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ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

Transducer Signal Conditioning and Interface Modules



Features

- Accurate and repeatable
- LVDT and Half bridge Transducer Compatible
- Various Output Options
  - Voltage Outputs
  - Current Outputs (4-20mA)
  - TTL Outputs

Description

Solartron Metrology's range of conditioning electronics offers the user the ability to connect and configure LVDT and Half Bridge inductive sensors into an almost infinite number of combinations.

The range comprises the OD products which are housed in boxes in metal or plastic enclosures and can be easily mounted, the DRC conditioning module which s a DIN rail mount option, in line products such as the BICM and the ATM TTL convertor which provides differential square wave signals perfect for simple PLC interfaces.

Customised or special products will always be considered when there is not an exact fit in our standard product range.

For optimum performance in terms of transducers and electronics please consider Solartron Metrology's Orbit®3 Digital Measurement System which out performs the conventional analogue LVDT and Half Bridge sensors in all aspects.

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OD Series

The OD series of conditioning units is used to interface with Solartron's sensors to provide different functions to suit different applications.

The OD2 is a two wire 4-20 mA signal conditioner. It is designed for signal transmission over long distances due to low noise susceptibility.

The OD4 (OD5 is a mains powered equivalent) is powered form a single 10 to 30V DC supply. The outputs are fully adjustable for offset and gain.



DRC

The DRC is a DIN rail mounted version of the OD4



ATM TTL Convertor

TTL RS422 is one of the most commonly used methods of communicating between Linear displacement sensors and Control or data Acquisition systems. Most sensors which offer this are incremental sensors and can loose position if moved to quickly. Solartron's ATM is an absolute system and can never loose position even if power is interrupted



BICM In Line Module

The BICM provides a simple low cost in line conditioning unit. This is ideal when the transducer set up is unlikely to require adjustment. The design is robust for harsh environments. An IP67 version is available



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Technical Specifications

	OD2	OD4	OD5	DRC	BICM	
Power Requirement						
Input Voltage VDC	13-42	10-30	N/A	10-30V	±15	24
Input Voltage VAC	N/A	N/A	90-264	N/A	N/A	N/A
Input Current (mA)	<30	140 at 10V 50 at 30V	250	160 at 10V 70 at 30V	±12	24
Frequency (Hz)	N/A	N/A	47-63	N/A	N/A	N/A
Transducer Interface						
Primary voltage (Vrms)	0-9		3		1.2 – 21	
Primary frequency (kHz)	5 or 13	2.5 or 5		5,10 or 13	2.5 to 20	
Input Range	30-530mV/V[1]		55 to 5000mV		up to 3.5	
Input Load (kΩ)	2	2, 10, 100		2, 100	100	
Options	Forward and reverse			see note 2		
Output						
Voltage Output VDC			Up to ±10			
Current Output mA	4-20	Up to ±20 into 150Ω load				
Output Ripple	<38µA rms		<1 mV rms		<14 mV rms	
Output Offset	Up to 100% on maximum gain (coarse and fine adjustment)					
Temperature Coefficient Gain (%FSO/°C)			<0.01		<0.03	
Temperature Coefficient Offset (%FSO/°C)			<0.01		<0.02	
Warm Up (minutes)	15 minutes					
Linearity (%FSO)	<0.02				<0.1	
Bandwidth (-3dB) (Hz)	25			500Hz, 1khz		
Environmental (Note 3)						
Storage Temperature	-40 to +80		-20 to +80		-20 to +80	
Operating Temperature	0 to +60					
IP rating	65	40	40	None	40/67	40
Mechanical						
Transducer Connections	Terminals	Din Connector		Terminals	Solder tag or	
Power connections	Terminals	IEC320 C14			factory fit for IP67	
Weight						
Material	ABS	Painted Aluminium Box		Plastic	Plastic or	
Mounting	Holes			DIN rail	In line	

Note 1: For transducers with sensitivity > 250mV/V, an adjustable attenuator is required- contact sales
Note 2; Transducer is connected via external screw terminal user can therefore configure options
Note 3: For higher environmental levels(and other custom options) contact sales office

ATM Module: TTL Compatible Conditioning Unit that WILL NOT loose count when the sensor is moved quickly unlike incremental sensors. 500kHz Output rate



Technical Specification

Measurement

Transducer types	All Solartron Displacement Transducers
Accuracy (%FSO)	<0.25
Resolution (x4 interpolation)	0.1
Repeatability	transducer dependent

Electrical

Power	+5 ±0.25 VDC @ 100 mA
Output Signal	A and B, /A and /B TTL square waves RS422 levels
Output frequency (kHz)	50, 100, 125, 250, & 500 (factory selectable)
Bandwidth	100 Hz

Environmental (electronics)

Sealing	IP43
Operating temperature (°C)	0 to +60
Storage temperature (°C)	-20 to +70

Refer to product manual 502724 for details of operation – contact sales office/web site

For 3D drawings, please contact sales.solartronmetrology@ametek.co.uk

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Solartron pursues a policy of continuous development. Specifications in this document may therefore be changed without notice.

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