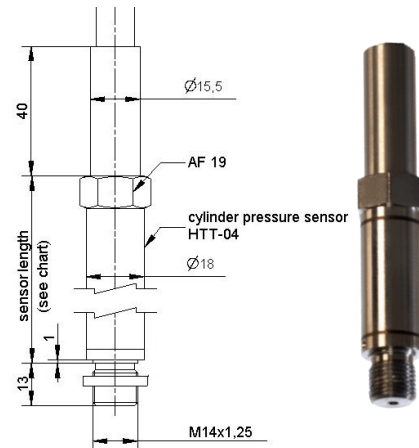# Cylinder Pressure Sensor HTT-04®

for On-line Combustion control

Cylinder pressure sensor for on-line combustion control on diesel- and gas engines for increasing engine performance and optimised engine control.

Characteristics

• Designed life expectancy of 16,000 h

• Digital electronic with event storing

• Very good thermodynamic performance

Application:

Closed loop control on internal combustion engines e.g. knock detection, cylinder balancing, MIP calculation, start of combustion, NOx control

Technical data

Measuring range pressure	0...300 bar
Over pressure static	800 bar. 1200 bar and 1600 bar
Natural frequency sensor head	> 100 kHz
Frequency range SCU	2 kHz (others on request)
Thermal shock 1500 RPM pmi=10bar	< +/- 0,5 bar
Accuracy	$\leq$ 1% Full scale
Max. temperature at measuring cell	300 °C (short time 1 min 350°C)
Temperature range of SCU	-40 °C ... + 75 °C
Supply voltage	18...32 VDC
SCU current consumtion	$\leq$ 50 mA (continuous operation); 250 mA (switch-on peak)
Output signal range	4...20 mA
Electrical connector	Plug DIN M12
Thread	M14 x 1,25
Dimension sensor	52 mm , Ø 18 mm
Dimension electronic	115 mm x 18 mm
Tightening torque	25 Nm
Weight incl. electronic	325 g

General specifications

Degree of protection	IP 67 (EN 60529)
CE approval	2004/1008/EG EN 61000-6-2 EN 61000-6-4 EN 61326-1
ATEX type approval	Group II, Category 3G

Optimum sensor life is achieved at an average temperature at the measuring element of 200 - 250 °C.
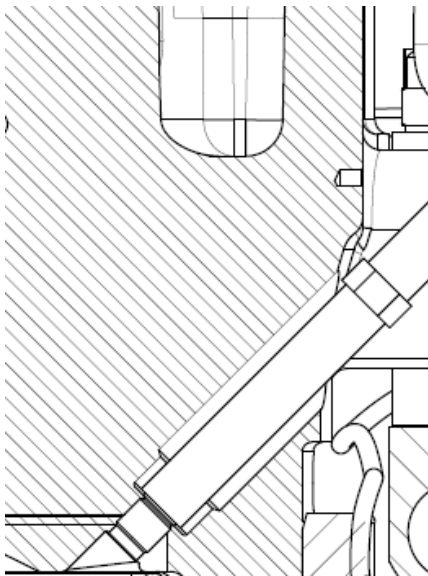
The life expectancy of the sensor has been designed so that the lifetime of 16.000 h or more can be achieved in a gas engine. at 1500 rpm.

Mounting

The sensor should be installed close to the combustion chamber, the length of the pressure bore between sensor and combustion chamber depends mainly on engine speed.
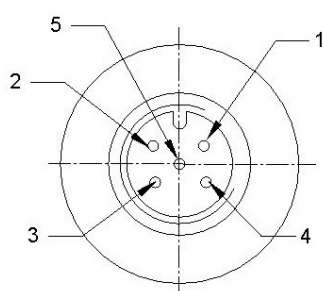
Generally there are two possibilities for the installation position of cylinder pressure sensors:

Head mounted or set-back mounted.

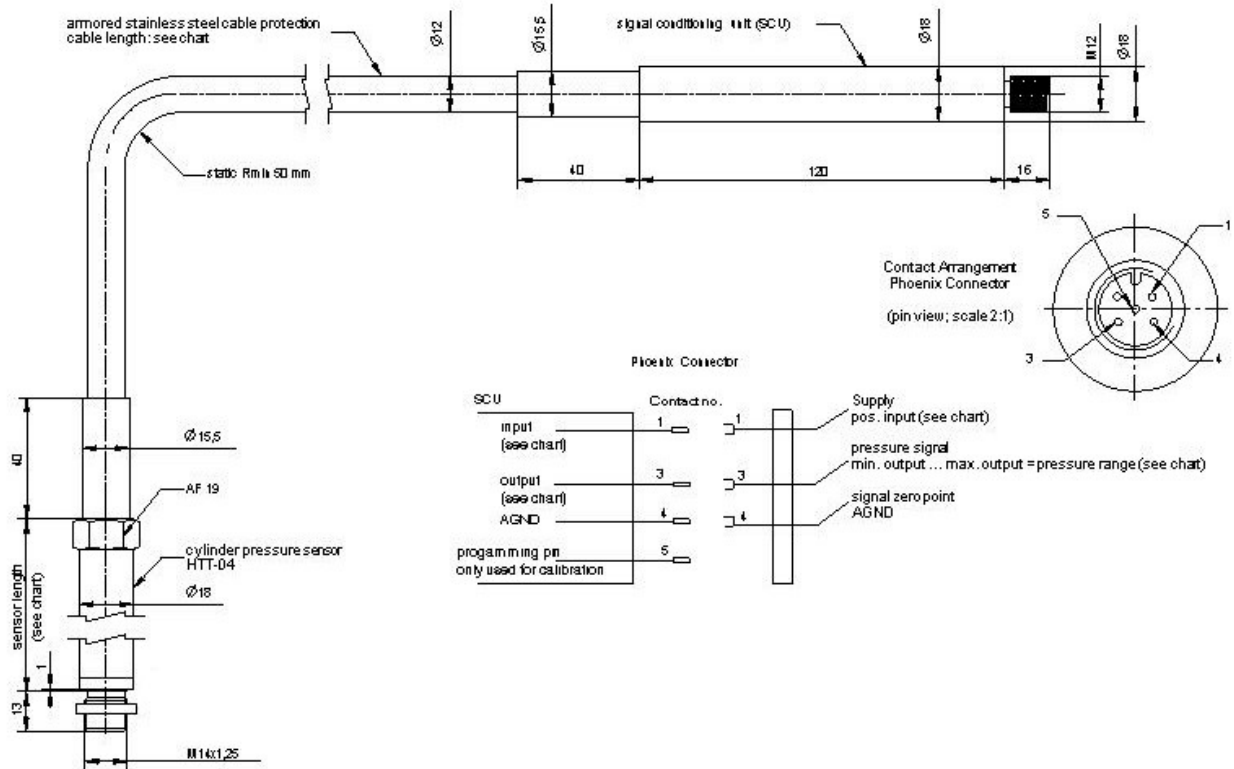Head mounted installation near to combustion chamber

Connector

1 = supply

3 = pressure signal

4 = signal zero point AGND

5 = programming pin (only used for calibration)

2 = not connected

HTT is a registered trademark of imes gmbh

armored stainless steel cable protection cable length: see chart

signal conditioning unit (SCU)

static Rmin 50 mm

Ø12   Ø15,5   Ø18   M12   Ø18

40   120   16

Ø15,5

AF 19

cylinder pressure sensor
HTT-04
Ø18

sensor length
(see chart)

M14x1,25

Contact Arrangement
Phoenix Connector
(pin view; scale 2:1)

Phoenix Connector

SCU

input
(see chart)

output
(see chart)

AGND

programming pin
only used for calibration

Contact no.

1

3

4

5

Supply
pos. input (see chart)

pressure signal
min. output ... max. output = pressure range (see chart)

signal zero point
AGND

Product No.	Pressure range	Sensor length	Cable length	Static overpressure
IW-6237	0 - 300 bar	52 mm	0,4 m	1200 bar
IW-6238	0 - 300 bar	52 mm	0,4 m	1600 bar
IW-6236	0—300 bar	52 mm	0,4 m	800 bar

Optional Accessories	Product No.
Protection cover	IW-6210
Connecting cable 5m	IW-4110
Connecting cable 10m	IW-4111