

# PICOTURN® PTCM V1.1

## Compact Controller

Accurate Technologies Inc. (ATI) offers the PICOTURN PTCM rotational speed sensor for turbochargers. Compared to optical or magnetic sensing systems, the PICOTURN system is proven as a rugged, reliable, simple, accurate and cost effective solution. The system's functional principle is a 1MHz pulse induction with eddy current discrimination, using a compressor mounted solenoid sensor that detects and counts compressor vanes individually, generating a standard TTL/CMOS output signal.

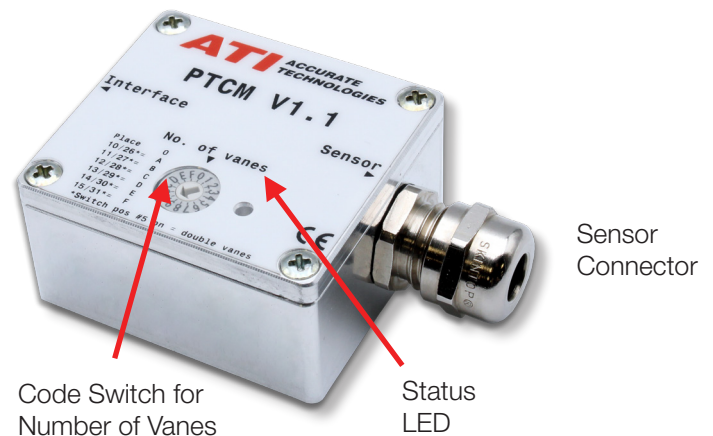
The PICOTURN PTCM consists of a sensor with a 1.5m cable, a compact, ruggedised signal-conditioning box, plus a lead for output and power supply. Both the sensor and PTCM box are rated as IP67 proof if connected and installed as per PICOTURN's recommendations, making it ideal for underbonnet fitments. The PTCM is capable of compressor wheel speed measurement up to 400,000 rpm with a minimum operating speed of 200 rpm.

The PICOTURN system benefits from high sensitivity, allowing a large distance between sensor and the rotating vanes in the range of 1 mm at 0.6mm vane thickness. Various sensors are available to accommodate numerous user cases differentiated by the length and thread of the sensor head. The PTCM-H series benefits from enhanced sensitivity, enabling use with titanium wheel and other critical applications where higher temperatures are a priority.

### Features

- Compact size
- Supports all standard and H-type PICOTURN 1G sensors
- IP67 rating
- Adjustable number of vanes
- Designed for underbonnet use

Power & Interface  
Cable Connector



Code Switch for  
Number of Vanes

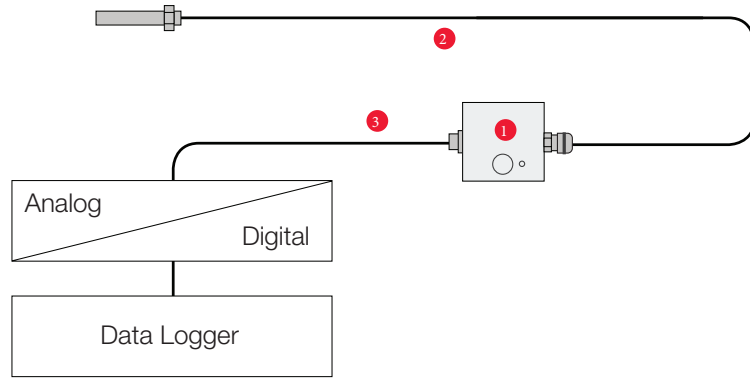
Status  
LED

Specifications	Description
Dimensions	45mm x 50mm x 25mm (when sensor connected)
Protection Class	IP67
Number of Vanes	1 to 31
Digital Output	TTL/CMOS (One impulse per N vanes, N = 1 to 31)
Analog Output	0.5 to 4.5V
Temperature	-40°C to +85°C
Supply Voltage	9 to 30 volts DC

Sensor Specifications		
Sensor Tip Element Temperature	Standard sensor	-40°C to +250°C* (482°F)
	H-type sensor	-40°C to +270°C* (518°F)
Sensor Body Dimensions	Fine thread M5x0.5, with various lengths 25 to 60mm	
	Standard thread M5x0.8, with various lengths 40 to 70mm	
Protection Class	IP67	

\* Excess temperature tolerated for short periods

# System Overview



## PTCM Order Information

Part No.	Product	Description
221030002	PTCM ATI V1.1	New reduced sized Controller/Signal Conditioning box with standard interface
221040002	PTCM-L ATI V1.1	New reduced sized Controller/Signal Conditioning box with LEMO interface connector

## Sensors

1G Sensors (interchangeable passive sensors)				Description		
H-types for higher temperature and higher sensitivity: -40°C to +270°C		Standard type: -40°C to +250°C		Sensor length / Thread length	Diameter	Cable length
Part No.	Product	Part No.	Product			
220180003	PTSM-H 5.3	220150008	PTSM 5.3	60 mm / 54 mm	M5 x 0.8	1.5m
220180004	PTSM-H 5.5	220150006	PTSM 5.5	46 mm / 40 mm	M5 x 0.8	1.5m
220180005	PTSM-H 5.6	220150012	PTSM 5.6	75 mm / 69 mm	M5 x 0.8	1.5m
220180006	PTSM-H 5F.2	220150004	PTSM 5F.2	41 mm / 25 mm	M5 x 0.5	1.5m
220180007	PTSM-H 5F.3	220150014	PTSM 5F.3	56 mm / 40 mm	M5 x 0.5	1.5m
220180008	PTSM-H 5F.5	220150016	PTSM 5F.5	76 mm / 60 mm	M5 x 0.5	1.5m

## Accessories

Part No.	Product	Description
220320001	PTCM-1.5-nc	System interface power cable, open ends
220320002	PTCM-3.0-nc	System interface power cable, open ends
220320003	PTCM-1.5-BNC	System interface power cable, BNC connectors for signals, banana jack connectors for power
220320004	PTCM-L	System Cable LEMO open ended
220330001	PTCM Mounting Plate	Mounting plate including screws
220030002	PTSM 5F.x Clamping nut	For fine thread sensors -SM5F.x
220360004	ATI PTCM coverfoil	Faceplate
220370001	PTCM coverseal	Seal for faceplate

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