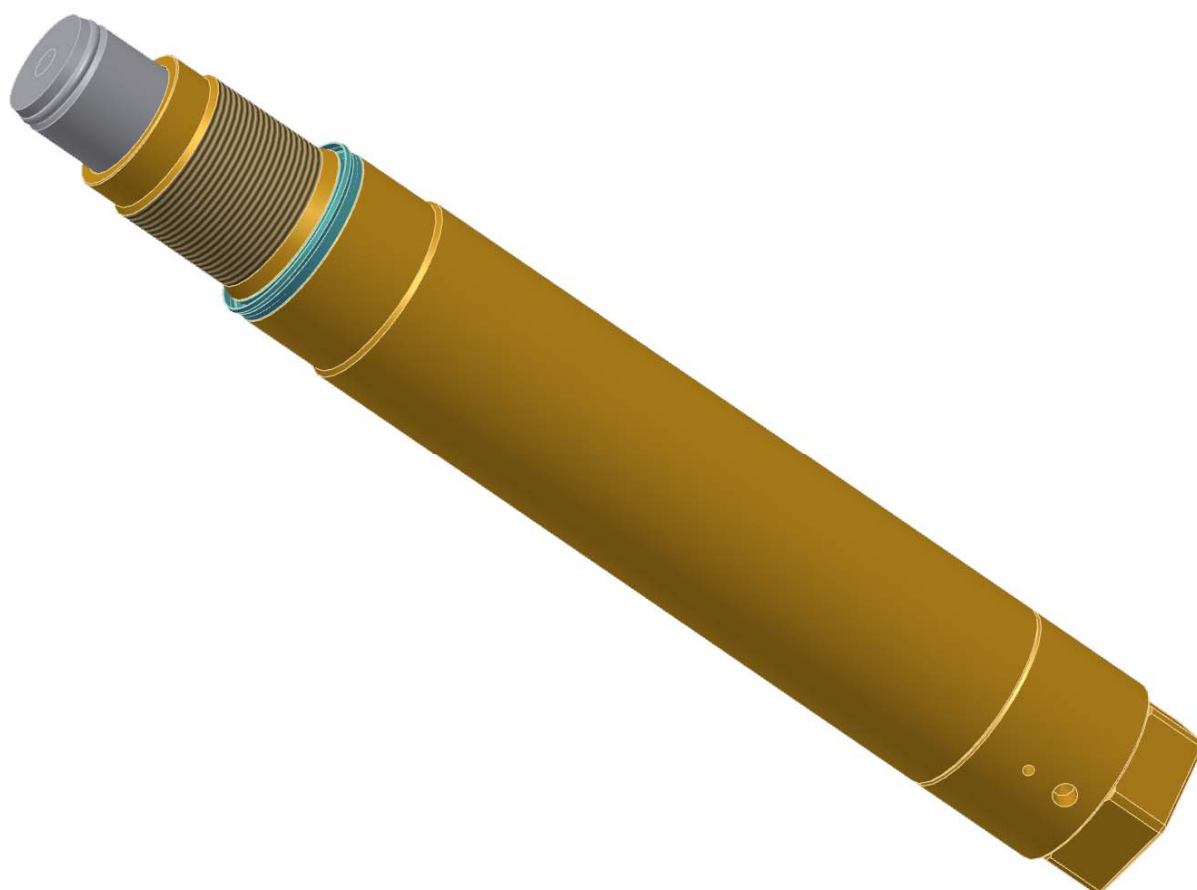


dametric 

TDC-Sensors



DESCRIPTION

Valmet 

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1 General

A TDC-sensor is used to measure the plate gap in a pulp refiner. The sensor is designed to measure a gap up to 3 mm (0.12 inch) and up to a temperature of 220°C (428°F).

There are several models, each designed for a refiner model where the length, mounting thread and sealing varies. A set of refiner dependent holders in bronze are made but the actual measuring tip is identical for all sensors. The tip is mounted in line with the stator plate surface and is made of stainless steel. The sensor is worn together with the plates and is replaced at each segment plate change.

The basic measuring principle is inductive which means the steel in the segment plates must have magnetic conductive properties. The procedure for measurement is unique and designed for this special environment within the grinding zone and has nothing mutual with standard inductive sensors.

There are two basic types of TDC sensors, with or without a temperature measurement element.

Sensors with the element have a “T” in the article number and this is the standard for all new refiners. We still however deliver older types without the temperature measurement. The sensors cannot be mixed up due to different poles in the connector.

2 Technical description

Measurement range: 0-3.00 mm (0-0.12 inch). Segment material must be of a type with relatively good reluctance, maximum allowed magnetism is 20 Gauss in a position 10 mm above the segment surface.

Temperature range: 0-220°C (0-428°F)

Wear limit: App. 3 mm (0.12 inch)

Material: Stainless steel, bronze

Connection: 6 or 7-pole bayonet connector

Weight: See below

Size: See below

3 Article number and Valmet article number

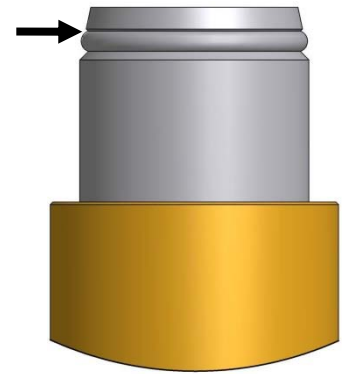
Article number	VAL number	SKC number	Mounting thread (mm)	Weight (kg)	Length (mm)	Temperature measurement
TDC-IZT	0123064	8580821	M36*1	2.7	414	yes
TDC-IZ	0123058	6922852	M36*1	2.7	414	no
TDC-IZ70T	0122717	7400342	M36*1	2.7	414	yes
TDC-IZGT	0123063	8580807	M36*1	3.3	410	yes
TDC-IZG	0123062	6911179	M36*1	3.3	410	no
TDC-I76T	0123054	9432064	M36*1	5.3	476	yes
TDC-OZT	0123098	8580814	-	0.5	63	yes
TDC-OZGT	0123097	8580845	M36*1	1.4	170	yes
TDC-O76T	0123096	8580838	M36*1.5	2.4	300	yes
TDC-O76TL	0191538	-	M36*1.5	2.9	375	yes
TDC-O76	210505-01		M36*1.5	2.4	300	no
TDC-IZT	0123064	8580821	M36*1	2.7	414	yes
TDC-IZAT	0123061	8580852	M36*1.5	2.7	414	yes
TDC-IZNT	0131401	9223091	M36*1	2.5	414	yes
TDC-46JT	0131411	8915795	M52*1.5	1.9	286	yes
TDC-L46T	0123065	8602211	M36*1.5	1.7	242	yes
TDC-CFT	0123056	8821683	M36*1.5	1.4	190	yes
TDC-200T	0123055	9114320	M36.1.5	2.7	300	yes

4 Valmet refiner types – Article number

<i>Refiner</i>	<i>Article number</i>	<i>Article number</i>
<i>CD</i>	<i>Flat zone</i>	<i>Conical zone</i>
RLP-CD70	TDC-IZT	TDC-OZT
RLP-CD70 (2001 ->)	TDC-IZ70T	TDC-OZT
RGP-CD70, RGP-CD76X	TDC-IZGT	TDC-OZGT
RGP-CD76	TDC-I76T	TDC-O76TL
RGP-CD82	TDC-I76T	TDC-O76T
<i>SD</i>		
RG(P) 42/44, RG 50, RGP 50/54, RGP 60S,		
RGP 46/50, RLP 50/54, RLP 54/58:	TDC-IZT	
RGP 60/65:	TDC-IZAT	
RGP 60S:	TDC-IZNT	
RGP 248/254/258/262/268:	TDC-200T	
<i>Conflo:</i>		
CF-XX:		TDC-CFT
<i>Panelboard:</i>		
L46: (adjustable)	TDC-46JT	
L46:	TDC-L46T	
RGP M48/54/62:	TDC-200T	

5 Wear limit indication

It is important that the sensor is not worn beyond the indicator marked in drawing below. Note that this is after the estimated plate life. A sensor worn beyond this point may result in a plate crash and furthermore affect the refiner security.



6 Sensor winding connection

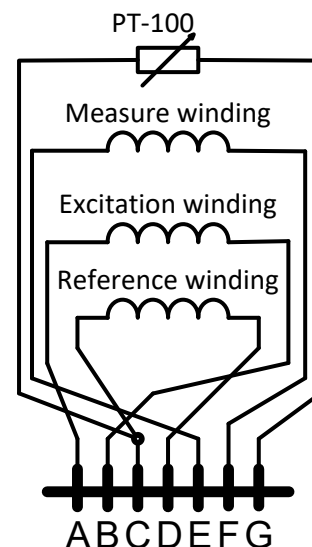
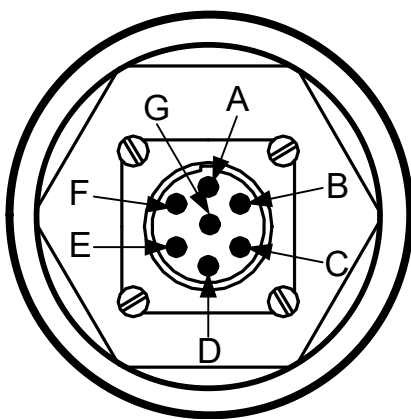
6.1 TDC-xxT (with temperature measurement, 7-pole connector)

The following check is a simple method to determine the DC- connectivity of the windings in the sensor. Since the sensor, however, works with AC-current, this is not a 100 % fail proof test. To make the connectivity-check, a resistance indicator from 0 to 1 M Ω is required. Disconnect the sensor and measure between the contact poles. Check the resistance in the meter-connection first.

Measure	From	To	Resistance
Excitation-winding	A	B	$1.0 \pm 0.5 \Omega$
Reference-winding	C	D	$2.0 \pm 0.5 \Omega$
Measurement-winding	E	F	$2.0 \pm 0.5 \Omega$
PT-100-element	C	G	se below
Interconnection	A	C	min 100 k Ω
Interconnection	A	E	min 100 k Ω
Interconnection	C	E	min 100 k Ω
Interconnection	A	Cover	min 100 k Ω
Interconnection	C	Cover	min 100 k Ω
Interconnection	E	Cover	min 100 k Ω

PT-100-element resistance is dependent on the sensor temperature.

Sensor temperature	Resistance
$^{\circ}\text{C}$	Ω
0	100
25	110
50	119
75	129
100	139

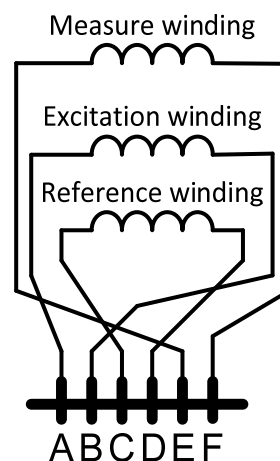
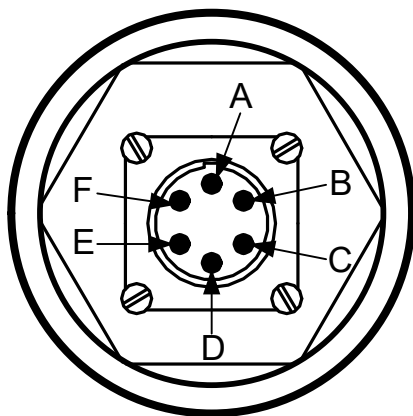


6.2 TDC-xxx (without temperature measurement, 6-pole connector)

The following check is a simple method to determine the DC- connectivity of the windings in the sensor. Since the sensor, however, works with AC-current, this is not a 100 % fail proof test.

To make the connectivity-check, a resistance indicator from 0 to 1 MΩ is required. Disconnect the sensor and measure between the contact poles. Check the resistance in the meter-connection first.

<i>Measure</i>	<i>From</i>	<i>To</i>	<i>Resistance</i>
Excitation-winding	A	B	$1.0 \pm 0.5 \Omega$
Reference-winding	C	D	$2.0 \pm 0.5 \Omega$
Measurement-winding	E	F	$2.0 \pm 0.5 \Omega$
Interconnection	A	C	min 100 kΩ
Interconnection	A	E	min 100 kΩ
Interconnection	C	E	min 100 kΩ
Interconnection	A	Cover	min 100 kΩ
Interconnection	C	Cover	min 100 kΩ
Interconnection	E	Cover	min 100 kΩ



7 CONTACT

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