EMS-CF-WQ-PH

Process pH sensor, 1–12 pH, 0–14 pH and 0–10 pH application variants

Glass electrode with a PTFE ring junction reference, for a secondary loop bypass rack

A process pH sensor published in three application variants: 1–12 pH to 80 °C, 0–14 pH to 135 °C, and 0–10 pH for media carrying hydrofluoric acid at or below 1 g/L. The reference is a PTFE ring junction with 3 M KCl and Ag/AgCl, with an integrated NTC 30 kΩ temperature element, shaft lengths of 120 mm and 425 mm and an IP68 rating. It exists to hold the pH band the loop metallurgy sets, and its accuracy, resolution and calibration interval are not published, so they are confirmed at order.

ORDERING INFORMATION

Part number	**EMS-CF-WQ-PH**
Instrument	**Process pH sensor, glass electrode**
Measuring range	**1–12 pH (A); 0–14 pH (B); 0–10 pH (F)**
Reference system	**PTFE ring junction, 3 M KCl, Ag/AgCl**
Temperature element	**Integrated NTC 30 kΩ**
Shaft length	**120 mm and 425 mm**
Ingress protection	**IP68**
Accuracy	**Open — confirmed at order**

MEASUREMENT

Parameter	Value	Notes
Measuring range, application A	**1–12 pH**	Application A; process temperature –15 to 80 °C
Measuring range, application B	**0–14 pH**	Application B; process temperature 0–135 °C, the widest of the three variants
Measuring range, application F	**0–10 pH**	Application F, for media with hydrofluoric acid at or below 1 g/L; hydrofluoric acid attacks glass, which is why the range and the temperature are narrower
Accuracy	**Open — not published**	The source research publishes no accuracy figure for this sensor; 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
Sensor life	**Open — not published**	Confirmed against the supplier document at order
ISFET variant	**Open — not published**	The source research could not verify an ISFET variant; confirmed at order

PROCESS, MATERIALS AND MECHANICAL

Parameter	Value	Notes
Process temperature by application	**A –15 to 80 °C; B 0–135 °C; F 0–70 °C**	The temperature window is tied to the application variant, so the variant is part of the specification

Parameter	Value	Notes
Process pressure by application	**A and B 0.8–17 bar abs (11.6–246.5 psi); F 0.8–7 bar abs**	The hydrofluoric-acid variant carries the lower pressure ceiling
Reference system	**PTFE ring junction, 3 M KCl, Ag/AgCl**	Published reference construction
Temperature element	**Integrated NTC 30 kΩ**	Used for temperature compensation of the pH reading
Shaft length	**120 mm and 425 mm**	Two published immersion lengths
Construction	**Glass electrode pressure-stable to 17 bar, sealed no-maintenance reference, flat measuring surface, quick-change cartridge**	Published adjacent construction detail for this sensor class; confirm the construction of the delivered variant at order
Wetted materials	**Glass electrode body and PTFE junction**	The full wetted-material list is not published for this model and is confirmed at order
Process connection	**Open — not published**	Confirmed against the supplier document at order
Storage temperature	**15–30 °C**	Published storage window; a dry or frozen junction is the usual cause of a slow reading
Ingress protection	**IP68**	Sensor rating

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 sensor; confirmed at order

BANDS THIS INSTRUMENT POLICES, BY LOOP TYPE

Parameter	Value	Notes
pH band, glycol-premix or facility-water loop	**7.0–9.0 pH**	Set by the metallurgy of the loop; corrosion control and inhibitor effectiveness
pH band, de-ionised technology cooling loop	**8.0–9.5 pH**	The technology cooling side of the ASHRAE split; a near-DI loop is held higher than a glycol loop
Conductivity band, glycol-premix or facility-water loop	**50–300 µS/cm**	Glycol is a weak electrolyte; the loop type decides which conductivity band applies
Conductivity band, de-ionised technology cooling loop	**0.2–20 µS/cm**	A near-DI technology cooling loop with no glycol is held three orders of magnitude lower
Fresh-fill reference	**About 8.8 pH at 33% v/v in DI water**	DIN EN 1262; a fresh charge sits near the top of the glycol-loop band
Verification boundary	**Inline pH is a trend instrument**	The laboratory panel, every 50–100 days or quarterly, is the reference

APPLICATIONS

- pH trend on a glycol-carrying secondary loop
- pH trend on a de-ionised technology cooling loop
- Bypass rack measurement beside a conductivity cell
- Media carrying hydrofluoric acid at or below 1 g/L, on the F variant

COMPATIBLE PRODUCTS

- EMS-CF-WQ-C or EMS-CF-WQ-CI conductivity cell
- EMS-CF-WQ-G glycol refractometer for mix strength
- EMS-CF-WQ-NTU turbidity instrument
- EMS-CF-FP-DP element differential-pressure monitor on the same rack

PH APPLICATION VARIANTS

Parameter	Value	Notes
A	**1–12 pH**	–15 to 80 °C; 0.8–17 bar abs
B	**0–14 pH**	0–135 °C; 0.8–17 bar abs
F	**0–10 pH**	0–70 °C; 0.8–7 bar abs; media with hydrofluoric acid at or below 1 g/L

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

- pH bands are published with their loop type. A glycol-premix or facility-water loop is held at pH 7.0–9.0; a de-ionised technology cooling loop is held at pH 8.0–9.5. The conductivity bands are published beside them for the same reason: 50–300 µS/cm on a glycol-premix or facility-water loop, 0.2–20 µS/cm on a de-ionised technology cooling loop.
- Accuracy, resolution, ISFET variant, calibration interval and sensor life are not published in the source research. Those rows stay open and are confirmed against the supplier document at order; the datasheet publishes range, temperature, pressure and reference system, which are the sourced rows.
- The application variant fixes the temperature and pressure window. Application F is limited to media with hydrofluoric acid at or below 1 g/L, at 0–70 °C and 0.8–7 bar abs.
- Inline pH is a trend instrument; the laboratory panel every 50–100 days or quarterly is the reference.

Full specification sheet and current pricing
EMS-Trade Cooling · ems-cool.com
Typical lead time confirmed on order acknowledgement.

EMS-CF-WQ-PH
Rev. A
2026-09-19