

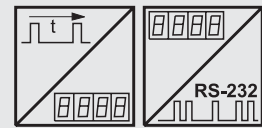
PRODIS-TDC

Digital Process Meter

for Time-of-Flight Sensors



- For Sensors with pulse output:
- Automatic sensor parameter upload at power-on – no calibration necessary
- Integrated sensor supply
- 6-digit LED display
- RS-232 interface
- Optional 4 comparator outputs
- Easy programming



Description

PRODIS-TDC displays measurement values of magnetostrictive position sensors, programmable scaling is provided to display units like mm or inch. The request signal will be sent to the sensor periodically. The time between the start pulse and the stop pulse will be counted by a high-resolution time-digital-converter (TDC). When used with POSICHRON sensors the calibration parameters of the sensor will be uploaded to the meter at power-on. This avoids a calibration when the sensor has been changed. A tare function or programming lock can be activated with two control terminals. Sensor excitation is supplied from the meter. Optional comparator functions with 4 NPN open-collector outputs are available, additional 2 of them have relay output.

Specifications		
Display		6 - digit, 7-segment-LED, 14 mm high, decimal point programmable
Excitation voltage/current		24 V DC $\pm 10\%$ /150 mA, residual ripple 1% _{ss} 85-250 V AC/180 mA max.
Sampling rate		1 ... 5 ms, adjustable
Sensor excitation		24 V DC/300 mA or 5 V DC/500 mA
Start pulse input		INIT, INIT (RS422)
Measurement pulse input		STSP, (RS422)
Control inputs		2 control inputs, active low
Comparator outputs (option)	Relay NPN	250 V AC/5 A, 30 V DC/5 A 24 V max./50 m A to GND
Connection		Terminal strip 12-pole, excitation 3-pole
Operating temperature		-10 ... +40 °C
Storage temperature		-20 ... +85 °C
Weight		24 VDC: 250 g approx., 230 VAC: 400 g approx.
Protection class		Front IP60, rear IP40
Humidity		Max. 95% R.H, non condensing
Safety of equipment		Directive 73/23/EWG: DIN EN 61010:1994-03
Electromagnetic compatibility		Directive 89/336/EWG

Order code PRODIS-TDC

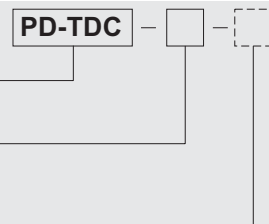
Model Name

Excitation Voltage

24VDC = 24 V DC
230VAC = 85...250 V AC

Comparator (option)

REL2



Order example: PD - TDC - 24VDC

PRODIS-TDC

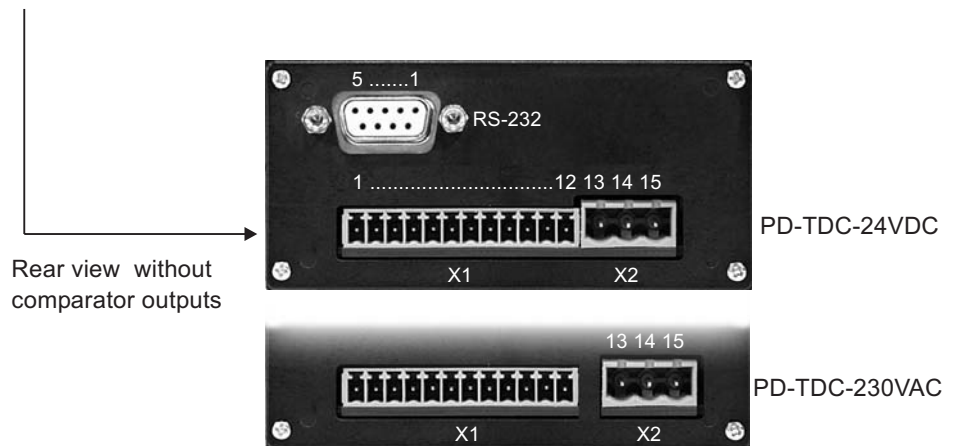
Digital Process Meter

for Time-of-Flight Sensors



Programmable Parameters / value range	Divisor, Multiplier, offset, limit values	0 up to 999999
	Other programmable parameters	Wave speed, average function, edge evaluation, use with several magnets, difference evaluation, decimal point position, display brightness

Wiring basic equipment	Signals	Connector X1 Pin no.	Connector X2 Pin no.
		Sensor excitation +U _B	1
	Sensor excitation 0 V (GND)	2	
	Control input terminal1, active low	3	
	Control input terminal2, active low	4	
	Not used	5/6	
	INIT output request pulse	7	
	INIT output request pulse	8	
	STSP input measurement pulse	9	
	STSP input measurement pulse	10	
	Do not connect!	11	
	GND	12	
	PD-TDC-24VDC		
	Excitation +24 V		13
	Excitation 0 V (GND)		14
	PD-TDC-230VAC		
	Excitation		13, 15
	Protective ground		14



RS-232 interface	Level	RS-232: ±8 V, galvanically isolated	
	Data format	1 startbit, 8 data bits, 1 stopbit, no parity	
	Transmission rate	9600 Baud	
	Signals	Connector X3 Pin no.	DSUB Pin no.
	TxD	17	2
	RxD	16	3
	GND	18	5

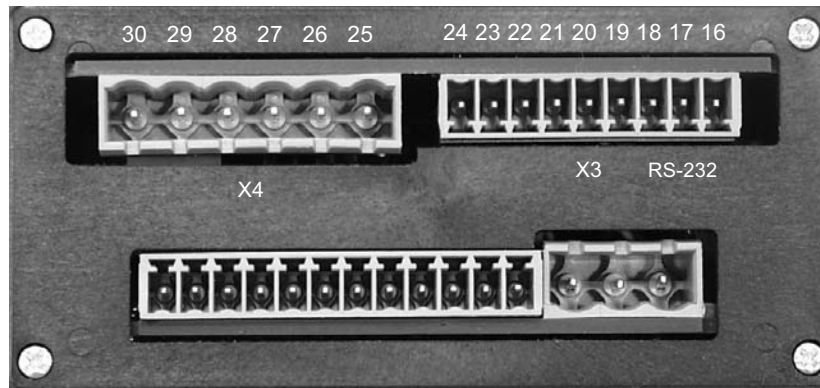
PRODIS-TDC

Digital Process Meter

for Time-of-Flight Sensors

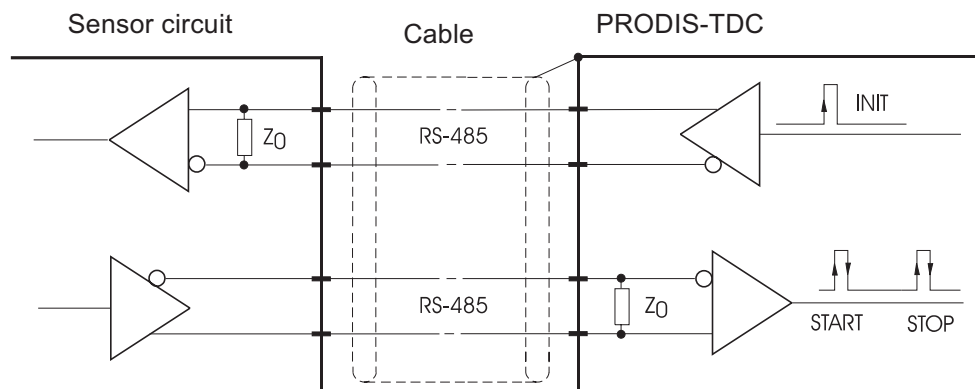


Rear view with comparator outputs



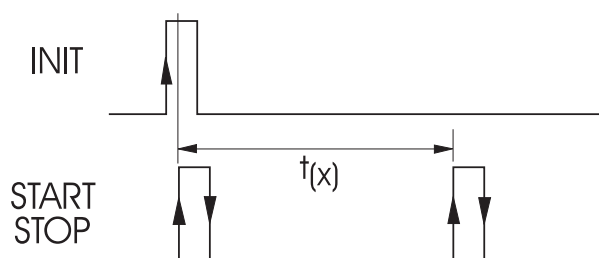
Comparator function (option)	Comparator	Comparator output					
		NPN collector	Connector X3 pin no.	Relay	Connector X4 pin no.	LED	
Comparator 1	NPN1		20	Relay 1	25	LED1	
				NO			27
				NC			26
Comparator 2	NPN2		21	Relay2	28	LED2	
				NO			30
				NC			29
Comparator 3	NPN3		22				
Comparator 4	NPN4		23				
	NPN GND		24				
	NPN U _B (+24V)		19				

Signals



PRODIS-TDC generates a request pulse via the INIT line. The position sensor responds with a START and a STOP signal.

$$\text{Position value } x = t(x) \cdot v_s$$



To calculate the position value the time interval $t(x)$ must be multiplied with the conversion factor v_s on the type label. When ASM POSICHRON[®] sensors are used the conversion factor v_s will be uploaded at power-on.

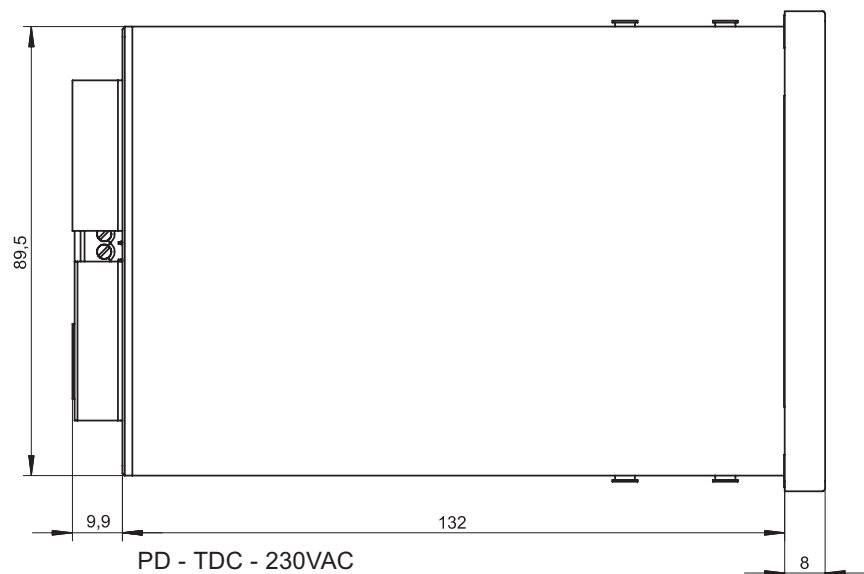
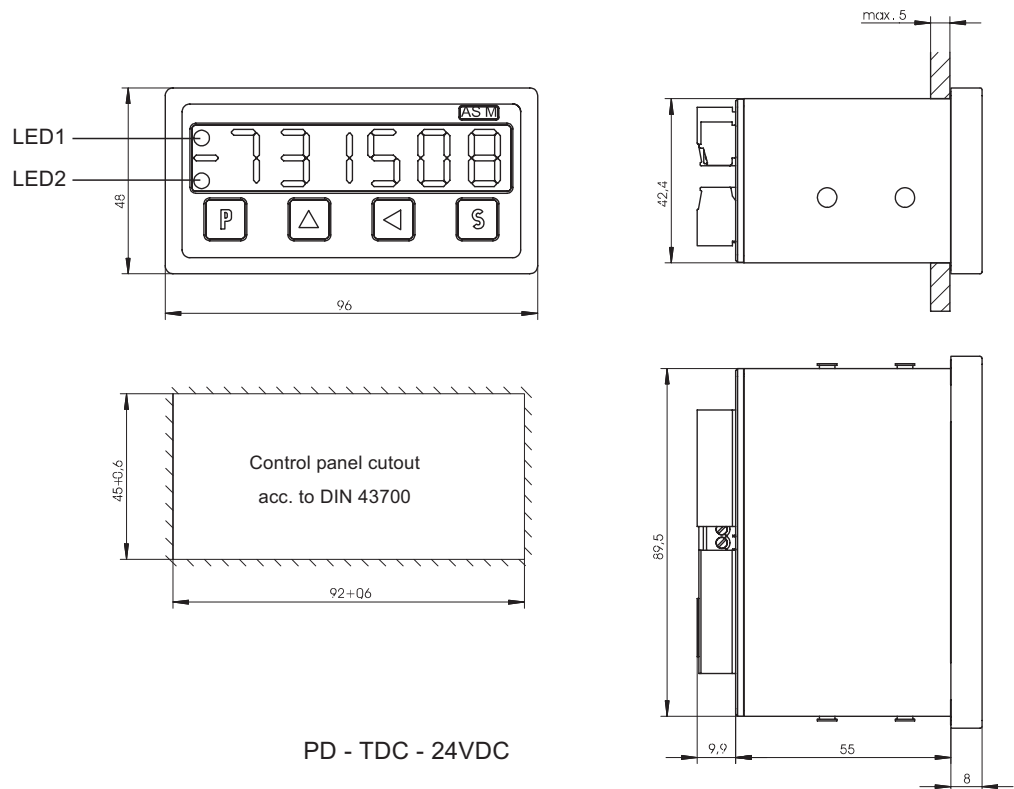
PRODIS-TDC

Digital Process Meter

for Time-of-Flight Sensors



Outline drawing



Dimensions informative only
For guaranteed dimensions consult factory!