Fig. 8



# INSTALLATION GUIDELINES MPX8/DIN

**FOR  
SAFETY  
AND  
RELIABILITY**



**MECHAN CONTROLS LIMITED**  
14/16 Seddon Place  
Stanley Industrial Estate  
Skelmersdale  
Lancashire WN8 8EB  
England  
Telephone (44) 01695 722264

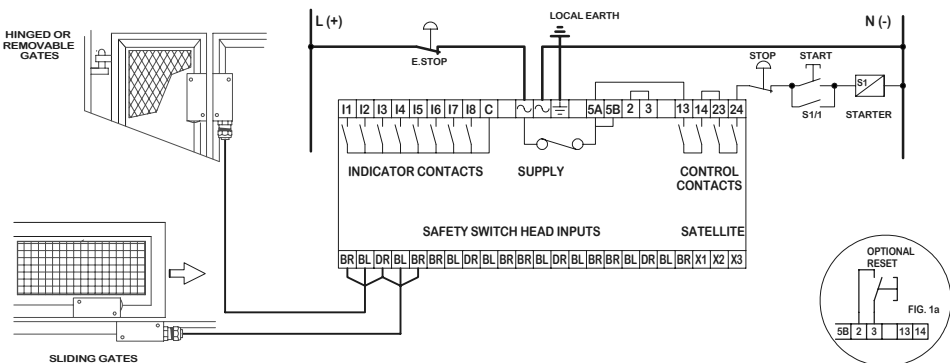
In the interest of product development, specifications are subject to change without notice.  
Document No. - 9606-M8D

It is the responsibility of the user to ensure compliance with any acts or by-laws in force.

All information regarding Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

# MPX8/DIN CONTROL UNIT STANDARD INSTALLATION CONFIGURATION

Fig. 1



## PRODUCT DESCRIPTION

The Mechan MPX8/DIN Control Unit takes signals from the unique Mechan Safety Switch heads and processes them using 'Dynamic Fail Safe Amplifiers'. The **Dual Output Relays** are driven directly by this dynamic signal resulting in a system which is inherently proof against total semiconductor failure. Each of the output relays has two contacts in series with the load. The **Proving Relay** is also powered from the Mechan signal provides monitoring of the output relays every time they operate. In the event of a faulty (welded) contact, or even a total relay failure, *full system safety is maintained* and a re-start is prevented. The "FAULT" LED indicates relay failure.

## CONTROL CONTACTS

The Control Relay Contacts are brought out to terminals, 13,14; and 23,24 and can be used with the fused (2A Max) live supply from terminals 5A or 5B (see fig 1), or as volt free contacts by removing the link between terminals 5A and 13. These contacts should be used in series as shown in fig. 1 for standard risk applications.

These contacts are monitored every time a guard is closed or an emergency stop button is reset.

## INDICATOR CONTACTS

When a guard is opened the indicator contact for that channel closes. These contacts are for *indication* purposes only.

## SAFETY SWITCH HEAD CONNECTION

See back page for installation information.

NOTE: The MPX8/DIN uses a common drain connection between consecutive pairs of heads. (i.e. Channel 1 & Channel 2)

## CHANNEL SELECTION

Set the MPX8/DIN to the required number of channels, see fig 2a for the correct switch settings.

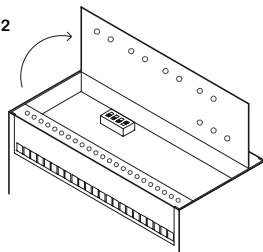


## WARNING

Disconnect from supply before removing lid.

Lift lid off with a screwdriver in the terminal recess to access the channel selection switch.

Fig. 2



Active Channels Required	Switch Settings
1 THROUGH 5	[Switch settings diagram]
1 THROUGH 6	[Switch settings diagram]
1 THROUGH 7	[Switch settings diagram]
1 THROUGH 8	[Switch settings diagram]
SATELLITE	[Switch settings diagram]

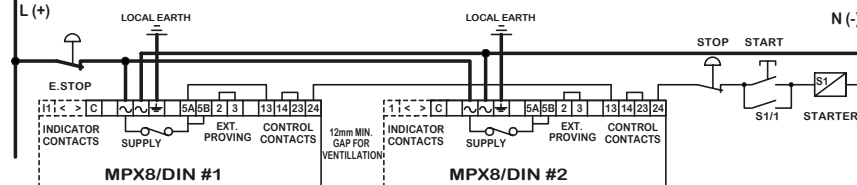
Fig. 2a

IMPORTANT The above switch settings should be strictly adhered to.

**NOTES -** The earth connection should be "clean" and local to the control unit. The on board arc suppression devices are only effective when the recommended circuits are used. Other configurations may require external suppression devices.

# MULTIPLE STANDARD SYSTEMS

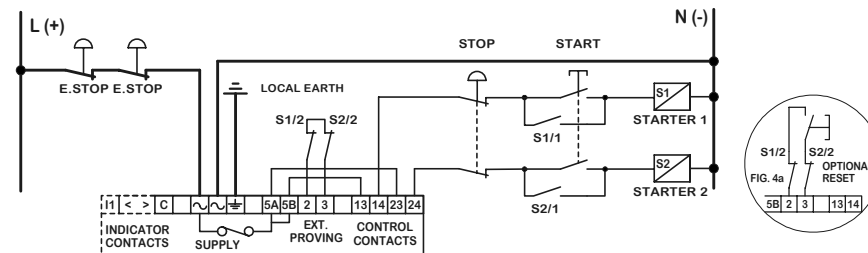
Fig. 3



MPX control units can be linked in series to make up the number of channels required. When using multiple systems and the fused live supply from terminal 5, only one link, on the first control unit, is required between terminal 5 and terminal 13.

# DUAL AND CROSS MONITORED SYSTEMS

Fig. 4

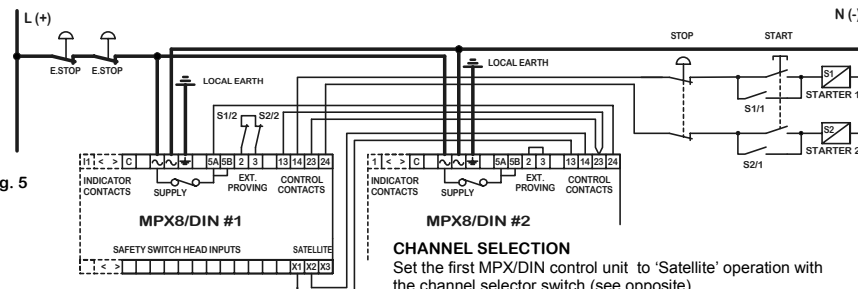


## EXTERNAL PROVING CIRCUIT

A normally closed contact on each starter / contactor should be linked in series with the Mechan proving circuit. (terminals 2 & 3) In the event of a starter / contactor welding, the next time the Mechan system is operated or an emergency stop button is pressed, the system will stop and a re-start is prevented by the Mechan proving circuit. The 'FAULT LED' will light on the control unit.

# MULTIPLE DUAL SYSTEMS

Fig. 5



## CHANNEL SELECTION

Set the first MPX8/DIN control unit to 'Satellite' operation with the channel selector switch (see opposite)  
Set the subsequent control unit(s) according to the number of channels required.

**IMPORTANT -** Mechan safety equipment should be installed by qualified personnel. All system functions should be tested after installation to ensure correct operation.