

# F3.00.W



Wireless paddlewheel flow sensor



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The FLS F3.00.W Wireless paddlewheel flow sensor is an innovative flow monitoring system based on Bluetooth® Low Energy transmission technology. The paddlewheel flow sensor is equipped with a transmitter that communicates with the receiver. The receiver is compatible with monitors or other devices with digital inputs. The F3.00.W system is a reliable solution for any type of solid-free liquid. Easy and quick to install, it is suitable for pipes in various materials and sizes, from DN15 to DN600 (0.5" - 24"). It can cover operating distances of up to 100 metres and work in the presence of electromagnetic interference generated by devices such as pumps or inverters. In addition, thanks to the self-diagnosis system, the user is always informed of any problems related to lack of signal or flat battery.

## WIRELESS PADDLEWHEEL FLOW SENSOR

### APPLICATIONS

- Water and industrial wastewater treatment
- Water cooling systems
- Swimming pools
- Flow control and monitoring
- Water regeneration plants
- Processing and manufacturing industry
- Water distribution
- Irrigation and agriculture

### MAIN CHARACTERISTICS

- High chemical resistance
- Pipe size range: from DN15 (0.5") to DN600 (24")
- Low pressure drop
- Automatic coupling system
- Self-diagnosis control and reporting
- High immunity to electromagnetic interference
- Long operating distance

### TECHNICAL DATA

#### General information

**Pipe size range:** from DN15 to DN600 (0.5-24") For more details, refer to the Installation Adapters section

**Flow range:** from 0.15 to 8 m/s (0.5-25 ft/s)

**Linearity:** ±0.75% of full scale

**Repeatability:** ±0.5% of full scale

**Minimum Reynolds number required:** 4,500

**Protection class:** IP65

#### Materials in contact with liquids:

- Sensor body: C-PVC, PVDF or AISI 316L stainless steel
- O-ring: EPDM or FKM
- Rotor: ECTFE (Halar®)
- Shaft: Ceramic ( $Al_2O_3$ ) / AISI 316 Stainless Steel (for metal sensors)
- Bearings: Ceramic ( $Al_2O_3$ )

#### Electrical data

#### Transmitter:

- Power supply: 3.6V Lithium Thionyl Chloride battery, size C, 8.5 Ahr
- Battery life: nominal 2 years

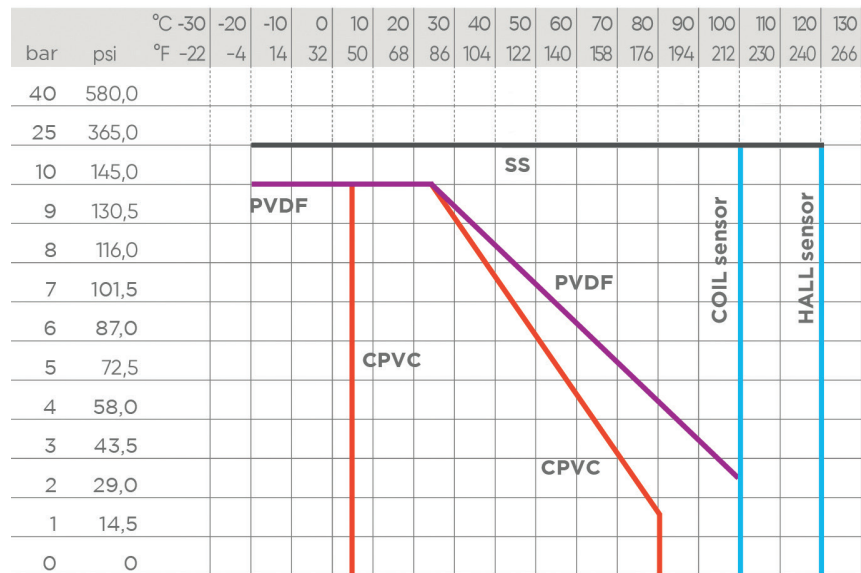
#### Receiver:

- Power supply: 5-24 V CC ±10% a 20 mA
- Output signal for flow measurement and lack of signal:
  - Square wave
  - Frequency: 45 Hz for nominal m/s (13.7 Hz for nominal ft/s)
  - Type: NPN Open collector transistor
- Output signal for flat battery:
  - Type: NPN Open collector
  - Max pull-up voltage 24 VDC
  - Max current: 50 mA
  - Battery level: 0V DC flat battery + V DC fully charged

<b>Environmental data</b>	<b>Operating temperature:</b> from -20 to +70°C (from -4 to 158°F)
	<b>Storage temperature:</b> -30 to +80°C (from -22 to 176°F)
	<b>Relative humidity:</b> from 0 to 95% not condensing
<b>Standards &amp; Approvals</b>	Manufactured under ISO 9001
	Manufactured under ISO 14001
	CE
	RoHS Compliance
	EAC

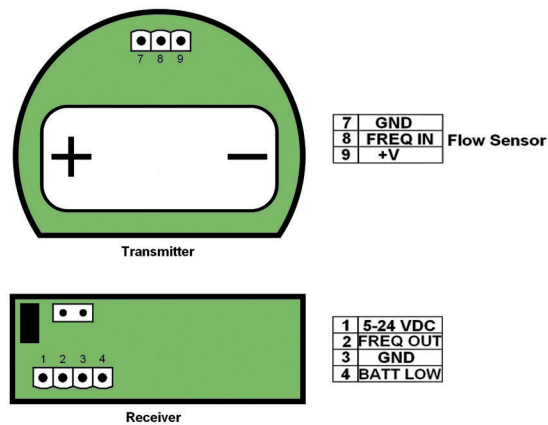
## MAX OPERATING PRESSURE/TEMPERATURE (25-YEAR DURATION)

- C-PVC body:
  - 10 bar (145 psi) at 25°C (77°F)
  - 1.5 bar (22 psi) at 80°C (176°F)
- PVDF body:
  - 10 bar (145 psi) at 25°C (77°F)
  - 2.5 bar (36 psi) at 100°C (212°F)
- Stainless steel body:
  - 25 bar (363 psi) at 120°C (248°F)



## ELECTRICAL CONNECTIONS

Rear view of electrical connections



# PRODUCT CODES



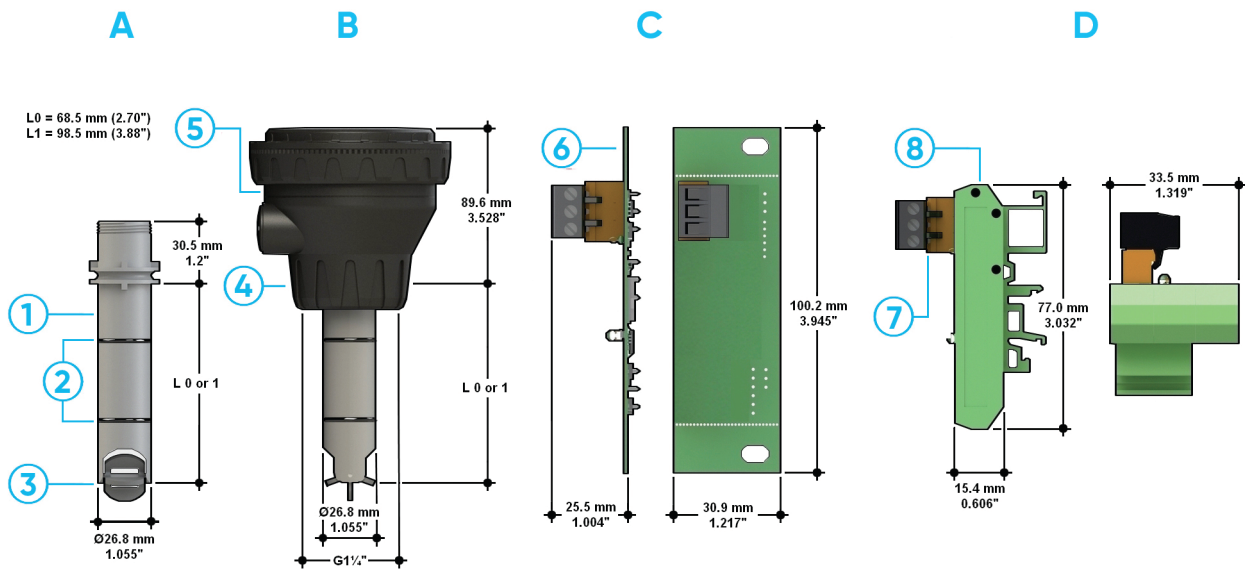
## F3.00.W.XX

Paddlewheel wireless Flow Sensor (B.L.E.)

Code	Version	Power supply	Length	Main Wetted Materials	Enclosure	Flow Rate Range	Weight (gr.)
F3.00.W.13	wireless	Battery	L0	C-PVC EPDM	IP65	From 0,15 to 8 m/s*	750
F3.00.W.14	wireless	Battery	L0	C-PVC FKM	IP65	From 0,15 to 8 m/s*	750
F3.00.W.15	wireless	Battery	L1	C-PVC EPDM	IP65	From 0,15 to 8 m/s*	800
F3.00.W.16	wireless	Battery	L1	C-PVC FKM	IP65	From 0,15 to 8 m/s*	800
F3.00.W.17	wireless	Battery	L0	PVDF EPDM	IP65	From 0,15 to 8 m/s*	750
F3.00.W.18	wireless	Battery	L0	PVDF FKM	IP65	From 0,15 to 8 m/s*	750
F3.00.W.19	wireless	Battery	L1	PVDF EPDM	IP65	From 0,15 to 8 m/s*	800
F3.00.W.20	wireless	Battery	L1	PVDF FKM	IP65	From 0,15 to 8 m/s*	800
F3.00.W.21	wireless	Battery	L0	316L SS EPDM	IP65	From 0,15 to 8 m/s*	950
F3.00.W.22	wireless	Battery	L0	316L SS FKM	IP65	From 0,15 to 8 m/s*	950
F3.00.W.23	wireless	Battery	L1	316L SS EPDM	IP65	From 0,15 to 8 m/s*	1000
F3.00.W.24	wireless	Battery	L1	316L SS FKM	IP65	From 0,15 to 8 m/s*	1000

\* from 0,15 to 8 m/s = (0,5-25 feet/s)

# TECHNICAL DRAWINGS



- |   |  |   |
|---|--|---|
| <b>A</b> Sensor body                          | <b>1</b> Sensor body C-PVC, PVDF, 316L SS  | <b>4</b> ABS cap for installation into fittings |
| <b>B</b> F3.00.W Paddlewheel Flow transmitter | <b>2</b> O-Ring (EPDM or FPM)  | <b>5</b> Electronic box                         |
| <b>C</b> Receiver PCB                         | <b>3</b> Halar Rotor, Ceramic shaft & bearings for PVDF and C-PVC version and 316 SS Shaft for metal version | <b>6</b> PCB                                    |
| <b>D</b> Receiver + DIN bar adapter           |  | <b>7</b> Connectors                             |
|   |  | <b>8</b> DIN bar case adapter                   |