

INSTALLATION MANUAL

vibro-meter®

Pressure measurement chains using
CPxxx piezoelectric pressure sensors



This document contains important information about products that are intended for use in potentially explosive atmospheres.

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Table 4-2 lists the permitted value for the diagnostic component (DC) of the output signal from an IPC707 without diagnostics.

Table 4-2: Permitted values for the diagnostic component (DC) of the output signal from an IPC707 without diagnostics

Diagnostic component (DC) value	Measurement chain OK?	Description
12 mA _{DC} ±0.5 mA _{DC} or 7 V _{DC} ±0.5 V _{DC}	Yes	Normal operation
Other current or voltage value	No	Problem with the measurement chain (sensor, cabling and/or signal conditioner)
<p>Notes</p> <p>The output signal from an IPC707 can be either a current (mA) or a voltage (V) signal, depending on the configured transfer function and output signal.</p> <p>Although the output signal from an IPC707 has a maximum tolerance of ±0.5 mA_{DC} or ±0.5 V_{DC} to allow for operation in all circumstances (including strong electromagnetic interference), a typical tolerance of ±0.2 mA_{DC} or ±0.2 V_{DC} is seen during normal operating conditions.</p>		

4.4.1.4 Sensor compatibility

In order to support the correct operation of an IPC707 signal conditioner with diagnostics, the CPxxx piezoelectric pressure sensor, the cabling and the complete measurement chain must meet specific electrical requirements (see 4.4.1.5 Valid IPC707 measurement chains).

Table 4-3 lists the CPxxx piezoelectric pressure sensors that are compatible with an IPC707 signal conditioner with diagnostics.

Table 4-3: CPxxx piezoelectric pressure sensors compatible with an IPC707 signal conditioner with diagnostics

CPxxx piezoelectric pressure sensor	Part number (PNR)	Comments / Notes
CP104	143-104-000-101	
CP211	143-211-000-x2x	CP211 sensors with an integral MI cable >0.5 m (19.7") are not compatible
CP216	143-216-000-x2x	CP216 sensors with an integral MI cable >0.5 m (19.7") are not compatible
CP232	143-232-000-11x 143-232-000-22x	CP232 sensors with an integral MI cable >0.3 m (11.8") are not compatible
CP238	143-238-000-02x	
Other		Contact Meggitt for further information
<p>Notes</p> <p>In general, CPxxx piezoelectric pressure sensors with integral mineral-insulated (MI) cables longer than 0.5 m (19.7") are not compatible with an IPC707 signal conditioner with diagnostics. This is because the conductors of mineral-insulated (MI) cables are usually not individually shielded, resulting in a relatively high capacitance between the conductors of the cabling that prevents the detection of problems with the sensor (as the capacitance of the cabling becomes larger than and "swamps" the capacitance of the sensor).</p>		