

Moisture Detectors and Controllers

In extractive gas analysis the sample gas must be conditioned before it enters the measuring cell of the analyser. One of these conditioning stages is moisture precipitating in so-called sample gas coolers. Since the composition of the sample gas can fluctuate, a condensate slip downstream from the cooler cannot be entirely ruled out. Moisture detectors installed in the cooler output indicate such slip. Combined with suitable controllers this will generate the respective signals/alarms in the control system.

The moisture detector series features a wide range of options.

FF-HM series for rail mounting:

Potential-free outputs for moisture alarm and cable break on standby current (fail-safe)
LEDs for voltage, moisture and cable break
Fault analysis settings: auto-reset or lock

FF-3-U-2 series inside a small casing:

Connecting one or up to 2 separate moisture detectors
Auto-resetting alarms, based on open circuit principle
LEDs for voltage, moisture and cable break

Buhler Technologies LLC, 1030 West Hamlin Road, Rochester Hills, MI 48309
Phone: 248.652.1546
e-mail: sales@buhlertech.com
Internet: www.buhlertech.com

Technical Data

Moisture detectors	FF-3-N	FF-40
Material:	PVDF, 1.4571, epoxy resin, 1.4576, PTFE	PE, 1.4571, epoxy resin, 1.4576
Cord length:	Standard 4 m (13 ft), 4 x 0.34²	Standard 4 m (13 ft), 2 x 0.25²
Max. operating pressure:	2 bar	40 bar
Operating temperature:	3 °C to 50 °C (37.4 to 122 °F)	3 °C to 50 °C (37.4 to 122 °F)
Cable break detection:	yes	yes

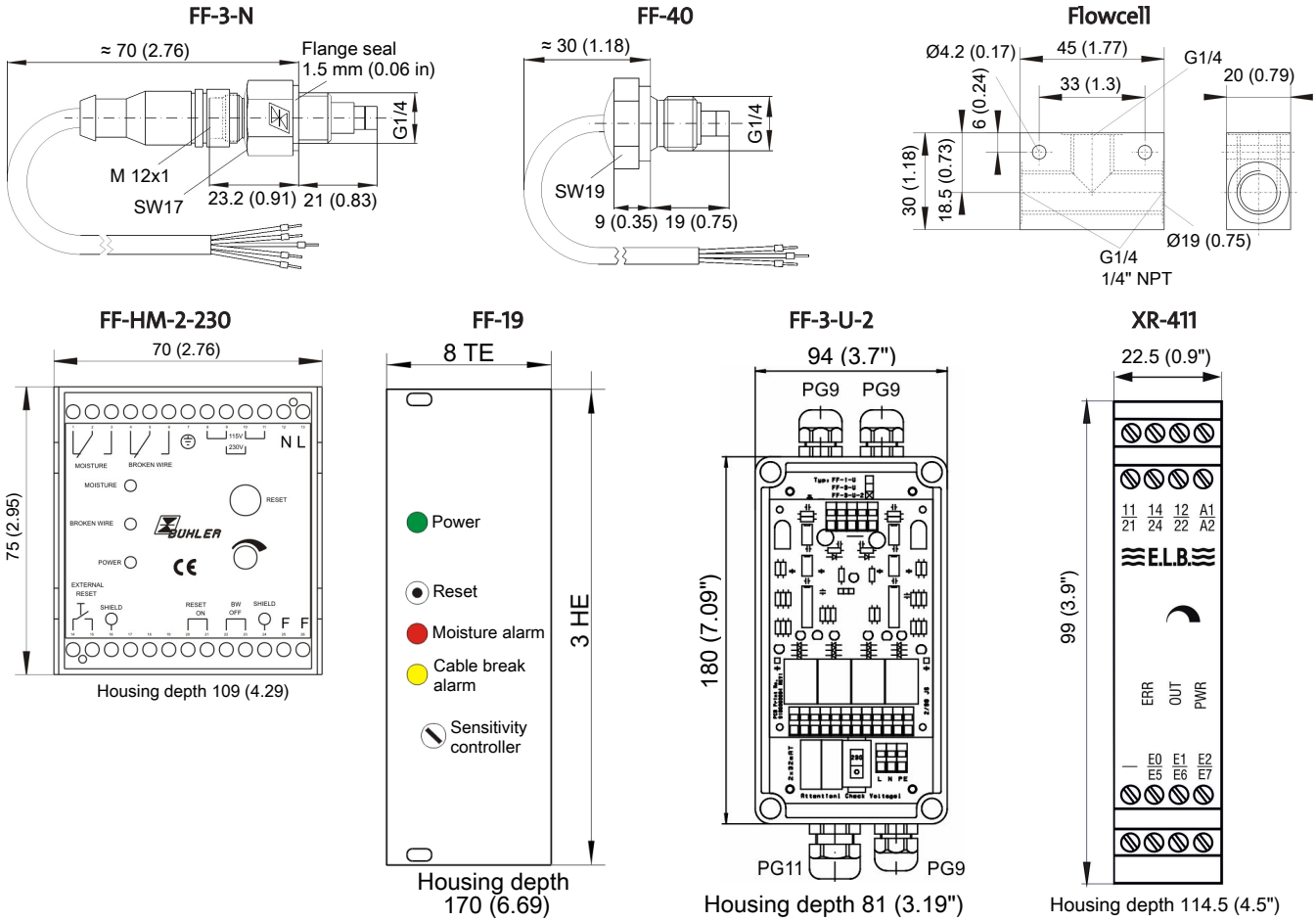
Type FF-3-N may be operated in ATEX areas of Zone 1 or Zone 2, temperature class T5, gas group IIC, under the following conditions:

- Only use the humidity sensor in a single circuit with an intrinsically safe, type-approved voltage source of type XR-411. Additional equipment or voltage sources in this circuit are not permitted!
- Clearance and creepage distances in accordance with EN 60079-11 must be maintained to all parts of the FF-3-N humidity sensor. These depend on the specific installation and ambient conditions, including the degree of contamination of the medium.
- The operating parameters of humidity sensor FF-3-N must not be exceeded.
- The type-dependent application specifications for the XR-411 disconnector in the operating instructions and ATEX approval must be observed.

Flowcell	Type G	Type S
Material:	PVDF	1.4571

Controllers	FF-HM-2-230	FF-HM 24	FF-19	FF-3-U-2	XR-411
Supply voltage:	230/115 V AC 50/60 Hz ±10%	24 V DC ± 10%	24 V DC ± 10%	230/115 V AC 50/60 Hz ±10%	24 V...230 V AC/DC Wide-range power supply unit +10%
Max. switching output current:	230 V/2 A	24 V AC/DC 2 A	24 V AC/DC 2 A	230 V/2 A	AC: 250 V/5 A DC: 150 V/8 A
IP rating:	IP40 Terminals IP20	IP40 Terminals IP20	IP20 when built-in	IP65	IP40 Terminals IP20
Ex protection class:	-	-	-	-	II (1) G [Ex ia Ga] IIC
Max. lead length:	4 m	4 m	4 m	4 m	70 m
Dimensions (WxHxD/mm):	70 x 75 x 109 (2.8 x 3.0 x 4.3")	70 x 75 x 109 (2.8 x 3.0 x 4,3")	8TE x 3HE x 170 (8DU x 3 HU x 6,69")	94 x 180 x 81 (3.7 x 7.1 x 3.2")	22.5 x 99 x 114.5 (0.9 x 3.9 x 4.5")
Connection:	Terminals	Terminals	Multi-pole connector DIN 41612 style B	Terminals	Terminals

Dimensions



Ordering instructions

Item no.	Description
4111100	FF-3-N moisture detector (without cable)
41111000	FF-3-N moisture detector (with cable)
4189699	FF-40 moisture detector
4011000	Type G flowcell (PVDF)
4011000I	Type NPT flowcell (PVDF)
4011005	Type S-G flowcell (stainless steel)
4011005I	Type S-NPT flowcell (stainless steel)
4111023	Controller FF-HM-2-230
4111030	Controller FF-HM-24
4111016	Controller FF-3-U-2
4111040	Controller FF-19
4111110	Controller XR-411