

EMS-CF-WQ-C

Contacting conductivity cell, cell constants 0.01 cm[■] and 0.1 cm[■]

Pure-water and make-up monitoring cell for a secondary loop bypass rack

A contacting conductivity cell published with cell constants of 0.01 cm[■] and 0.1 cm[■], giving measuring ranges of 0.04–20 µS/cm and 0.10–200 µS/cm. Electrodes are stainless steel 1.4435 with a PES shaft, rated IP68 and 13 bar abs at 20 °C, and the cell constant is defined against ISO 7888 and ASTM D1125. It exists to catch ionic drift on a de-ionised technology cooling loop, and its published spans do not reach the 50–300 µS/cm band a glycol-premix or facility-water loop is held at.

ORDERING INFORMATION

Part number	EMS-CF-WQ-C
Instrument	Contacting conductivity cell
Measuring range	0.04–20 µS/cm and 0.10–200 µS/cm
Wetted materials	Electrodes 1.4435 stainless steel; PES shaft
Process temperature	–20 to 100 °C fixed cable; –20 to 120 °C plug-in head
Ingress protection	IP68
Cell constant basis	ISO 7888 and ASTM D1125
Accuracy	Open — confirmed at order

MEASUREMENT

Parameter	Value	Notes
Measurement principle	Contacting (electrolytic) conductivity cell	Electrodes in contact with the fluid; a glycol loop is served by the inductive cell instead
Cell constant k = 0.01 cm [■] , measuring range	0.04–20 µS/cm	Pure-water resolution; this span does not reach the 50–300 µS/cm band of a glycol-premix or facility-water loop
Cell constant k = 0.1 cm [■] , measuring range	0.10–200 µS/cm	Tops out below the 300 µS/cm end of the glycol-premix or facility-water band
Cell constants published for the contacting family	0.1 cm [■] and 1.0 cm [■]	The 1.0 cm [■] constant serves the higher-conductivity end
Loop types covered by the published fine cells	0.04–200 µS/cm across k = 0.01 and k = 0.1 cm [■]	The de-ionised technology cooling loop band (0.2–20 µS/cm) sits inside this span; the glycol-premix or facility-water band (50–300 µS/cm) does not fit inside it at the top end
Accuracy	Open — not published	The source research publishes no accuracy figure as a percentage of reading; confirmed against the supplier document at order
Resolution	Open — not published	Confirmed against the supplier document at order
Calibration interval	Open — not published	No interval is published in the source research; confirmed at order
Calibration basis	Cell constant defined against ISO 7888 and ASTM D1125	Standard names published as the basis the constant is defined against

PROCESS AND MATERIALS

Parameter	Value	Notes
Process temperature	–20 to 100 °C with fixed cable; –20 to 120 °C with plug-in head	The plug-in head carries the higher figure
Sterilisation temperature	Sterilizable to 140 °C	Supplier-test condition published for the sensor
Process pressure	13 bar abs at 20 °C, falling to 1 bar abs at 120 °C	The pressure rating is temperature dependent; the two figures travel together
Wetted materials	Electrodes stainless steel 1.4435; shaft PES	Both materials are published for this cell
Process connection	Open — not published	Confirmed against the supplier document at order
Ingress protection	IP68	Sensor rating
Inspection documentation	EN 10204 3.1 document type available on request	A document-type designation, not a certificate held by the company; no identifier is published

SIGNAL AND SUPPLY

Parameter	Value	Notes
Output signal	Open — not published	Confirmed against the supplier document at order
Protocol	Open — not published	Confirmed against the supplier document at order
Supply voltage	Open — not published	The source research publishes no supply figure for this cell; confirmed at order
Transmitter requirement	A transmitter matched to the cell constant	The cell constant must be entered in the transmitter; this is what sets the usable span

BANDS THIS INSTRUMENT POLICES, BY LOOP TYPE

Parameter	Value	Notes
Conductivity band, glycol-premix or facility-water loop	50–300 µS/cm	Glycol is a weak electrolyte; a PG25 or facility-water loop sits in this band. The fine cells published here do not span its top end
Conductivity band, de-ionised technology cooling loop	0.2–20 µS/cm	A near-DI technology cooling loop with no glycol is held here, and the $k = 0.01 \text{ cm}^2$ cell is the one that resolves it
pH band, glycol-premix or facility-water loop	7.0–9.0 pH	Set by the metallurgy of the loop; read on a process pH sensor
pH band, de-ionised technology cooling loop	8.0–9.5 pH	The technology cooling side of the ASHRAE split; the two loop types do not share one pH band
Why the two columns are published together	Glycol content raises conductivity	A glycol loop and a de-ionised loop cannot share a single target; the loop type is named beside every band
Verification boundary	Inline readings are trend instruments	The laboratory panel, every 50–100 days or quarterly, is the reference

APPLICATIONS

- Make-up water line monitoring against a low-conductivity ingress event
- De-ionised technology cooling loop trend monitoring
- Pure-water and polish-loop conductivity monitoring
- Bypass rack measurement beside a pH sensor

COMPATIBLE PRODUCTS

- EMS-CF-WQ-PH pH sensor on the same bypass rack
- EMS-CF-WQ-CI inductive cell where the loop carries glycol
- EMS-CF-WQ-G glycol refractometer for mix strength
- EMS-CF-WQ-NTU turbidity instrument for the particulate proxy

WATER-QUALITY INSTRUMENT LADDER

Parameter	Value	Notes
EMS-CF-WQ-C	Contacting conductivity cell	0.04–200 µS/cm across the published fine cell constants
EMS-CF-WQ-CI	Inductive conductivity cell	Spans both the de-ionised and the glycol-premix or facility-water band
EMS-CF-WQ-PH	Process pH sensor	1–12 pH, 0–14 pH and 0–10 pH application variants
EMS-CF-WQ-NTU	Turbidity instrument	Polices the below-1 NTU loop target
EMS-CF-WQ-G	Glycol refractometer	0.0–90.0% (V/V) with 0.2% (V/V) resolution
EMS-CF-WQ-PC	Particle counter and contamination monitor	3-channel measurement to ISO 4406

NOTES

- Conductivity and pH bands are published with their loop type. A glycol-premix or facility-water loop is held at 50–300 µS/cm and pH 7.0–9.0; a de-ionised technology cooling loop is held at 0.2–20 µS/cm and pH 8.0–9.5. The loop type is named beside every band on this datasheet.
- The k = 0.01 cm² cell is built for pure-water and make-up monitoring. It tops out at 20 µS/cm and cannot see a treated-water loop held at 50–300 µS/cm; specify the cell from the band you intend to hold rather than from the resolution.
- Accuracy, resolution, output signal, process connection, supply voltage and calibration interval are not published in the source research. Those rows stay open and are confirmed against the supplier document at order.
- EN 10204 3.1 is the designation of an inspection-document type. It is published as documentation availability, is never paired with an identifier, and is not an approval the company holds.
- Inline conductivity is a trend instrument; the laboratory panel every 50–100 days or quarterly is the reference.

Full specification sheet and current pricing	EMS-CF-WQ-C
EMS-Trade Cooling · ems-cool.com	Rev. A
Typical lead time confirmed on order acknowledgement.	2026-09-19