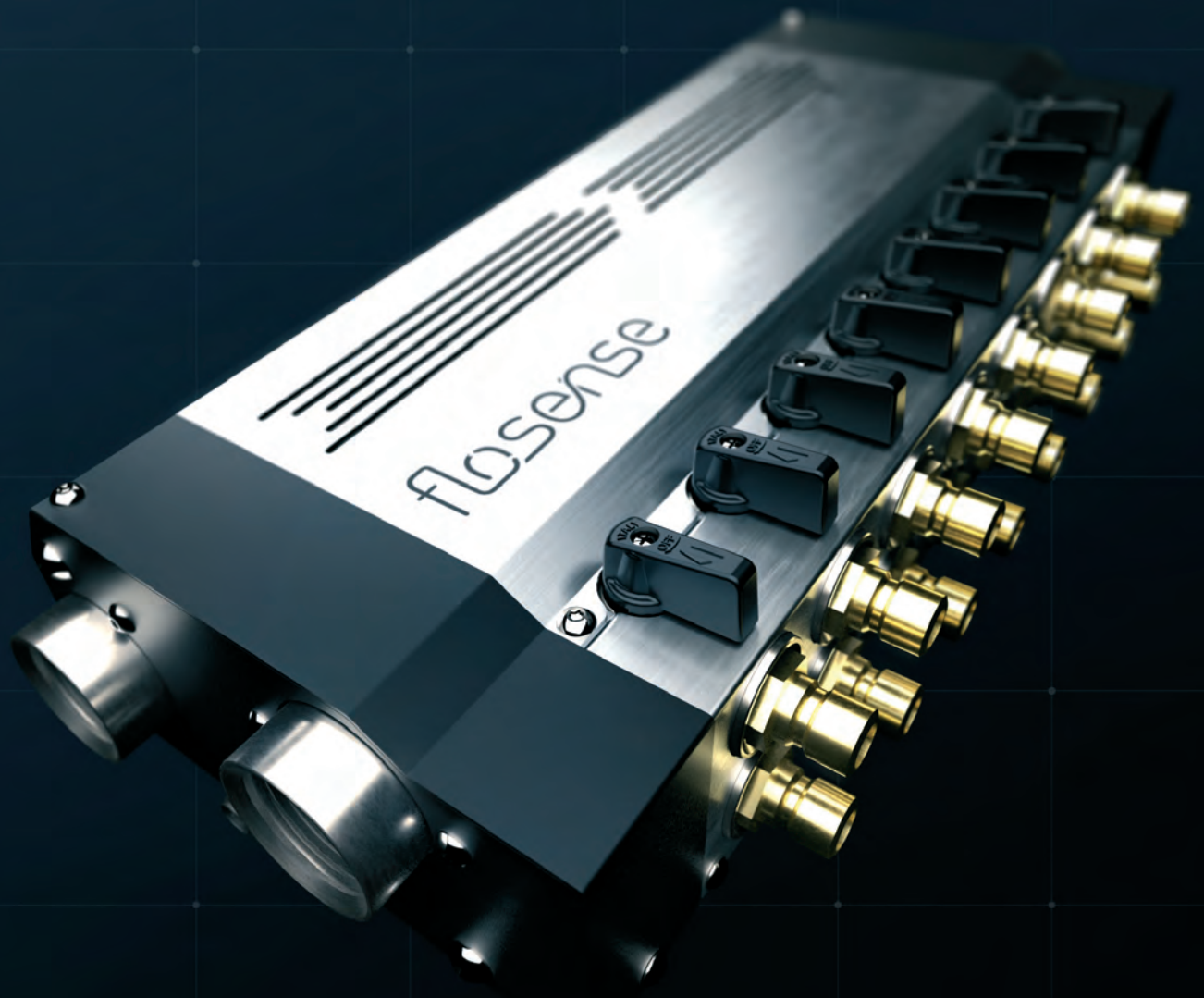


# LET IT FLOW

quicker, cooler, faster...



flosense<sup>®</sup> 4.0

DIGITAL FLOW MONITOR

 **hales<sup>®</sup>**

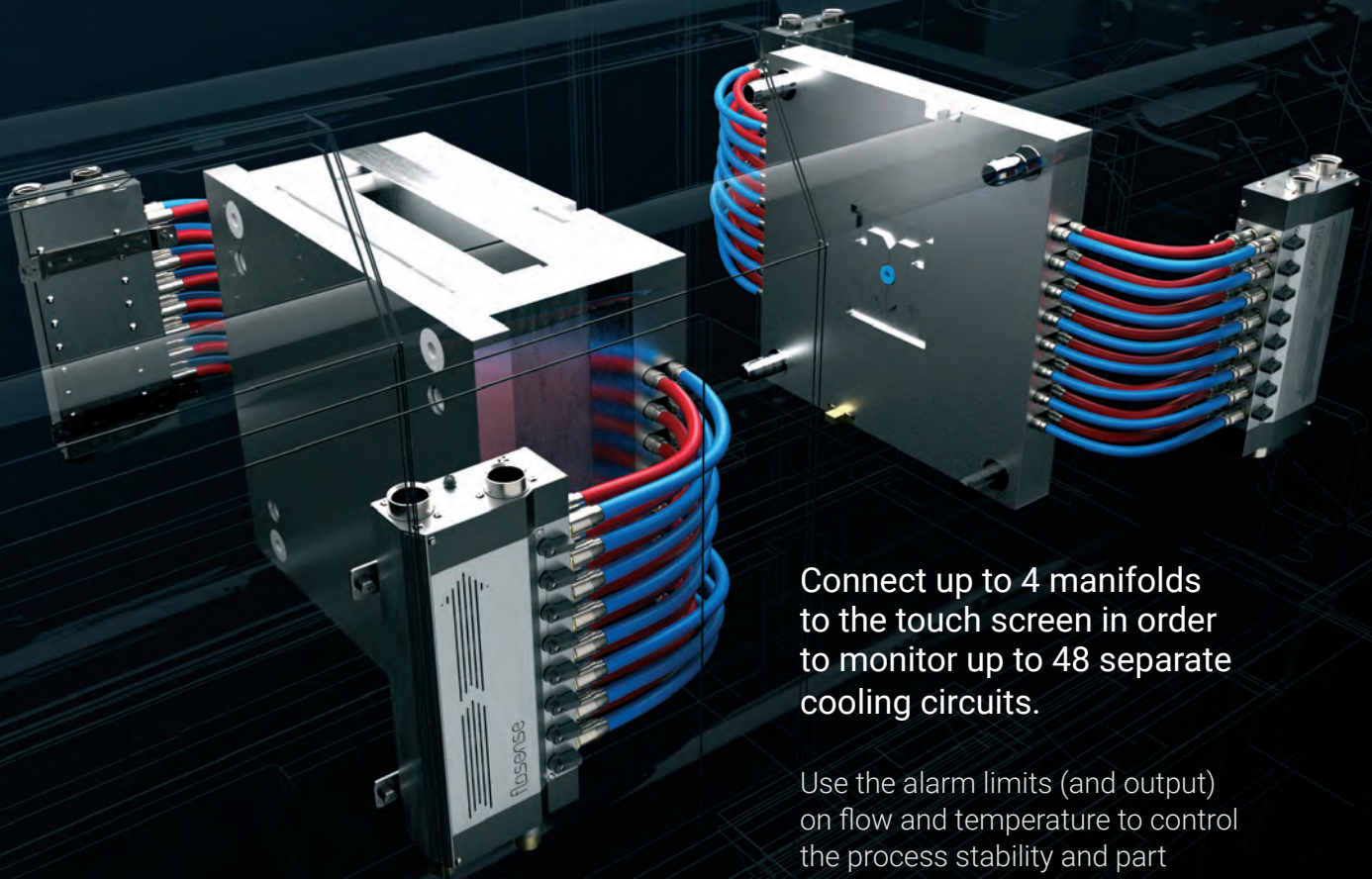
[www.hales.com.au](http://www.hales.com.au) • VIC • QLD • NSW • SA • SINGAPORE •

flosense® 4.0

# MANIFOLD



Complete unit with Pressure sensor installed on main inlet / return.



Connect up to 4 manifolds to the touch screen in order to monitor up to 48 separate cooling circuits.

Use the alarm limits (and output) on flow and temperature to control the process stability and part quality.



flow

temperature

pressure



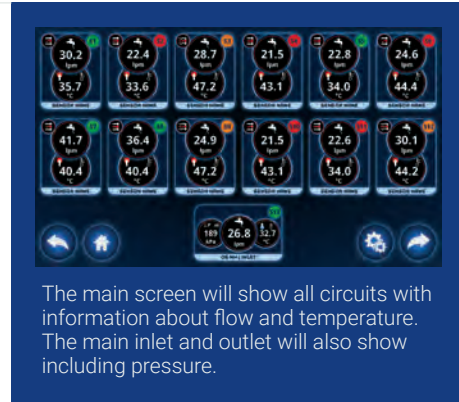
## Upgrade your moulding machine with new digital flow manifold and improve your productivity.

Replacing traditional analogue manual flow regulators with new digital flow manifold will give you many advantages such as:

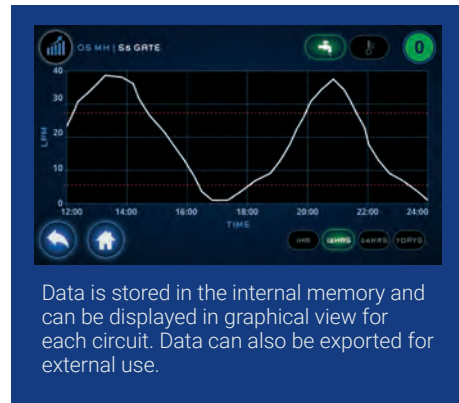
- Digital monitoring of Flow, Temperature and Pressure
- Alarm Output
- Higher flow capacity
- Higher temperature range
- Data storage and export
- Faster Mould changeovers
- OPC-UA / Euromap interface /

Touch Screen with 4 manifold inputs. With magnetic bracket for easy installation.

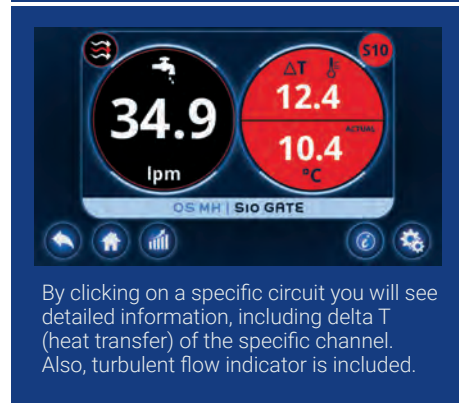
Equipped with power, alarm, USB and Ethernet connections.



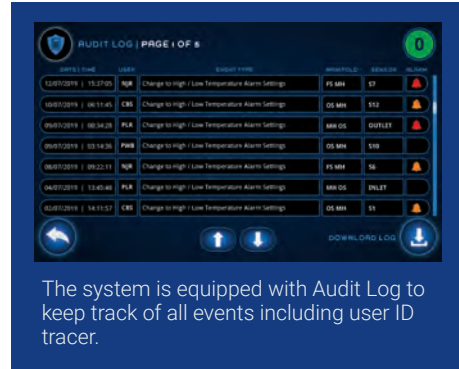
The main screen will show all circuits with information about flow and temperature. The main inlet and outlet will also show including pressure.



Data is stored in the internal memory and can be displayed in graphical view for each circuit. Data can also be exported for external use.



By clicking on a specific circuit you will see detailed information, including delta T (heat transfer) of the specific channel. Also, turbulent flow indicator is included.




The system is equipped with Audit Log to keep track of all events including user ID tracer.

| PART NO. | Size | Manifold inputs | Power Connection | Alarm Output | Interface |
|----------|------|-----------------|------------------|--------------|-----------|
| FS-7100  | 7,1" | 4               | 12V              | Yes          | OPC-UA    |

# CONSTRUCTION

**Material:**

Flow modules: DZR Brass / nickel plated /  
Cover: stainless steel

| PART NO.     | Flow sensor range option (l/m) |      |      | Ports | Length / mm / | Width / mm / | Height / mm / |  |
|--------------|--------------------------------|------|------|-------|---------------|--------------|---------------|---|
|              | 0,5-10                         | 1-20 | 2-40 |       |               |              |               |   |
| F4M4-x-xx    | •                              | •    | •    | 4     | 220           | 155          | 72            | 120°C   |
| F4M4HT-x-xx  | •                              | •    | •    | 4     | 220           | 155          | 72            | 160°C   |
| F4M6-x-xx    | •                              | •    | •    | 6     | 287           | 155          | 72            | 120°C   |
| F4M6HT-x-xx  | •                              | •    | •    | 6     | 287           | 155          | 72            | 160°C   |
| F4M8-x-xx    | •                              | •    | •    | 8     | 354           | 155          | 72            | 120°C   |
| F4M8HT-x-xx  | •                              | •    | •    | 8     | 354           | 155          | 72            | 160°C   |
| F4M10-x-xx   | •                              | •    | •    | 10    | 421           | 155          | 72            | 120°C   |
| F4M10HT-x-xx | •                              | •    | •    | 10    | 421           | 155          | 72            | 160°C   |
| F4M12-x-xx   | •                              | •    | •    | 12    | 488           | 155          | 72            | 120°C   |
| F4M12HT-x-xx | •                              | •    | •    | 12    | 488           | 155          | 72            | 160°C   |

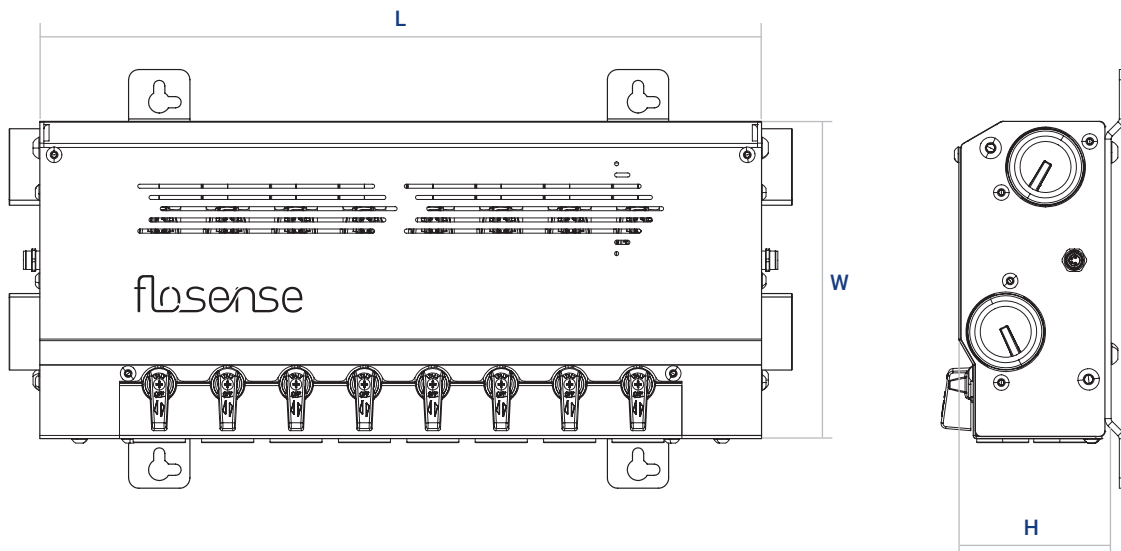
Ordering Example: Part No. + Flow sensor range (F4M4-1-20)

**HT** = High Temperature.

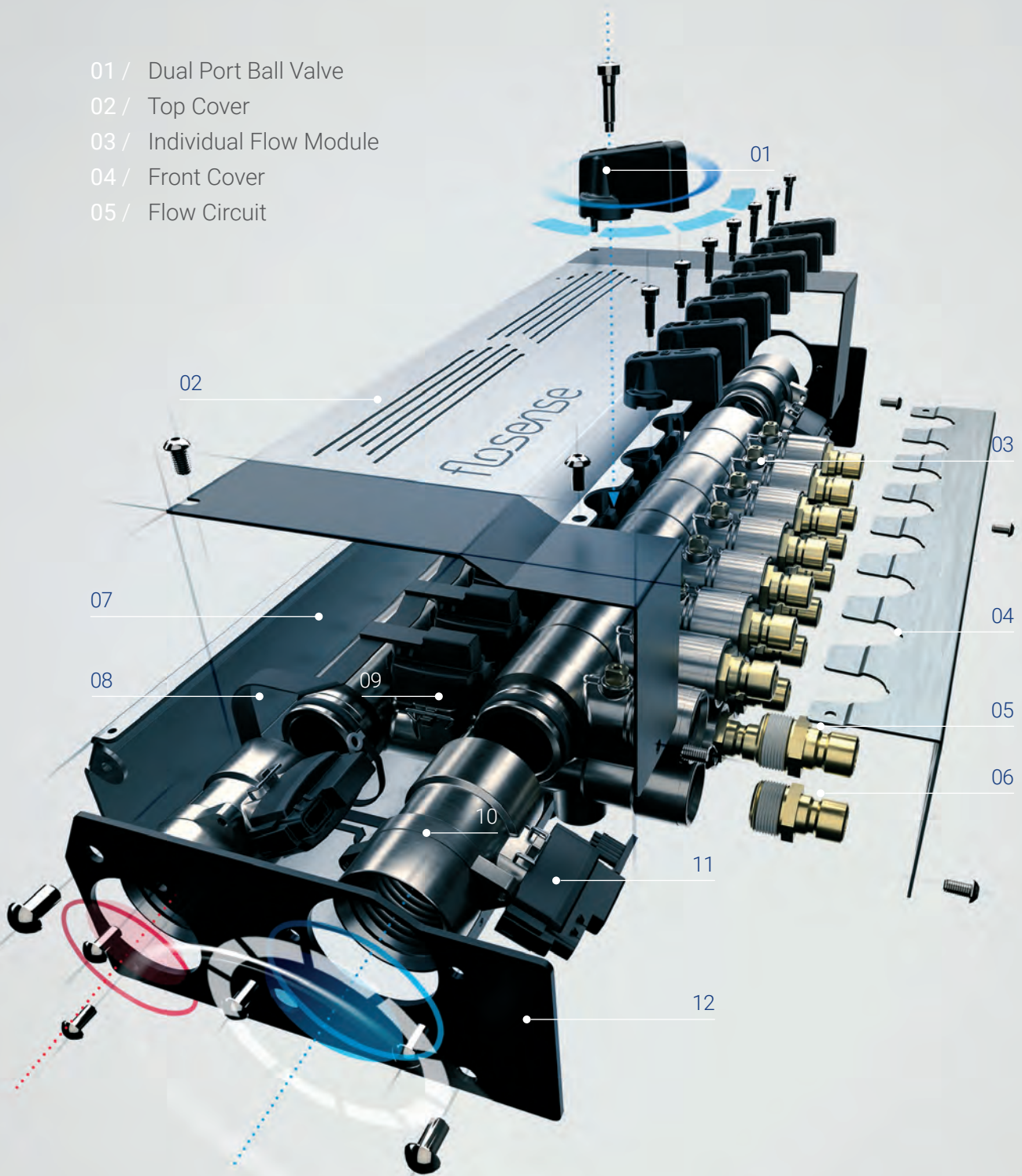
Complete unit with Pressure sensor installed on main inlet / return. Connect up to 4 manifolds to the touch screen in order to monitor up to 48 separate cooling circuits.  
Use the alarm limits (and output) on flow and temperature to control the process stability and part quality.

**Material:**

Flow modules: DZR Brass / nickel plated / Cover: stainless steel.



- 01 / Dual Port Ball Valve
- 02 / Top Cover
- 03 / Individual Flow Module
- 04 / Front Cover
- 05 / Flow Circuit



- 06 / Return Circuit
- 07 / Base Frame
- 08 / Cable
- 09 / Flow / Temperature Sensor
- 10 / End Module
- 11 / Pressure / Temperature Sensor
- 12 / End Plate



SYNC

# VNC CONNECT

With the inbuilt **VNC Server** it is possible to mirror the Flosense software onto the moulding machine controller (or any other ancillary equipment with VNC Client capability). For maximum flexibility the Flosense display can be mounted at the rear of the moulding machine, close to the manifolds, for ease of setup.

**VNC Connect** is a very simple integration eliminating the need for specialist software development and allowing the user to always have the very latest in flow monitoring software. With the Flosense software operational from the machine controller this keeps the number of screens on the front of the machine to a minimum.

# ACCESSORIES

## Manifold / Extension cable

| PART NO.      | Connection | Length (mm) |
|---------------|------------|-------------|
| FS-3P-EC1000  | M8/M8/3P   | 1000        |
| FS-3P-EC2000  | M8/M8/3P   | 2000        |
| FS-3P-EC5000  | M8/M8/3P   | 5000        |
| FS-3P-EC10000 | M8/M8/3P   | 10000       |



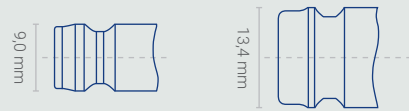
## Blanking Plug

| PART NO. | Connection | Seal |
|----------|------------|------|
| SSEC1    | 1" BSPP    | FKM  |



## Port Connector Plugs

| PART NO. | Connection | Size/Series           |
|----------|------------|-----------------------|
| 09NRF    | R 1/2"     | 09 EURO Style         |
| 13NRF    | R 1/2"     | 13 EURO Style         |
| 20NRF    | R 1/2"     | 20 Int. Style         |
| 30NRF    | R 1/2"     | 30 Int. Style         |
| 08NRF    | R 1/2"     | French Type Style     |
| F9NRF    | R 1/2"     | French Matic Style    |
| 06NRF    | R 1/2"     | 06 Scandinavian Style |
| 10MF     | R 1/2"     | 10 mm Hosetail        |
| 13MF     | R 1/2"     | 13 mm Hosetail        |
| 25MF     | R 1"       | 25 mm Hosetail        |
| 38MF     | R 1"       | 38 mm Hosetail        |



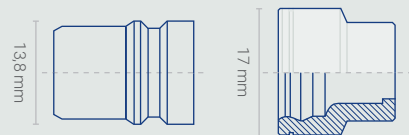
Series 09

Series 13



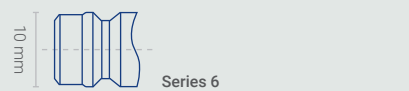
Series 20

Series 30



Series 8

Series 9



Series 6



# SPECIFICATION

| MATERIALS       |   |
|-----------------|---|
| Modules         | Nickel Plated DZR Brass (Corrosion resistant) |
| Main Feed       | R1"   |
| Circuits        | R1/2"   |
| Cover           | Stainless Steel                               |
| DISPLAY         |   |
| Type            | Touch   |
| Size            | 7,1"  |
| Voltage         | 12-24 Volt.                                   |
| Data            | USB + Ethernet                                |
| Communications  | OPC UA  |
| Internal memory | Up to 30 days data (FIFO)                     |



| FLOW            | Standard Sensor             | HT Sensor                   |
|-----------------|-----------------------------|-----------------------------|
| Measuring range | 0,5-10 l/min (0,16-3,7 gpm) | 0,5-10 l/min (0,16-3,7 gpm) |
|                 | 1-20 l/min (0,27-5,2 gpm)   | 1-20 l/min (0,27-5,2 gpm)   |
|                 | 2-40 l/min (0,53-10,4 gpm)  | 2-40 l/min (0,53-10,4 gpm)  |
| Accuracy        | (± 1 σ) in water, ± 1% FS   | (± 1 σ) in water, ± 1% FS   |
| TEMPERATURE     |                             |                             |
| Measuring range | 0-120°C (32-248°F)          | 0-160°C (32-320°F)          |
| Accuracy        | 15-90°C (59-194°F) ± 0.5 K  | 15-90°C (59-194°F) ± 0.5 K  |
|                 | 0-120°C(32-248°F) ± 1 K     | 0-120°C (32-248°F) ± 1 K    |
|                 |                             | 120-160°C (248-320°F) ± 2 K |
| PRESSURE        |                             |                             |
| Measuring range | 0-10 bar (0-145 psi)        |                             |
| Accuracy        | ± 2.5% FS                   |                             |

