INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS: VLS LIMIT SWITCH BOX - SWITCH TYPE 009 & 00D (ATEX VERSIONS)

SUITABLE FOR DIRECT MOUNT TO KINETROL ACTUATORS SIZE RANGE: 03 TO 15 & DISCRETE MOUNT OPTION.

1. Remove temporary threaded plugs.

2. Customer to supply and fit Ex e approved cable glands to maintain IP6X Environmental Protection. Unused conduit entries can be plugged using suitable IP6X Ex e approved plugs or ordered from Kinetrol with Ex e approved plug(s) already fitted. Ensure the cable glands and cable installed are designed to operate in the temperature range marked on the switch box.

3. Connect cable terminals as required. Ensure the switches are each connected to their own 28v or low energy barrier.

4. Materials of construction:
   - Main body & lid - Zinc or Aluminium alloy diecast epoxy painted. - Rubber seals - NBR. (Other mat'ls available on request) -
   - Shaft - Glass filled nylon 6.6./Zinc plated mild steel - Switch cables - PVC coated copper.
   - Switch body - Glass filled nylon 6.6. - Switch contacts - Fine silver gold plated.
   - Terminal strip - Gemin (KRG).

5. Operating conditions:
   - Minimum operating time: 20ms.
   - Maximum angle of travel: 110º
   - Vibrating conditions: 4G @ 100Hz
   - Ambient temperature range: -20ºC to +80ºC. User must take into account elevation in the local ambient temperature caused by the equipment the switch box is mounted to.
   - Ensure operating loads given opposite are not exceeded.

Note: In a Zone 0 potentially explosive atmosphere requiring EPL Ga apparatus, if aluminium body is specified, the switchbox shall be installed such that even in the event of rare incidents, an ignition source due to impact or friction with the body are excluded.

6. If direct mount units supplied separately this box must be kept sealed in its polythene bag during storage. The fixing screws and 'o' rings are provided. Only use replacement parts supplied by Kinetrol.
   Assemble as shown below.

7. Discrete mount units: Discrete mount units are designed to be bracket mounted to the actuator and are supplied with either a male Kinetrol square or a namur VDI/VDE interface shaft insert. Ensure mounting arrangement does not apply side or end load to the switch box shaft.

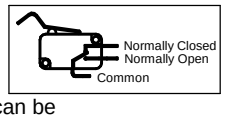
8. When mounting to 03 actuators mount kit SP/ASP1620 is required. When mounting to 05 actuators mount kit SP/ASP1621 is required.

9. Open/Closed label supplied loose - to be fitted by user in desired position.

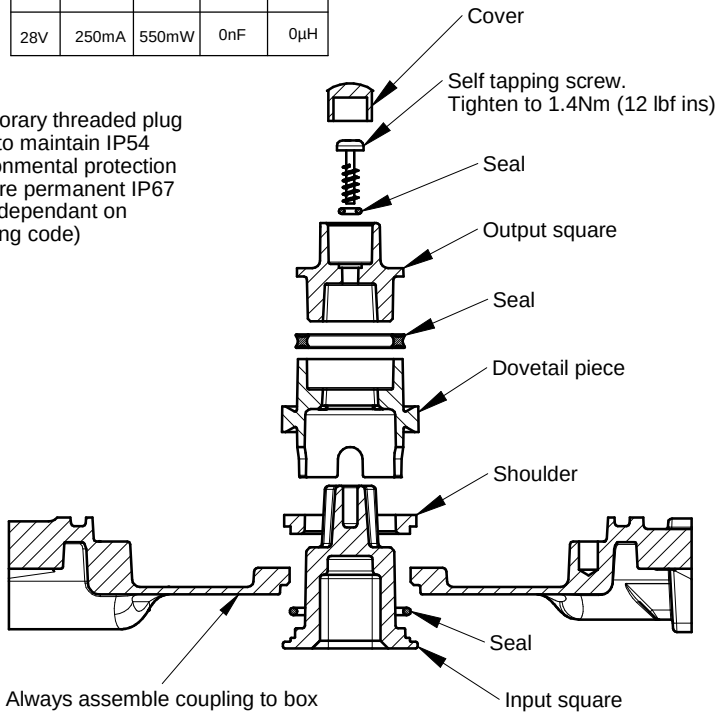
10. The cable must be a separate cable to each switch or a multicore cable which must be a Type 'A' or Type 'B' cable as defined in EN60079-25 subject to the following:
    a) The circuit from each barrier or power supply must be individually screened when used with Type 'A' multicore cable.
    b) The peak voltage of any circuit within a Type 'B' multicore cable must not exceed 60V.

SWITCH SPECIFICATION:

CROUZET V3D MINIATURE MICROSWITCH: 831618



Electrical supply circuit maximum values				
Ui	Ii	Pi	Ci	Li
28V	250mA	550mW	0nF	0µH



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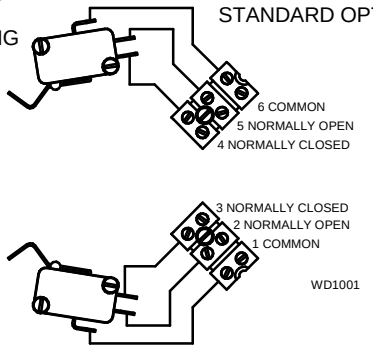
WIRING DIAGRAMS:

ENSURE EXTERNAL WIRING INSULATION LIES WITHIN THROAT OF TERMINAL

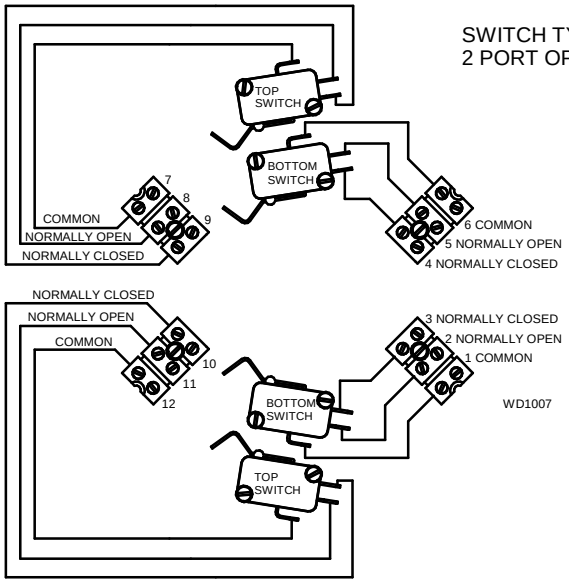
CABLE RANGE:

0.5mm^2 TO 2.5mm^2

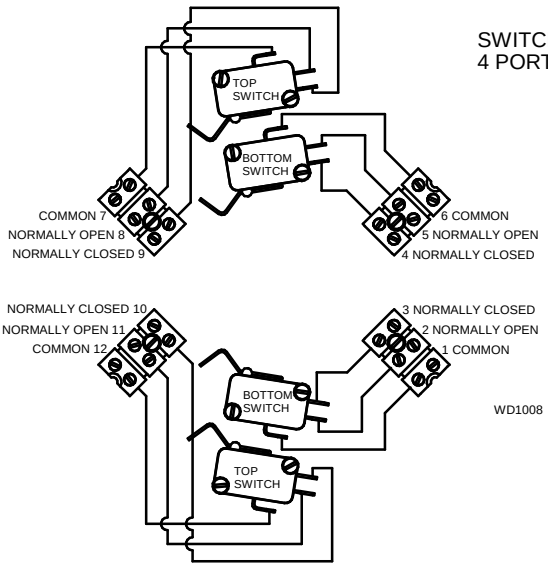
SWITCH TYPE 009
STANDARD OPTION

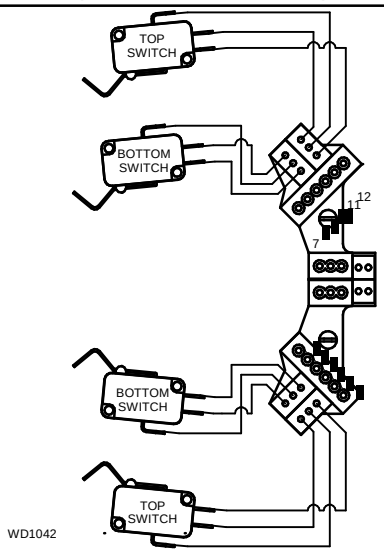


SWITCH TYPE 00D
2 PORT OPTION



SWITCH TYPE 00D
4 PORT OPTION



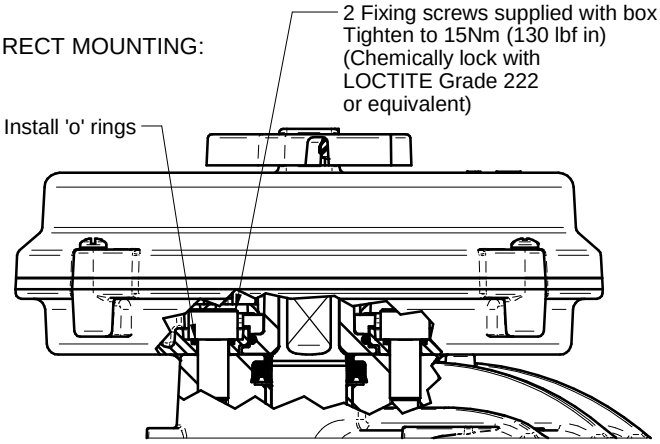


SWITCH TYPE 00D
MULTI-TERMINAL PCB
OPTION.

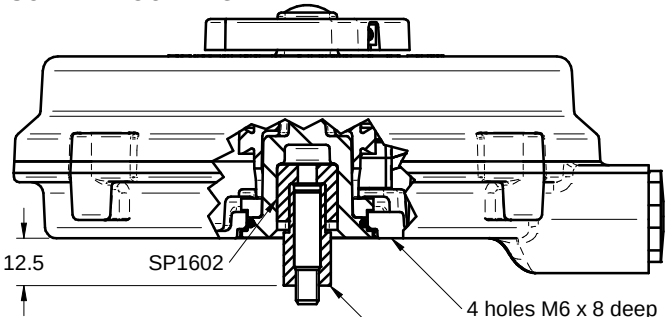
CONNECTIONS		
1	TOP SWITCH	C
2	TOP SWITCH	NC
3	TOP SWITCH	NO
4	BOTTOM SWITCH	NC
5	BOTTOM SWITCH	C
6	BOTTOM SWITCH	NO
7	BOTTOM SWITCH	NO
8	BOTTOM SWITCH	C
9	BOTTOM SWITCH	NC
10	TOP SWITCH	NO
11	TOP SWITCH	NC
12	TOP SWITCH	C

MOUNTING:

DIRECT MOUNTING:

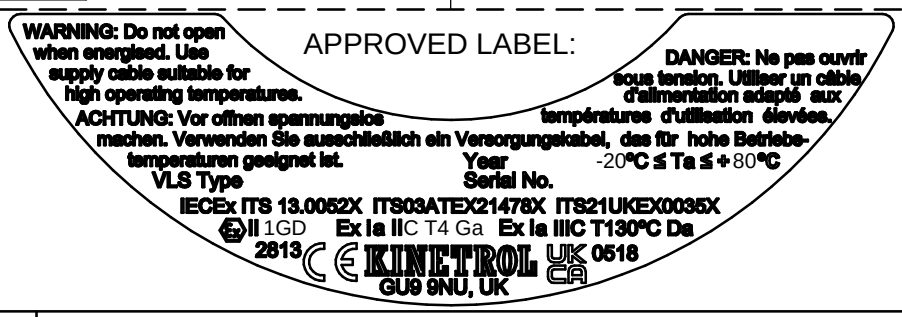


DISCRETE MOUNTING:



DISCRETE MOUNT BOX OPTION
SHOWN WITH KINETROL SQ. (SP1601)
IT CAN ALSO BE FITTED WITH
DISCRETE SHAFT TO VDI/VDE 3845 USING SP 1603

APPROVED LABEL:



TERMINAL BLOCK SPECIAL CONDITIONS OF USE:

1. Except when shown in a certificate as being internal wiring of apparatus, not more than one single or multiple strand lead shall be connected into either side of any terminal, unless multiple conductors have been joined in a suitable manner, e.g. two conductors into a single insulated crimped boot lace ferrule.

2. Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1mm of the metal of the terminal throat.

3 All terminal screws, used and unused, shall be tightened down to between 0.4 Nm and 0.45 Nm.

4 MK 3/2 and MK 3/3 terminals shall be mounted in such a way as to prevent any rotation of the terminal strip during tightening or loosening of the terminal screws. All other larger terminals shall be mounted using at least two of the fixing holes to prevent rotation.

5. Minimum creepage and clearance distances between the installed terminals and adjacent conductive, equipment, enclosure walls and covers shall be 5 mm, unless QB cross-connecting combs are used and are angled downwards, in which case these values are reduced to 3.2 mm in both cases.

6. When QB cross-connecting combs are used with the angled black insulatian inclined upwards, the maximum voltage rating af the terminal strips is unchanged, but when the comb is angled downwards the voltage rating is reduced to 175 V maximum - see 5 above.

7. Where the prong of an insulating comb is used In a terminal way, a further single conductor of 1.0 mm^2 minimum cross-sectional area may be connected to the same terminal way on top of the prong.

8. The inside edge of the insulation of the combs cross-connecting arm shall be in contact with the terminal moulding.

9. The terminals shall never be exposed to temperatures outside of the range -50°C to + 130°C; in addition, they shall anly be installed and wired with cable in an ambient temperature of -10°C to +80°C.

10. When these terminals are intended to be used in a potentially explosive dust atmosphere, they shall be installed in an enclosure that is suitably certified for use in this environment.

11. The QB cross-connecting combs are limited to the same current rating as the terminal and shall not be used with currents in excess of this value.