SINGLE
Distribution and measuring systems

EcoFlow

The innovative SWV and DFM4 distribution and measuring systems of the EcoFlow product family provide detailed process information and allow additional parameter setting and configuration.

SINGLE SWV is a central system for distributing cooling and transfer media to multiple circuits in injection moulding machines and is equipped with a precise flow meter. The standard system is designed for temperatures up to 100 °C and has a metering range of between 1 and 12 l/min.

With its compact footprint, it is easily installed in injection moulding machines or mould spaces. Thanks to its modular design, SWV is infinitely adaptable to between 4 and 32 temperature control circuits. The SINGLE SWV water distribution system is highly precise, wear-free, impervious to contamination and virtually maintenance-free.

Standard equipment

General

- Circulating medium water up to 100 °C, optional up to 180 °C
- Modular design for between 4 and 32 temperature circuits
- Compact footprint

Hydraulics

- High-precision, contamination-free flow metering according to the eddy current method up to 100 °C, above according to the differential pressure method
- Wear-free operation
- Maintenance-free construction

Electrical and control equipment

- SINGLE SC controller
- Flow metering and monitoring of up to 32 circuits / flow rate and media return temperature metering and monitoring of up to 16 circuits
- 2 m connection cable

Options

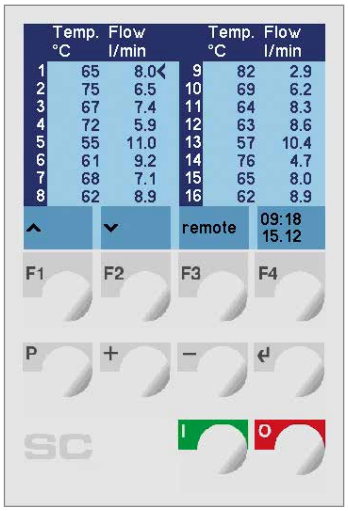
- Wider metering range from 2 to 40 l/min
- High-temperature equipment variation up to 180 °C with flow rates of between 0.2 and 25.0 l/min
- Measuring point for median pressure
- Measuring point for overall flow temperature
- Lockable solenoid valves for each circuit

Used in combination with the SINGLE SC controller, the system allows flow metering and monitoring of up to 32 circuits or the flow rate and media return temperatures of up to 16 circuits. The SC controller has several interfaces for transferring data to the injection moulding machine's control system for process monitoring or to other data acquisition systems/central computers.

single
first choice
in temperature control

SINGLE Temperiertechnik GmbH, Ostring 17-19, 73269 Hochdorf/Germany, Phone: +49 (0) 7153/3009 - 0, Fax: +49 (0) 7153/3009 - 50, www.single-temp.de

SINGLE SC controller



Operating in combination with the SC controller, the SWV water distribution system allows metering and monitoring of flow rates and media return temperatures

Standard equipment

- Graphics-enabled text display
- Specifically assigned soft keys
- Detailed alarm messages and real text parameters
- Text messages can be received and called up in any language
- Graphic presentation of measured values of all flow rates and temperatures
- Trouble shooting tips can be called up in case of alarm
- Alarm history
- Digital interface via RS 232, RS 485, customer-specific protocols TTY, Profibus DP, CAN Bus, Euromap 66, SPI, Modbus, Ethernet (optional)
- Real-time clock with clock relay function
- Parameter for 20 different moulds

Areas of application

- Compact water distribution system for injection moulding machines
- Mould-aligned water distribution system for installation in injection moulding machines with a separate control unit
- Variotherm mould temperature control (in connection with an upstream temperature control system and SINGLE EcoTemp intermittent mould temperature control)

SINGLE SWV – Compact water distribution system for injection moulding machines

All standard injection moulding machines are equipped with a water battery. The SINGLE SWV water distribution system with integrated flow meter is a maintenance-free alternative to conventional float-type flow meters. While float-type flow meters are inexpensive, they have a significant drawback: incidence of light leads to algae growth, which contaminates the system.

The algae layer obstructs the view through the inspection window and leads to a gradual reduction of the flow rate, deterioration of the heat transport from the mould, which results in uncontrollable variations of the part quality.

Injection moulders and injection moulding machine manufacturers who require a water distribution system with excellent wear behaviour and clean production processes benefit from SINGLE SWV because

- the system is maintenance-free,
- the system is self-cleaning,
- the system provides a high functional reliability.

The electronic flow meter and signal processing and monitoring with the SINGLE SC controller provides the following processes:

- fully-automatic metering,
- end-to-end monitoring, reporting and documentation of flow rate and return temperature,
- processes with maximum transparency when used in combination with temperature measurement.

The SINGLE SWV has a very compact footprint and is easily installed, even in small injection moulding machines. Most machine casings provide ample room for the distribution manifolds. The cost difference between the SINGLE SWV water distribution system and conventional float-type flow meters pays off quickly thanks to the system's

- wear-free metering technique,
- maintenance-free components,
- higher metering precision,
- particularly efficient and economical operation,
- high-quality look.

The SINGLE SWV water distribution system is also available with a special stainless steel casing for clean-room production.

The SWV water distribution system used for flow metering in injection moulding machines

SINGLE SWV – Water distribution system for mould-aligned installation in injection moulding machines

Injection moulds with a segmented temperature control require additional mould-aligned internal water distributors. The water distributors available in the market are neither modular nor do they provide reliable flow metering and/or temperature measurement functions. Hence, processors were frequently compelled to use specially constructed customized systems.

The SINGLE SWV water distribution system is a single, particularly compact product that meets all requirements of processors. In addition to water distribution, SINGLE SWV provides the following functions:

- additional flow metering
- and/or additional temperature measurement.

The SINGLE SWV water distribution system is

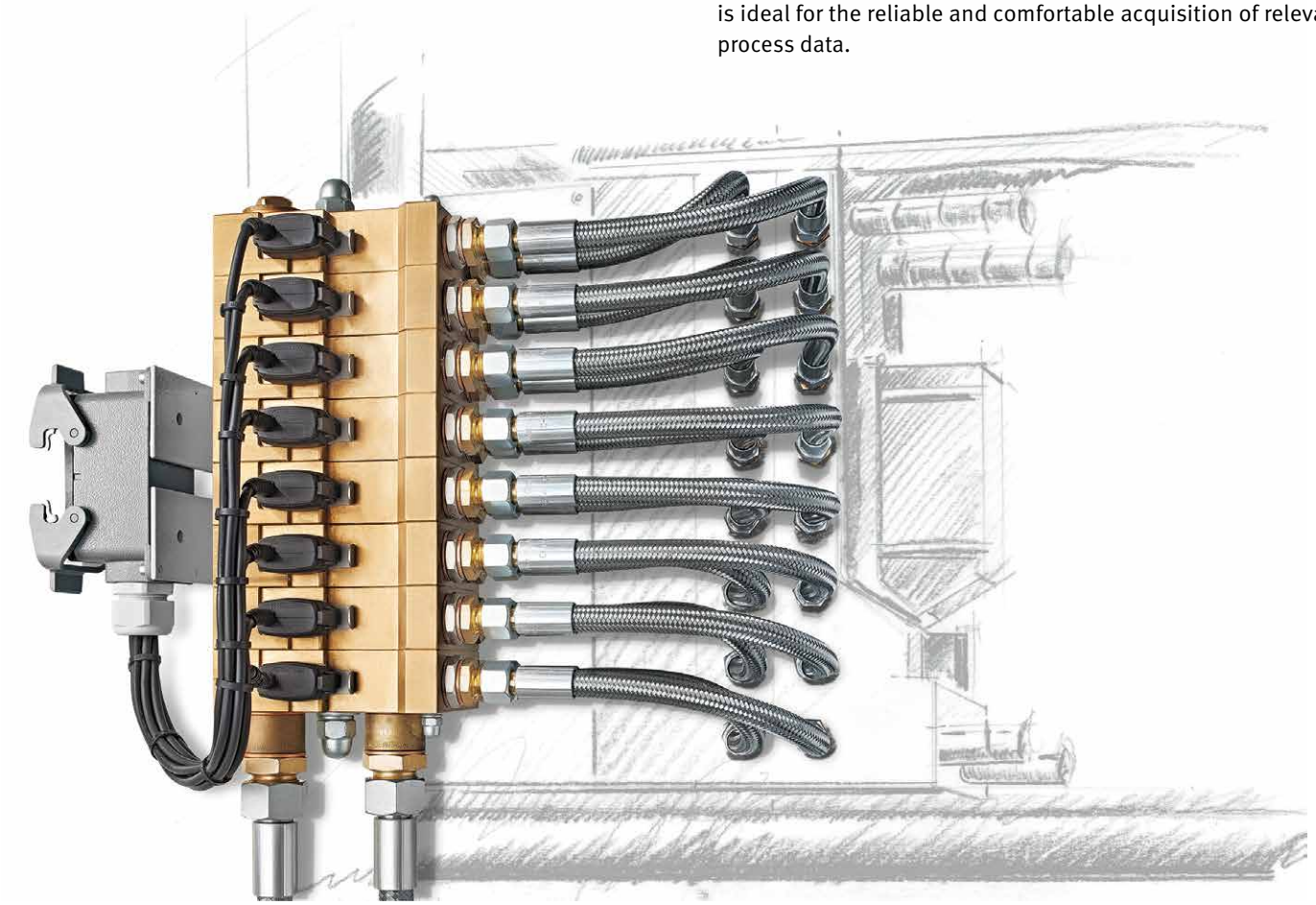
- more compact than conventional distributors,
- allows mould-aligned installation, e.g. on mould platens.

The system is distinguished by

- end-to-end metering
- 100 % monitoring
- documentation

of flow rates and return temperatures.

The system's outstanding features translate into obvious benefits, particularly for moulders catering to the medical engineering, optics and precision engineering segment as well as for manufacturers of high-precision industrial components that meet exacting requirements for clean and transparent production processes. For processors that are compelled to meet stringent documentation requirements, the SINGLE SWV water distribution system is ideal for the reliable and comfortable acquisition of relevant process data.



The SWV water distribution system with 8 temperature control circuits and flow metering

SINGLE
Distribution and measuring systems

EcoFlow

SINGLE flow meters of the DFM4 product lines measure the flow rate of temperature and cooling circuits. For applications using water as a transfer medium, DFM4 monitors the flow rate and measures medium temperatures up to 200 °C. Used for applications with heat transfer oil, the flow meter measures temperatures of up to 350 °C. The DFM4 flow meter offers comprehensive process information as well as monitoring and alarm functions.

In contrast to many conventional flow meters used for temperature control applications, SINGLE DFM4 operates without moving components and measures the flow rate by means of the differential pressure across an orifice plate. Hence, it is virtually maintenance-free and unaffected by contamination.

The flow rate can be displayed in l/min or m³/h as required. The temperature is displayed in °C. A variety of different metering ranges are available for both water and oil as transfer media. Each DFM4 flow meter is delivered with technical documentation including CE mark and factory certification.

Standard equipment

General

- Circulating medium water up to 90 °C
- Completely assembled
- Compact design
- Flow pipe made from stainless steel

Electrical and control equipment

- 2 m connecting cable
- 24 V supply voltage
- Programmable limit values for flow rate and temperature with optical signal and relay output

Design options

- Circulating medium water up to 200 °C (modular design with capillary pipe coil)
- Circulating medium heat transfer oil up to 350 °C (modular design with capillary pipe coil)
- Variety of different metering ranges from 20 to 1,000 l/min max.
- Different hydraulic connections

Options

- Capillary pipe coil for temperatures above 90 °C
- 230 V power supply unit
- Analogue output 4...20 mA for flow rate
- Replication with factory certificate

10/2013 EN

SINGLE Temperiertechnik GmbH, Ostring 17-19, 73269 Hochdorf/Germany, Phone: +49 (0) 7153/3009 - 0, Fax: +49 (0) 7153/3009 - 50, www.single-temp.de