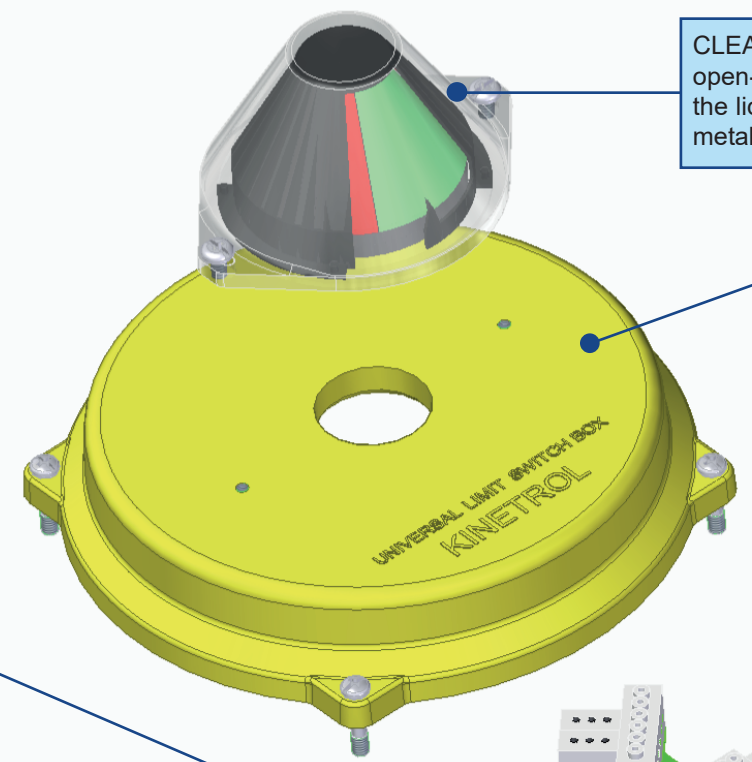


VLS/ULS Limit Switch Box

KEY FEATURES

Offers a wide range of signalling options in a fully enclosed corrosion resistant metal case available for direct mounting onto Kinetrol rotary actuators, or discrete mounting via an industry standard VDI/VDE interface onto any make of rotary actuator. Easy to wire and set up with industrial standard robustness. Internally fitted options include AS interface digital communication and a 4-20 mA 2-wire modulating angle retransmit circuit.

The range of switch and terminal arrangements includes 2 or 4 switches, extra connections allowing single point termination of wiring for limit switches and solenoid valves, ATEX approved Ex d (Category 2) explosion proof and Ex ia intrinsically safe packages (Category 1). Integral sealed Clear Cone Monitor and red / green LED indicator options also give high visibility external visual indication of position.



CLEAR CONE MONITOR – Externally visible position indication shows open-shut status and/or angular position viewed from any angle above the lid – made of robust transparent polymer fully sealed onto the metal lid. A special option for extra chemical resistance is available.

LID – Made of robust epoxy-coated zinc alloy, held on by four captive screws for quick access and sealed with O-ring.

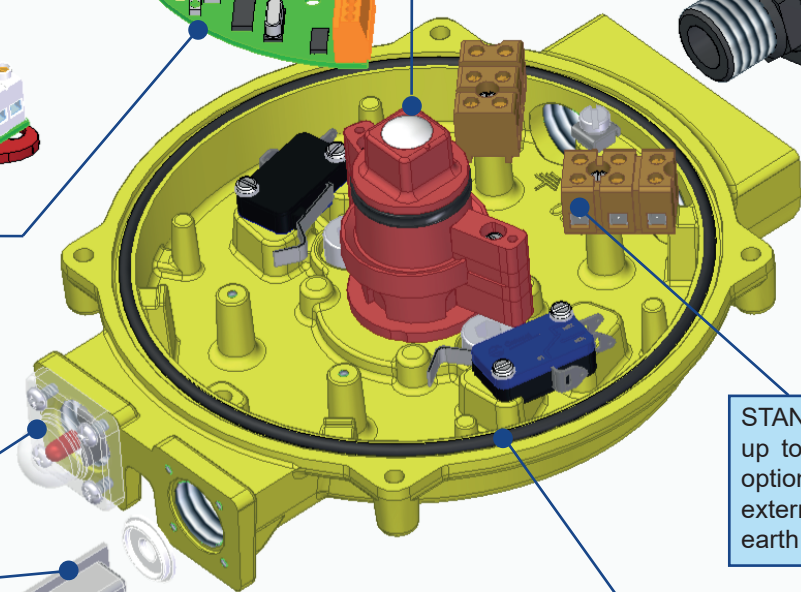
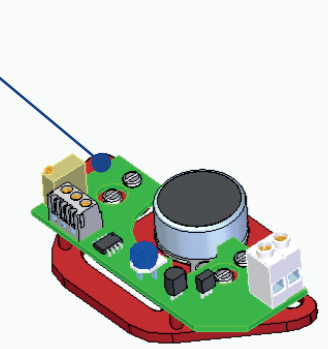
MULTI TERMINAL OPTION – PCB mounted option gives 4 x 3 way switch terminals, plus 3-way termination for external solenoid and 2-way termination for 4-20mA angle retransmit wiring, all immediately adjacent to conduit entries.

3 – TERMINAL DIN PLUG – Retrofittable option for limit switches solenoids, and/or angle retransmit signal allowing rapid connection of pre-wired installations with 4-direction adjustability.

COUPLING – Kinetrol VLS/ULS coupling utilises a female drive square to allow direct fitting to models 03 to 15 (models 03, 05, 12, 14 & 15 also require a mount adaptor). Kinetrol discrete options use a male drive square for models 16 to 30. VDI/VDE interface options with industry standard male drive are also available. Strikers directly clamp to the coupling and can be easily adjusted using a screwdriver. On the non-Atex VLS unit, strikers are compatible with both mechanical switches and inductive proximity sensor options. The angle retransmit option uses a special coupling with a gear form on its outer diameter, which engages with a sprung gear on the pot shaft to give a backlash free drive.

OPTIONAL ANGLE RETRANSMIT – Integrated assembly comprising circuit, feedback pot and drive gear fits inside standard box. Loop powered 2-wire circuit passes 4 – 20 mA current proportional to 0-90° position of actuator. Powered by 14 to 30v DC supply. High quality servo-pot with ball bearings plus anti-backlash spring gives long life and high precision. Circuit has zero and span adjustments for easy ranging.

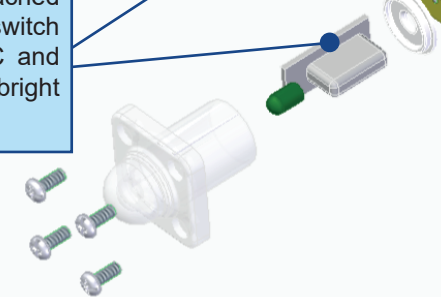
OPTIONAL AS INTERFACE CIRCUIT – Fits inside standard box to give control and monitoring by serial communication of up to 31 actuators (61 for certain applications). All power and communications for circuits and actuator solenoid valves can be carried via one 2-wire cable. See KF-496 for full details.



M12 PLUG OPTION – Allows easy external connection of AS interface bus via fixed M12 type 4-way socket in conduit entry.

STANDARD TERMINAL BLOCKS – 2off 3-way blocks accommodating up to a 2.5mm² cable fitted directly adjacent to conduit entries, plus optional third and fourth 3-way blocks for single point termination of external solenoid valve or extra limit switches. Internal and external earth connections are also provided.

LED INDICATORS – Bright red and green LED inserts can be attached via four M3 screws to the standard conduit entries on the limit switch box, sealed on by integral O-rings. 110-240 v AC, 12-24 v DC and AS Interface compatible options are available, to give clear bright external signalling of actuator position.



ENCLOSURE – Made of robust epoxy-coated zinc alloy, with O-ring sealing. Low level joint line gives best access to connectors and adjustments. 2 or 4 conduit entry options are available, to cover all requirements with least weight and maximum simplicity.

- Units sealed to IP67 / NEMA 6
- Atex units IP66 / Nema 4X, IP67 option available.
- Robust corrosion resistant epoxy painted diecast zinc alloy box.
- Easy and accurate setting of switch position.
- Available for direct mounting to Kinetrol models 03 to 15, for minimum height.
- Quick access
- No special tools required.
- Discrete VDI/VDU (NAMUR) interface option for use with industry standard actuators.
- Two or four cable entries as standard to allow back wiring of solenoid valves.
- Many switch options available for general and hazardous areas.
- AS interface bus circuit option inside box reads up to 4 switch inputs, drives up to 2 solenoids powered by bus only. (see KF 496).
- Optional clear cone monitor available.
- Integral LED indicator lamps and angle retransmit circuit options are available.

SPECIFICATION

CASING - Precision diecast zinc alloy.
FINISH - Epoxy stove enamel.
SEALS - Nitrile rubber 'O' ring seals.
WEIGHT -
VLS - 0.68Kg
ULS Switch Options
001 & 009 - 1.05Kg
003 - 1.40Kg
CABLE ENTRY OPTIONS -
M20 x 1.5 Conduit thread
1/2" 14 NPS Conduit Thread
4 Way plug DIN 43650A (fits either conduit thread)
4 Way M12 Connector (M20 Conduit only)

TEMPERATURE RANGE -

SWITCH OPTION	AMBIENT TEMPERATURE RANGE
004, 007	-40°C to +80°C
001, 006, 008, 009	-20°C to +80°C
00E, 00N	-25°C to +80°C
005	-25°C to +70°C
003	-20°C to +70°C
002	-15°C to +60°C

LOAD RATINGS FOR STANDARD MICROSWITCHES MULTIPLICATION FACTORS

VOLTAGE	RESISTIVE LOAD
125 V ac	15 A
250 V ac	15 A
up to 12 V dc	15 A
up to 24 V dc	10 A
up to 48 V dc	3 A
up to 250 V dc	0.25 A

FOR NON-RESISTIVE LOADS

Steady state tungsten lamp load - x 0.1
Steady state inductive load - x 0.2
Peak Inductive load - x 1.0

For Atex ratings refer to TD139

DIMENSIONS



SWITCH TYPE



The policy of Kinetrol is one of continuous improvement. We reserve the right to alter the product as described and illustrated without notice. For confirmation of the current specification, contact Kinetrol Limited.

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