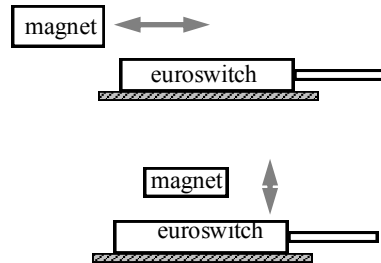


OPERATING PRINCIPALS MAGNETICALLY ACTUATED

Switch Actuation euroswitch is actuated by the introduction of a magnetic actuator into the sensing envelope of the proximity switch. The switch on, or the point at which the actuator causes the switch to operate, is given in mm and is often quoted as the Sensing range of the switch (sn). Once the switch has operated it will remain in that state until the actuator is withdrawn, the actuator will need to be withdrawn by a greater distance to enable the switch to reset to its unoperated state, the difference between the switch on and switch off points is known as the switch hysteresis.

The sensing ranges referred to for individual switches and magnetic actuators is given in ideal conditions, these distances can vary due to several outside influences. It is first of all recommended that care is taken to ensure that both the switch and the actuator are in line and that their magnetic centres are opposite each other, also that both the switch and actuator are mounted away from ferro magnetic materials which could reduce the sensing range of the switch. If it is not possible to keep away from ferro magnetic materials euro-switch offers a range of spacers in either Brass or 316 Stainless Steel to help reduce this effect.

Installation Rectangular types

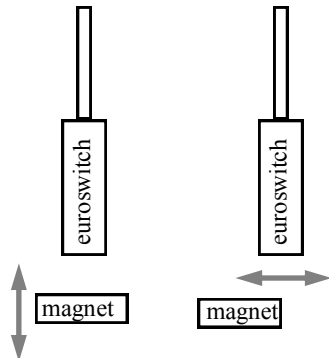


The actuator can approach the switch in two planes.

PARALLEL where the magnet slides across the face of the switch whilst keeping parallel to the switch until the point is reached where the switch operates, if the travel is maintained after the switch on point, a second switch on point will be reached. This sequence of events will repeat in reverse if the magnet is now reversed.

PERPENDICULAR where the magnet approaches the switch in a perpendicular direction with the magnetic centres in line with each other. This is the method of approach on which the sensing ranges of individual switches and magnets have been determined.

Installation Cylindrical types



The actuator can approach the switch in two planes.

PARALLEL where the magnet slides across the face of the switch whilst keeping parallel to the switch until the point is reached where the switch operates., when the magnet passes the Switch will reset to its off state.

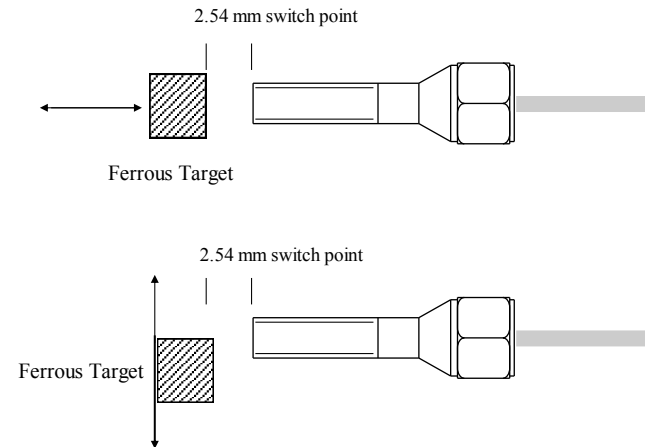
PERPENDICULAR where the magnet approaches the switch in a perpendicular direction with the magnetic centres in line with each other. This is the method of approach on which the sensing ranges of individual switches and magnets have been determined.

OPERATING PRINCIPALS FERRO ACTUATED

Ferro Sensors Change their output state when a piece of ferrous material such as Mild Steel or series 400 Stainless Steel is introduced into the sensing area of the switch (standard sensing range is 2.5mm) this sensing range can be increased by the use of an external magnetic actuator. The 2.5mm range may be affected by the close proximity of ferrous metals, avoid mounting close to ferrous materials. For maximum sensing range ensure sufficient target mass is introduced into the sensing envelope without touching the end of the sensor.

Hysteresis is the difference between switch on and switch off points, it is the distance the target must move away from the switch on point before the switch goes to the off state.

Series and parallel operation, any number of the FS series of switches may be wired either in series or in parallel without any current drain or voltage drop across their contacts.



Any number of Ferro series switches may be connected in series or parallel with out voltage drop across the switches



Exia

TESTING IN HAZARDOUS AREAS MUST BE CARRIED OUT TO SITE REGULATIONS

Longvale Ltd (sales@longvale.co.uk)

Longvale Ltd

Tel 01283 575811 Int +44 1283 575811

Fax 01283 575865 Int +44 1283 575865

e-mail:- sales@longvale.co.uk

EUROSWITCH / FERRO SWITCH ATEX / IECEX CERTIFIED

Exia IIC T*



II I GD

ATEX Certificate No Baseefa14ATEX0013X

IECEX Certificate No BAS 14.0003X

*T₆=T_{amb} -60°C to +80°C T₄= T_{amb} -60°C to +125°C

ATEX / IECEX certified Exia switches are manufactured to :-
IEC 60079-0:2011. IEC 60079-11:2011. IEC 60079-26:2007.

Standard Switch types :- (Add -D for DPDT types not ES-6, 2S or BZ)

ES-12XX. ES-22XX. ES-322X. ES-422X. ES-522X. ES-62XX. ES-442XX.
ES-2S22X. BZ-18. MS-VIP-I

Latching Switch types:-

ES-12XX-F, ES-442XX-F

Wireable Switch types:- (Add -D for DPDT types)

ES-322X-W. ES-422X-W. ES-522X-W. ES-322X-WL ES-422X-WL. ES-522X-WL.
For Rotatable head add R to -WL i.e. - WLR

Ferro Switch Types:-

FS-A22X. FS-B22X. FS-C22X. FS-D22X FS-E22X. FS-F2X

Wireable Ferro Switch Types:-

FS-A22X-W. FS-B22X-W. FS-C22X-W. FS-D22X-W. FS-E22X-W. FS-F22X-W.
FS-A22X-WL. FS-B22X-WL. FS-C22X-WL. FS-D22X-WL. FS-E22X-WL. FS-F22X-WL
For rotatable head add R to -WL i.e. - WLR

Non metallic Switches :-

ESI-M12PSR. ESI-M12PSR-K40. ESI-M12PCR. ESI-M12PCR-K40.
ESI-M18PSR. ESI-M18PSR-K40. ESI-M18PCR. ESI-M18PCR-K40. ESI-M18-DPDT
ESI-V3SR. ESI-V3CR. ESI-8201. ESI-8201-SR. ESI-8201-D. ESI-8203-D
MI-VIP-4

Safety Switch Type:- ESI-SS221.

SYSTEM REQUIREMENTS

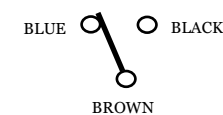
The electrical circuit in the hazardous area must be capable of withstanding an ac test voltage of 500v rms to earth or frame of the apparatus for one minute. The power source must be certified by an EEC approved body to Exia or Exib, whichever is applicable, with $U_i = 30V$. $I_i = 250mA$. $P_i = 1.3W$ (650mW for non metallic types). The capacitance and inductance, or inductance to resistance (L/R) ratio of the hazardous area cables must not exceed the value for the power source in use. For cable runs over 2M the following applies $C_c = 120pF/M$ and $L_c = 0.7\mu H/M$. Safe area apparatus is unspecified except that it must not be supplied from, nor contain under normal or abnormal conditions, a source of potential with respect to earth in excess of 250 volts rms or 250 volts dc.

EXIA01PUB

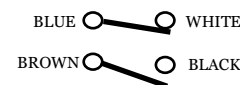
ELECTRICAL CONNECTIONS

Euroswitch cable type and connections all switches

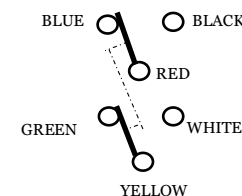
P.V.C 3 core cable



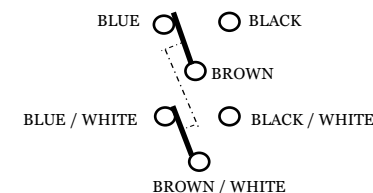
P.V.C 4 core cable -VIP



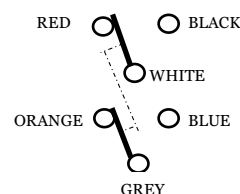
P.V.C. 6 core cable .D.P.D.T.



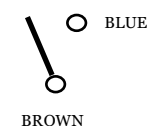
P.V.C. 6 leads D.P.D.T.



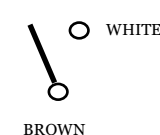
POLYRAD 6 core cable



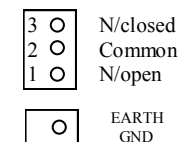
P.V.C 2 core cable



ES-2S P.V.C 2 core cable

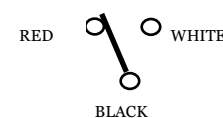


Wireable versions

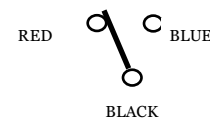


Ferro switch cable types and connections

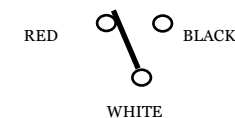
P.V.C 3 core cable



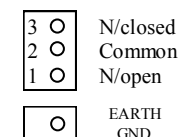
P.V.C 3 leads



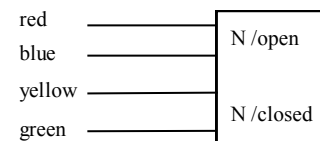
POLYRAD CABLE



Wireable versions



Category 4 Safety switch cable types and connections



Operating Temperatures and IP Ratings

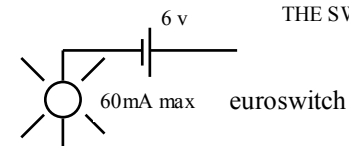
PVC cables and leads -20°C to +80°C

Polyrad cable -60°C to +125°C

Ingress protection IP66, IP67, IP68

Contact Material Rhodium

Testing



DO NOT USE A "MEGGER" OR BELL TEST SET USE A SIMPLE LAMP TESTER AS SHOWN OR AN OHM METER OTHERWISE DAMAGE TO THE SWITCH MAY OCCUR

Testing MUST be carried out to site regulations do NOT use above method in hazardous areas