CAVITY EYE
INTELLIGENCE IN MOLDING

Smart Moulding Control
Data sheet

Applicable models: SMC8/16/32/64
For models marketed from 2021.12.01

1. Description

The Cavity Eye **Smart Moulding Control** (SMC) system is responsible for receiving and processing the signals from the Pressure Cells, storing the measured data and managing the input and output signals to the injection moulding machine as well. The self-developed software installed on the PC is capable of is saving the data and visualizing them on the Display. The SMP device receives and processes the pressure cell's signals, then transmits the data to the Switch, which is responsible for the network communication. The SCP device is a special data processing and communication unit, with the role of ensuring the communication between the Cavity Eye pressure measuring system and the injection molding machine.

2. Application

Using the Cavity Eye Smart Moulding Control system, the central production control can be achieved based on cavity pressure measuring in injection moulds.

Fulfills the industry's requirements by having a heavy-duty design. It is specially made for industrial applications.

3. How does it work?

The memory reading/writing, the sensor signal processing and forwarding is accomplished by the SMP device. The mould's cavity pressure is measured by the pressure cells and the signals are received by the SMP, and the processed signals are forwarded to the software on the PC.

The pressure sensor's emitted signals – caused by the excitation – are directly proportional to the force acting on the sensor's measuring pin. Knowing the area of the measuring ejector pin's surface in the cavity, whereat the cavity pressure is acting on, the pressure inside the cavity can be calculated. The pressure values in function of time are shown on a graph of each injection cycle.

The Measuring Plug forwards the data via an UTP cable to a central unit, which consists of a

Switch, a PC and a Display. The Switch is an industrial PoE switch, which provides power to the Plugs by the IEEE802.3af standard. The PC runs the unique Cavity Eye software, which is responsible for visualizing, saving the data, and lets you set the running options.

4. SMC system's contents

a. Hardver components
- PC
- Switch
- Monitor
- SMP8/32
- SCP
- SCS

b. Softwares
- Cavity Eye OS

c. Accessories
- Power supply cables
- UTP-B cabels, 5/10/15/20 meters (you can request in different sizes)
- Other cables needed for functioning
- Other accessories needed for fixing

5. UTP-B cable

The UTP-B cable is available in 5, 10, 15, 20 metres. The cabling is shown on the figure above. Two pin pairs are providing the data, the other two pairs are responsible for power supply (PoE).

The UTP-B cable is connected to the Plug on one end, and the other end is connected to the Switch, which provides power supply. The PoE Switch devices creates the opportunity for the SMP and SCP to have Power over the Ethernet cable.

6. Types

There are multiple options available in case of SMC systems, depending on how many sensor signals needs to be measured. The SMC8 consists Plugs (SMP8) that can be used up to 8 sensors. Over 8 sensors and up to 16 sensors, the SMC16 is the right choice. Over 16 sensors, the SMC32 and SMC64 depending of the number of sensors, but then the system consists SMP32 and SMS32-A.

There is a unique SMC type for moulds with rotary plate. This is identical to the SMC16, the only difference is this edition contains longer UTP cables.

The SMC has a portable edition too, this is called SMC Mobile.

7. Item number information

SMC ☐-☐

Number of sensors

0-8 pieces of sensors	8
9-16 pieces of sensors	16
17-32 pieces of sensors	32
33-64 pieces of sensors	64

Other marking

Default	-
Rotary Plate*	RP
Mobile	MOBILE

*Rotary Plate edition available for SMC16 and SMC64 only.

8. Technical data:

SMC		
Weight		
SMC8	g	6450
SMC16	g	6800
SMC32	g	6650
SMC64	g	7100
SMC...-MOBILE	g	SMC... +500g
Operating temperature range	°C	0 - 50
Power supply	V; Hz	230V 50Hz
Protecting rating	IEC 60529:1989	IP54
PC memory	GB	4
PC storage	GB	min. 60
Max. comsumption	W	60
Operating Voltage PoE output	IEEE 802.3af	48 VDC
Monitor input connection		mini-USB