



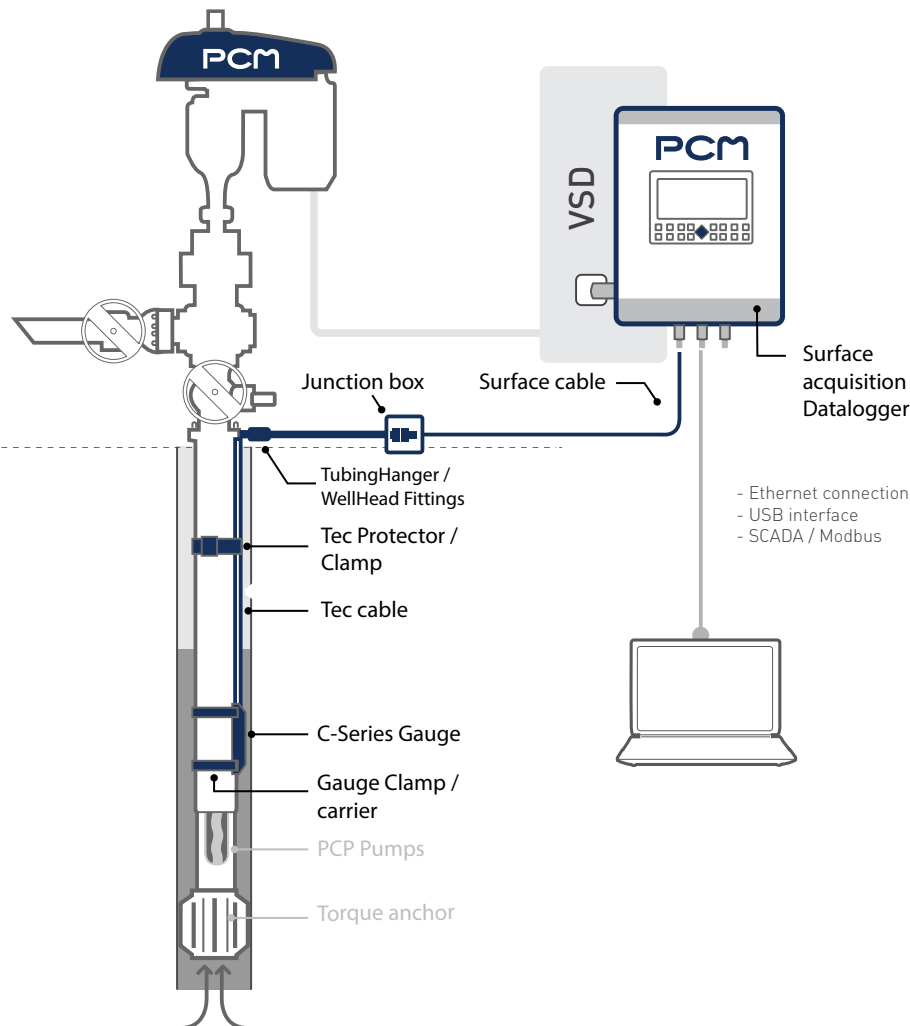
# DOWNHOLE GAUGES

THE PERMANENT MONITORING SOLUTION FOR YOUR PCP OPERATIONS

DOWNHOLE / TUBING STRING

C-series gauges provide real time downhole monitoring with reliable and durable information. Designed specifically to monitor and protect most common PCP troubles such as pump off, over temperature, deadheading, C-series help maintain production and avoid undesirable downtime.

Single gauge will record PCP intake well data pressure / temperature (and vibration), Dual gauge will add data from PCP discharge. Gauge is connected to the tubing string through carrier or clamp. The information is transmitted to the surface through a Tubing Encapsulated Cable (TEC) which is clamped all the way up to the surface to the tubing string. Surface panel will convert the Frequency Shift Keying (FSK) signal into values that could be stored and connected to VSD, SCADA system & laptop.



## BENEFITS

- Improve MTBF and reduce work over
- Automatic alarms and safe trips.
- Prevent dry running of your PCP's
- PID regulation of your VSD to maintain a constant dynamic level
- Real-time view of your well and PCP conditions
- History in case of PCP's failure



## GAUGES SPECIFICATIONS

GAP Capacitance sensors made for PCP's application are reliable, rugged, durable and easy to install and operate. FSK signal technology.

	C-4000		C-4500		C-5000		C-5500	
<b>CONDITION</b>								
<b>Type</b>	Single P/T (intake)		Single P/T & Vibration (intake)		Dual P/T (intake & discharge)		Dual P/T & Vibration (intake & discharge)	
<b>Depth</b>	< 1000m	> 1000m	< 1000m	> 1000m	< 1000m	> 1000m	< 1000m	> 1000m
<b>PARAMETERS</b>								
<b>Max. Pressure</b>	1500PSI	5000PSI	1500PSI	5000PSI	1500PSI	5000PSI	1500PSI	5000PSI
Accuracy / Resolution	0,1% / +0,1PSI	0,1% / +0,1PSI	0,1% / +0,1PSI	0,1% / +0,1PSI	0,1% / +0,1PSI	0,1% / +0,1PSI	0,1% / +0,1PSI	0,1% / +0,1PSI
<b>Max. T° C</b>	150°C		150°C		150°C		150°C	
Accuracy / Resolution	1,5% / 0,1°C		1,5% / 0,1°C		1,5% / 0,1°C		1,5% / 0,1°C	
<b>Vibration range</b>	NA		X&Y 0-18G		NA		X&Y 0-18G	
Accuracy / Resolution			1% / 0,055G				1% / 0,055G	
<b>Housing material</b>	17-4PH		17-4PH		17-4PH		17-4PH	
								
	GAUGE CLAMP for single gauges				GAUGE CARRIER for dual gauges			

## DOWNHOLE CABLE

Tubing Encapsulated Cable (TEC) protects electrical components from the pressure and corrosive effects of the downhole environment. Polymeric 11x11mm encapsulation provides mechanical protection of the TEC.

- **Vertical well** = Bare cable ¼" OD or polymeric encapsulation 11x11mm
- **Deviated well** = Polymeric encapsulation 11x11mm recommended.

## SURFACE PANEL

Interface for FSK gauge signal : analog, digital, or Modbus connection that allow easy connection to VSD and/or SCADA system.

- FIC-4000 surface readout assembly, No screen, Modbus 485 and power supply
- DATALOGGER-4200 surface readout and datalogger, includes 4.3" touchscreen LCD, Modbus 232/485, USB port, removable 1GB data storage (1 year storage) and power supply.



DATALOGGER-4200