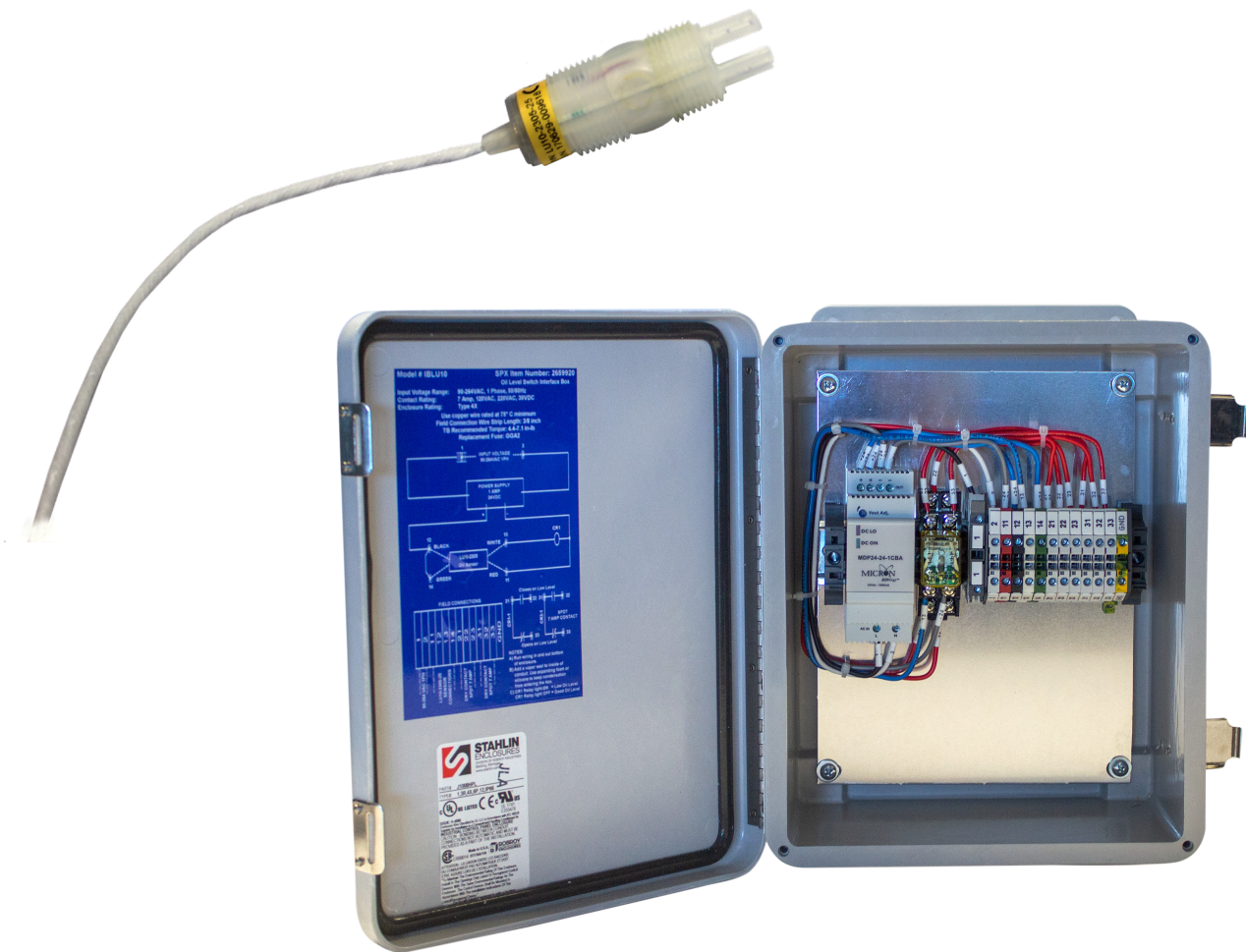


# OLS+u

ULTRASONIC OIL LEVEL SWITCH CONTROLS

engineering data  
and specifications



MARLEY®

## OLS+u ULTRASONIC OIL LEVEL CONTROLS

The Marley OLS ultrasonic switch controls package is used to monitor and alarm a low oil level condition in the cooling tower gearbox via an oil immersed set of probes using ultrasonic sound wave technology. The OLS+u is a set point switch changing a relay state upon a low oil level condition.

The switch is factory mounted in the oil level piping, its height in relation to the gearbox is set at the factory so field calibration is not required. A sliding bracket, provided for height adjustments, allows the tower installer to make final adjustments if required.

## SEQUENCE OF OPERATION

AC utility power applied to the AC to DC interface box provides DC power to the oil level sensing switch. 2 Form C relay contacts are provided in the interface box that change state if the oil in the gearbox drops to a low condition. The relay contacts complete the customers alarm circuit back to the BMS, warning the operator of a low oil level condition. Typically, this operational sequence is not used to shut off the tower but to provide notification to the tower operator.

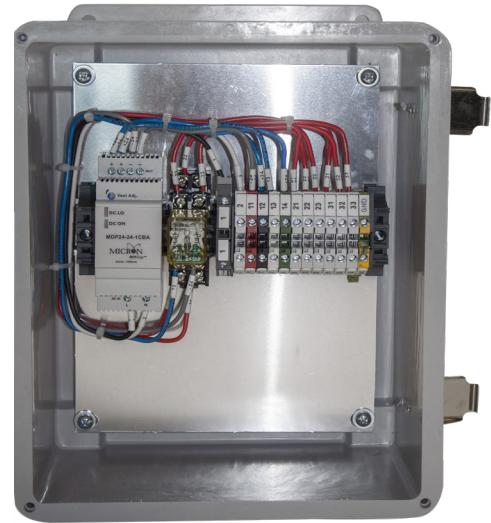
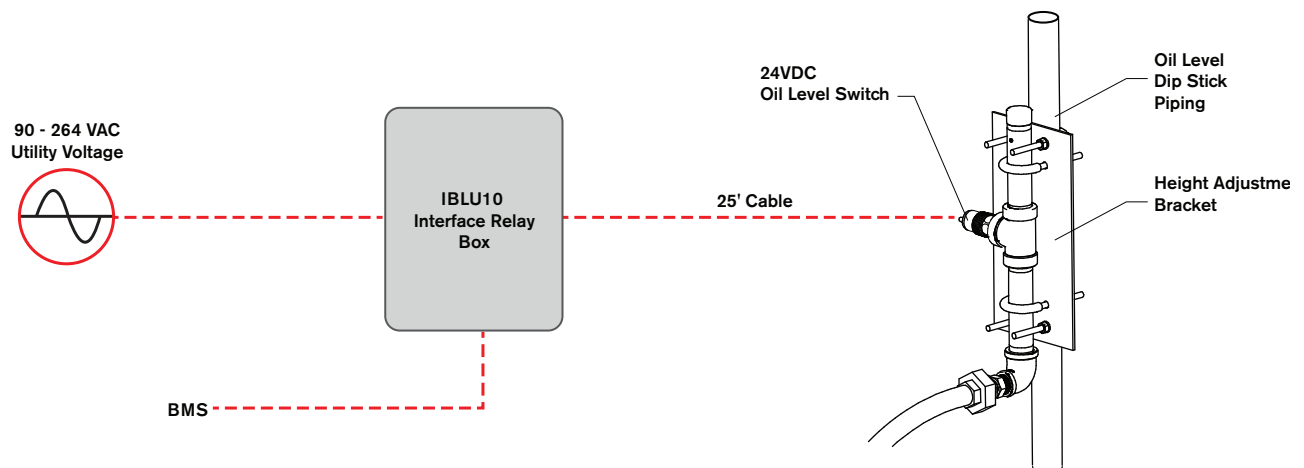
Once oil level returns to a normal level, relay contacts revert to a normal non-alarm condition.

During startup and commissioning, the relay inside the interface box has an integrated pilot light that activates when oil level is low.

## OLS+u CONTROLS PACKAGE

- Factory installed oil piping with height adjustment bracket.
- Factory installed ultrasonic oil level DC switch with 25' cable (50' available for large cooling towers).
- NEMA 4X fiberglass AC to DC interface relay box field mounted outside of the cooling tower.

## SYSTEM DIAGRAM



## IBLU10 INTERFACE BOX

- NEMA 4X fiberglass enclosure 10"H x 8"W x 5"D
- Swing and latch door
- 2 Form C 7 Amp Relay output contacts
- User terminal strip

Requires 7 amp 90-264 VAC single phase 60/50 cycle supply source.

The assembly is built to the following industrial control panel standards: UL 508A CUL 508A NFPA 70 (NEC)

Note: Not rated for hazardous location applications.

Note:

- 1 All wiring entering and exiting the interface box should be located at the bottom of the enclosure.
- 2 Prevent condensation from forming inside the interface box enclosure. Seal the inside of the conduit at the enclosure forming a vapor barrier. A vapor barrier may be created in the field using expanding foam or silicone injected in to the conduit after wiring connections have been made.



### OLS ULTRASONIC SWITCH – FLOWLINE® LU10 2305

- Contact type switch
- 25'-0 cable integrated into the switch and flying leads on opposite end (50' lead available for larger cooling towers)
- Fitting for mounting switch to oil piping
- Classification: Intrinsically safe
- Certificate: CSA, LR 79236
- Compliance: CE
- Approvals: Class I, Groups A, B, C and D; Class II, Group E, F and G; Class III
- Parameters:  $V_{max} = 32V$ ,  $I_{max} = 300mA$ ,  $P_{max} = 1.3W$ ,  $C_i = 0\mu F$ ,  $L_i = \mu H$

Note: A special controller is required for hazardous locations.

### FREQUENTLY ASKED QUESTIONS

#### Interface Box Enclosure

- Q** Where is a typical mounting location?
- A** Anywhere near the tower is fine limited by the length of the lead for the oil switch. The enclosure is suitable for outdoor installation. Always route the conduit into the bottom of the enclosure and provide a drip line. The conduits entering the control panel should be sealed preventing vapor and condensation from entering the enclosure.
- Q** Why does the enclosure have latches?
- A** The latches secure the lid to the gasket providing a water tight seal.
- Q** Are knock outs provided?
- A** No.

#### Ultrasonic Switch

- Q** Is the switch furnished with wire?
- A** Yes – 25' is standard. 50' lead is available for larger cooling towers.
- Q** Can switch leads be extended?
- A** Yes – use #18 gauge 4 wire stranded copper conductor plus a shield from junction box.
- Q** Can leads be cut to length?
- A** Yes – but suggest keeping extra length coiled for easy removal.
- Q** Are switch leads replaceable?
- A** No – the lead attaches to the ultrasonic switch as an integrated molded connection.
- Q** Does the switch require maintenance?
- A** No.
- Q** Does the switch lead need to be in conduit?
- A** The wire is rated for outdoor use (check local codes).
- Q** Is the controller solid state?
- A** Yes.
- Q** Is the controller factory calibrated for height?
- A** Yes – The switch can also be field adjusted.
- Q** Should the switch be used to shut off the VFD or starter?
- A** No – The switch should be used to complete an alarm system for the cooling tower operator not as a shut-down circuit.

#### Wiring

- Q** How is the ultrasonic switch wired back to the interface box?
- A** The switch cable is rated for outdoor use. Follow local codes to determine if cable should be placed in conduit.

#### Integration

- Q** Can the OLS+u be connected to a BMS system?
- A** Yes – via dry relay contacts.

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