

EMS-TL-SL

Liquid level instrument, point switch and analogue reservoir channel

Optical reflective-prism point switch and hydrostatic analogue level for reservoir, condensate and leakage duty

EMS-TL-SL covers liquid level, which in a production loop is three separate jobs on three separate channels: reservoir level, condensate level and leakage level. It uses an optical reflective-prism point switch, or hydrostatic pressure where an analogue reservoir reading is needed, with a point switch relay or digital input for the point types and 4–20 mA or Modbus for the analogue types. The failure it exists to catch is a slow leak that a level switch cannot see, which is why make-up activity longer than 5 seconds after commissioning raises alarm A30, Check fluid Make up Level.

ORDERING INFORMATION

Part number	EMS-TL-SL
Point principle	Optical reflective-prism point switch
Analogue principle	Hydrostatic pressure, or float for condensate duty
Sensing-cable temperature rating	0–75 °C
Point output	Relay or digital input
Analogue output	4–20 mA or Modbus
Analogue accuracy	Not published; quoted on request
Wetted material	316L stainless steel

PRINCIPLES AND DUTIES

Parameter	Value	Notes
Point principle	Optical reflective-prism point switch	Refractive index changes when liquid covers the prism face
Analogue principle	Hydrostatic pressure, with float switches for condensate duty	Reservoir level is the analogue job; condensate and leakage are point jobs
Reservoir level duty	Expansion tank or CDU reservoir, analogue	Hydrostatic or ultrasonic build, on its own channel
Condensate level duty	Float switch, on its own channel	A production controller keeps condensate level separate from leakage level
Leakage level duty	Tray or sump point sensor, optical reflective prism	Point detection at the tray, paired with a rope channel for location
Channel separation	Reservoir, condensate and leakage level on three separate channels	One level channel asked to do three jobs is the documented misapplication
Sensing-cable temperature rating	0–75 °C	Published rating for the sensing cable of this product class

OUTPUTS AND ACCURACY

Parameter	Value	Notes
Point output	Relay or digital input	For optical and float types
Analogue output	4–20 mA or Modbus	For hydrostatic pressure and ultrasonic types

Parameter	Value	Notes
Analogue level accuracy	Not published in the retrieved material	Quoted on request against the supplier data sheet. No figure is estimated or published here
Switch repeatability	Not published in the retrieved material	Quoted on request against the supplier data sheet
Response time	Not published in the retrieved material	Quoted on request against the supplier data sheet

MAKE-UP MONITORING AND FALSE POSITIVES

Parameter	Value	Notes
Make-up alarm	Fill-pump activity longer than 5 s after commissioning raises alarm A30, Check fluid Make up Level	The level channel gives a slow leak a second opinion
Alarm logic	Two-of-two for automatic intervention	A tray point sensor and a rope on the manifold: either detects and alarms, both together permit intervention
Condensation false positive	Hold supply water at least 2 °C (3.6 °F) above room dew point	ASHRAE guidance; condensation on a cold surface is a known false-positive source
Threshold discipline	Thresholds set too low produce a high number of false alarms	Operators then ignore the alarm until it is real, which is the failure the two-of-two rule exists to prevent

MATERIALS AND INSTALLATION

Parameter	Value	Notes
Wetted materials	316L stainless steel, peroxide-cured EPDM	Brass only where dezincification resistance is verified to ISO 6509 at ≤100 µm depth
Sulfur-cured EPDM	Discouraged against peroxide-cured EPDM	Sulfur cure can introduce sulfate into the fluid against a technology-cooling limit of <10 ppm
Mounting	Reservoir, tray, sump or expansion tank, per duty	Each duty has its own tapping and its own channel
Loop type this instrument serves	Both loop types	Conductivity 50–300 µS/cm on a glycol-premix loop and 0.2–20 µS/cm on a de-ionised loop; the level instrument is unaffected by either band

APPLICATIONS

- Reservoir and expansion-tank level, analogue, on its own channel
- Condensate pan level with a float switch, separate from leak detection
- Tray and sump leakage level with an optical point switch
- Make-up water accounting through fill-pump activity after commissioning

COMPATIBLE WITH

- EMS-TL-K100, EMS-TL-K300, EMS-TL-K800 and EMS-TL-K2300 kits
- EMS-TL-SK leak channel input module, for the two-of-two alarm arrangement
- EMS-TL-G10, EMS-TL-G25 and EMS-TL-G50 gateways
- EMS-LD- rope and probe codes at the tray and the manifold

SCOPE

- Level instrument only: coolant distribution units and cold plates are outside this scope

LEVEL DUTIES AND PRINCIPLES

Parameter	Value	Notes
Reservoir level	Analogue: hydrostatic pressure or ultrasonic	Own channel; the analogue accuracy is quoted on request
Condensate level	Point: float switch	Own channel, deliberately separate from leakage
Leakage level	Point: optical reflective prism	Tray or sump; pairs with a rope channel under the two-of-two rule

NOTES

- Analogue level accuracy is not published and no figure is stated on this datasheet; it is quoted on request against the supplier data sheet.
- Reservoir, condensate and leakage level are three separate jobs and are kept on three separate channels.
- The sensing-cable temperature rating is 0–75 °C. No IP rating is published for the sensing cable or for the standard controller in this product class.
- Condensation is a known false-positive source: hold supply water at least 2 °C (3.6 °F) above room dew point.
- Certification names are published on the badge cards; approval documents are shown on request.
- Scope: no coolant distribution units and no cold plates.

Full specification sheet and current pricing

EMS-Trade Cooling · ems-cool.com

Typical lead time confirmed on order acknowledgement.

EMS-TL-SL

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