

Pressure Cell Data Sheet

PC15 – discontinued product
PC26

Description

The Cavity Eye developed water and shock resistant sensors. The company offers sensors in different diameters (15 and 26 mm), which have a maximum load range of 1 to 40 kN.

Cavity Eye uses only indirect sensors. From our experiences, the indirect measurement is much more precise, than the direct measurement. Using indirect measurement results in no need for sensor maintenance during the whole lifetime of the mould. Thanks to the sensor geometry we designed, the sensor installation is as easy as it gets!

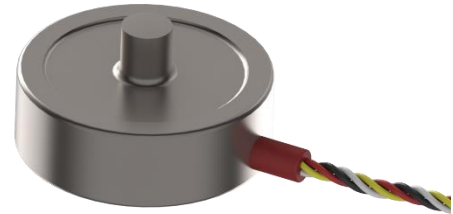
Application

The sensors offered by Cavity Eye were developed for cavity pressure measurement in injection moulds.

Fulfilling the industry's requirements, the sensors are designed heavy-duty, with water and shock resistance, thus applicable for the everyday use of pressure measuring.

How does it work

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.

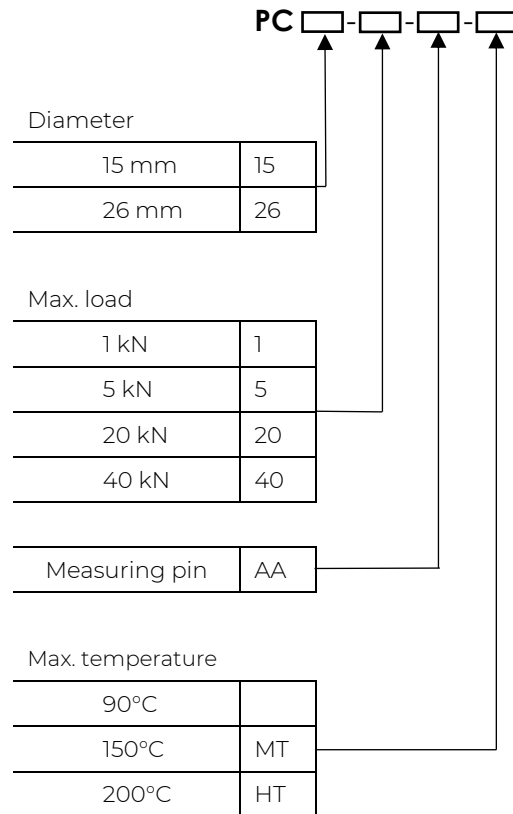


Technical Data

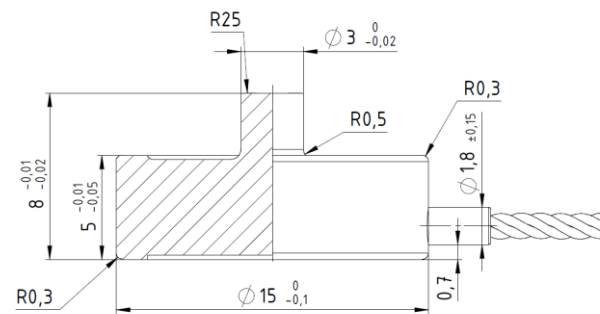
| PC15 | | |
|-----------------------------|----------------|------------|
| Weight | g | 21 |
| Diameter | mm | 15 |
| Height | mm | 8 |
| Measuring pin diameter | mm | 3 |
| Hardness | HRC | 45 |
| Operating temperature range | | |
| PC ... | °C | -40 - +90 |
| PC ... -MT | °C | -40 - +150 |
| PC ... -HT | °C | -40 - +200 |
| Excitation voltage | V | 5..12 |
| Protection rating | IEC 60529:1989 | IP67 |
| Maximum load | | |
| PC15-1-... | kN | 1 |
| PC15-5-... | kN | 5 |
| Wire color codes | | |
| GND | | Black |
| Excitation | | Red |
| Differential signal + | | White |
| Differential signal - | | Yellow |
| Wire cross section | | |
| PC ... | AWG | 30 |
| PC ... -MT | AWG | |
| PC ... -HT | AWG | |
| Linearity deviation | % | <1 |
| Bend at max. load | mm | <0,05 |

| PC26 | | |
|-----------------------------|----------------|------------|
| Weight | g | 35 |
| Diameter | mm | 26 |
| Height | mm | 12 |
| Measuring pin diameter | mm | 7 |
| Hardness | HRC | 45 |
| Operating temperature range | | |
| PC ... | °C | -40 - +90 |
| PC ... -MT | °C | -40 - +150 |
| PC ... -HT | °C | -40 - +200 |
| Excitation voltage | V | 5...12 |
| Protection rating | IEC 60529:1989 | IP67 |
| Maximum load | | |
| PC15-1-... | kN | 20 |
| PC15-5-... | kN | 40 |
| Wire color codes | | |
| GND | | Black |
| Excitation | | Red |
| Differential signal + | | White |
| Differential signal - | | Yellow |
| Wire cross section | | |
| PC ... | AWG | 30 |
| PC ... -MT | AWG | |
| PC ... -HT | AWG | |
| Linearity deviation | mm | <0,05 |
| Bend at max. load | mm | <0,05 |

Item number information



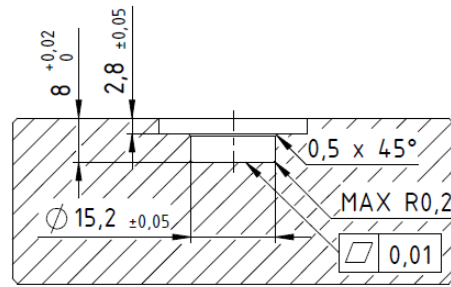
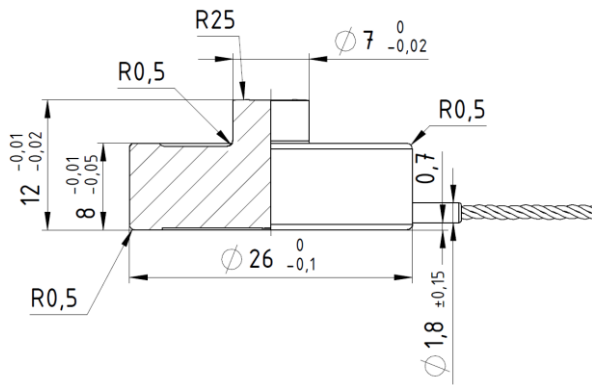
Dimensions



1. Figure: PC15 Sensor

Types

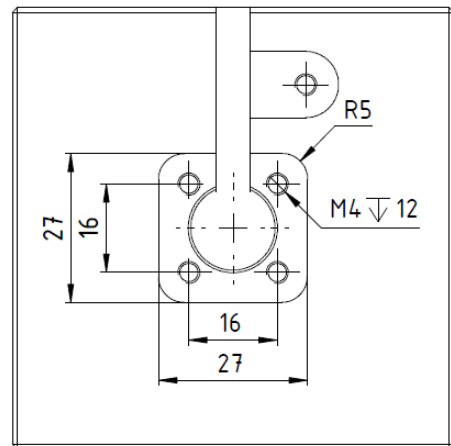
Our sensors exist in 2 different diameters (15 mm and 26 mm), and 4 different maximum loads (1, 5, 20, 40 kN). The normal temperature sensors can be used up to 90°C environment. In case of moulds tempered on higher temperature, there are Medium and High Temperature Sensors, which can be used up to 200°C.



2. Figure: PC26 Sensor

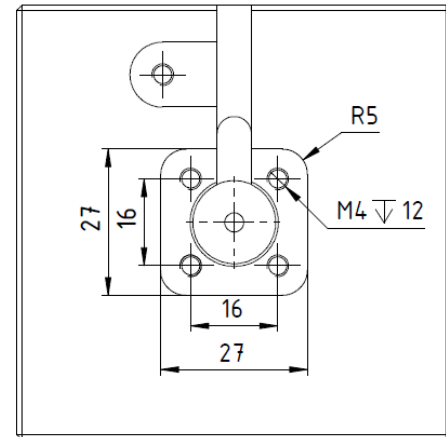
Installation

Our sensors are used for indirect pressure measurement in all instances, with the help of a transfer pin. The sensors can be placed both in the fixed and the moving side of the mould. The sensors are installed in the moving side clamping plate in 90% of all cases, in line with the ejection pin's axis. The measuring surface of the sensor connects to the ejector pin indirectly through a transfer pin. If there is no option for transfer pin, then a static pin is used. Thereby almost every injection mould can be prepared for using the Cavity Eye system.



3. Figure: PC15 front installation

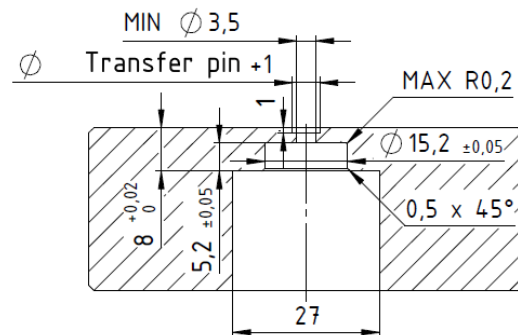
There are 2 types of installing option for the Cavity Eye sensors. The so called front installation, where the sensor pockets are machined from the direction of the parting line. The sensor pockets design and dimensions can be seen in the 3. and 5 figure in case of PC15 and PC26 respectively.



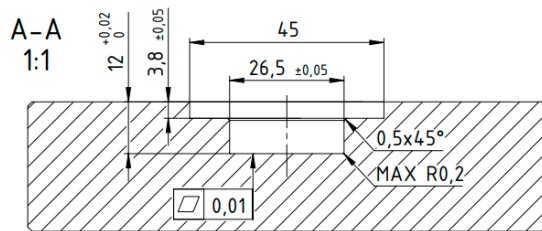
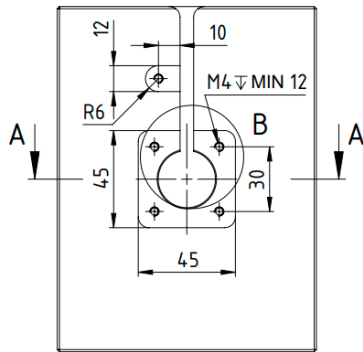
In case of rear installation, the plate is machined from the clamping unit's side. The sensor pockets design and dimensions can be seen in the 4. and 6. figure in case of PC15 and PC26 respectively.

Optional accessories

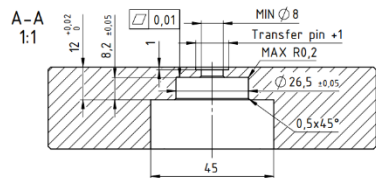
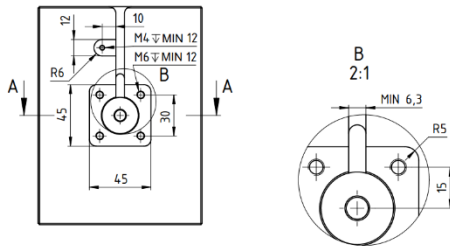
| Name | Item number |
|------------------------|-------------|
| Front plate PC15 | PC15-FP |
| Back plate PC15 | PC15-BP |
| Front plate PC26 | PC26-FP |
| Back plate PC26 | PC26-BP |
| M4x12 screw (DIN 7991) | |



4. Figure: PC15 rear installation



5. Figure: PC26 front installation



6. Figure: PC26 rear installation