EMS-TL-K2300

Loop telemetry kit, room 2.3 MW class

Matched pair, two flow runs, two differential-pressure ranges, level and four leak channels for a room-scale loop

At room scale the supply-to-return difference is still the small, fragile number, so K2300 carries the same matched, calibrated pair on one record rather than two separately tolerated sensors, because ±1 °F each puts almost 50 % uncertainty on a 5–10 °F difference. It covers up to the 340 GPM (≈1 300 L/min) secondary-flow class with two flow runs, both the 0–100 kPa and 0–400 kPa differential-pressure ranges, point and analogue level channels, and four leak channels. The failure it exists to catch is a room-scale loop where two flow paths are measured as one and neither the balance nor the leak is visible.

ORDERING INFORMATION

Part number	**EMS-TL-K2300**
Loop class	**Room, 2.3 MW class**
Loop flow covered	**Up to the 340 GPM secondary class (≈1 300 L/min)**
Flow runs	**2**
Leak channels	**4**
Differential-pressure ranges	**0–100 kPa filter duty and 0–400 kPa loop duty**
Temperature range	**–40 to +150 °C**
Gateway	**Ordered separately: EMS-TL-G10, EMS-TL-G25 or EMS-TL-G50**

KIT IDENTIFICATION AND LOOP SIZING

Parameter	Value	Notes
Kit part number	**EMS-TL-K2300**	One part number; every channel below ships as one delivered set
Loop class	**Room, 2.3 MW class**	Largest class on the kit ladder
Loop flow range to be covered	**Up to the 340 GPM secondary class (≈1 300 L/min)**	Two flow runs share the loop's flow rather than one oversized run
Kit boundary	**Instruments and consumables for the loop**	No coolant distribution units and no cold plates
Gateway	**Not included on this code**	Add EMS-TL-G10, G25 or G50 where the loop has no BMS point list of its own

TEMPERATURE CHANNEL (MATCHED PAIR)

Parameter	Value	Notes
Temperature channel	**Matched supply-and-return pair, thin-film PT100**	Both elements calibrated together on one record and shipped as one pair
Temperature accuracy	**IEC 60751 Class A element tolerance, class name only**	The class tolerance in degrees is not published: the research did not verify it from a retrieved primary document
Differential-temperature uncertainty	**Two unmatched ±1 °F sensors put almost 50 % uncertainty on a 5–10 °F difference**	Pairing is the specification; tolerances otherwise add
Temperature measuring range	**–40 to +150 °C**	Industrial envelope of the element

Parameter	Value	Notes
Channel naming	**Supply and return as two separate channels**	Matches production CDU channel practice
Replacement rule	**Order the pair, not one sensor**	One replacement sensor breaks the pairing

FLOW CHANNELS

Parameter	Value	Notes
Flow channels	**2 electromagnetic flow runs, drawn from the DN10–DN1000 family**	Two runs let the balance between parallel paths be measured; DN25 is the kit default
Flow range at DN25	**0.5–18 m³/h (≈8–300 L/min), turndown ≈36:1**	The 340 GPM class needs runs larger than DN25; line sizes are quoted on request against the loop's flow
Flow accuracy	**±0.5 % of reading standard; ±0.2 % of reading special**	Percent of reading, not percent of full scale. Specified over 20–100 % of flow at 10 m/s
Minimum fluid conductivity	**5 µS/cm**	Below the floor the meter reads near zero without raising a fault; use EMS-TL-SFU on a de-ionised loop
Velocity band	**0.3–10 m/s; low-flow cut-off about 0.1 m/s**	Optimal accuracy near 2–4 m/s
Straight-run requirement	**5× DN upstream and 3× DN downstream per run**	Omitting the runs adds about 1.5 % of reading
Flow accuracy basis	**ISO 20456:2020-03**	Reference basis stated by the meter documentation

DIFFERENTIAL PRESSURE, LEVEL AND LEAK CHANNELS

Parameter	Value	Notes
Differential-pressure channels	**0–100 kPa filter duty and 0–400 kPa loop duty**	Filter health and loop pressure drop move on different scales
Differential-pressure accuracy	**±0.075 % FS standard; ±0.05 % FS high accuracy**	Percent of full scale, not percent of reading
Differential-pressure stability	**±0.1 % of maximum range per 12 months**	Transmitter drift only
Level channels	**Optical reflective-prism point switch plus analogue reservoir level**	Reservoir, condensate and leakage level stay on separate channels
Analogue level accuracy	**Not published in the retrieved material**	Quoted on request against the supplier data sheet
Leak channels	**4 channels**	2-wire rope detects; 4-wire rope detects and locates; one rope is rated only to 35 % propylene glycol by weight
Alarm logic	**Two-of-two for automatic intervention**	Either sensor alone alarms; both together permit intervention

MATERIALS, SUPPLY AND ENVIRONMENT

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 The 100 µm figure is a dezincification penetration depth under ISO 6509: it is not a protection rating, a commissioning staging step or an inlet strainer rating.
Supply	**24 VAC/DC at the gateway; 10–36 V DC or 90–260 V AC at each flow transmitter**	Two flow transmitters and one gateway are separate devices with separate supplies
Gateway operating envelope	**–20 to 60 °C, 5–95 % RH non-condensing**	Applies to the EMS-TL-G enclosure; no enclosure IP rating is published for it
Gateway point count	**Up to 50 points across up to 3 devices**	A kit of this size is sized from the point list; see the EMS-TL-G ladder

APPLICATIONS

- Room-scale loops where parallel flow paths must be balanced and measured
- Filter health on the 0–100 kPa range and loop pressure-drop control on the 0–400 kPa range
- Leak supervision across four zones, each on its own channel
- Loops that need a recorded ΔT, flow and DP baseline before first load

CHANNELS DELIVERED

- Temperature: matched supply-and-return PT100 pair on one calibration record
- Flow: two electromagnetic runs, DN25 default range 0.5–18 m³/h per run
- Differential pressure: 0–100 kPa and 0–400 kPa ranges, ±0.075 % FS standard
- Level: optical point switch plus analogue reservoir level
- Leak: four channels, 4-wire rope detects and locates

COMPATIBLE WITH

- EMS-TL-ST and EMS-TL-STC temperature pairs
- EMS-TL-SF and EMS-TL-SFU flow instruments
- EMS-TL-SDP differential-pressure transmitter
- EMS-TL-SL level devices and EMS-TL-SK leak channel input module
- EMS-TL-G10, EMS-TL-G25 and EMS-TL-G50 gateways

SCOPE

- Instrumentation for the loop: coolant distribution units and cold plates are outside this scope

KIT LADDER BY LOOP CLASS

Parameter	Value	Notes
EMS-TL-K100	**Single rack, up to 100 kW · 10–100 L/min**	Matched pair, one flow run, DP 0–100 kPa, level point switch, 1 leak channel
EMS-TL-K300	**Row, 100–300 kW · 20 GPM (≈75 L/min) secondary class**	Adds DP 0–400 kPa and a second leak channel
EMS-TL-K800	**Row, up to 800 kW · 90 GPM (≈340 L/min) secondary class**	Adds analogue reservoir level
EMS-TL-K2300	**Room, 2.3 MW class · up to 340 GPM (≈1 300 L/min) secondary**	Adds 4 leak channels and a second flow run

NOTES

- The kit is our own configuration of the documented sensor, transmitter and gateway models listed under Compatible with.
- Line sizes for the two flow runs on this class are quoted on request: the DN25 default covers 0.5–18 m³/h, which is below the 340 GPM class, so the runs are drawn from the DN10–DN1000 family.
- A leak rope is rated only to 35 % propylene glycol by weight, so a 50 % or 55 % premix sits outside that envelope; concentrated blends need the tray probe and a different detection arrangement.
- Flow accuracy is percent of reading and differential-pressure accuracy is percent of full scale; the two bases are labelled separately on every row.
- 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-K2300
Rev. A
2026-09-19