

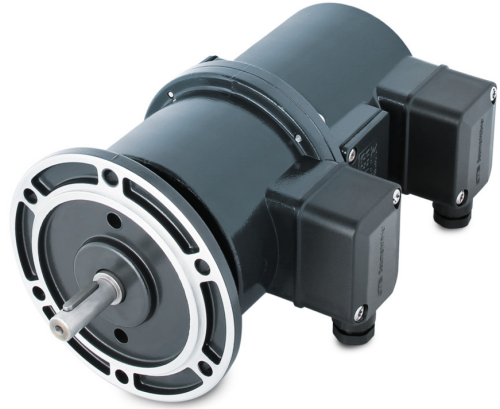
TDP 0,2 + FSL, TDPZ 0,2 + FSL

Tachogenerator/twin tachogenerator with integrated centrifugal switch

Solid shaft with EURO flange B10 or housing foot B3

Overview

- Low response time
- Open circuit voltage 10...150 mV per rpm
- EURO flange B10 or housing foot B3
- Redundant tachogenerator output (TDPZ)
- High signal quality due to patented LongLife technology
- Recognition of sense of rotation possible via control
- Mechanical speed monitoring based on centrifugal force



Technical data

Technical data - electrical ratings

Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3

Technical data - electrical ratings (centrifugal switch)

Switching accuracy	± 4 % ($\Delta n = 2 \text{ rpm/s}$); 20 % ($\Delta n = 1500 \text{ rpm/s}$)
Switching deviation	≤ 3 % (cw-ccw rotation)
Switching hysteresis	40 % of switching speed
Switching outputs	1 output, speed control
Output switching capacity	≤ 6 A / 230 VAC; ≤ 1 A / 125 VDC (EAC: < 50 VAC / 75 VDC)
Minimum switching current	50 mA

Technical data - electrical ratings (tachogenerator)

Reversal tolerance	≤ 0.1 %
Linearity tolerance	≤ 0.15 %
Temperature coefficient	± 0.05 %/K (open-circuit)
Isolation class	B
Calibration tolerance	± 1 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	TDP: 12 W (speed ≥ 3000 rpm) TDPZ: 2x 3 W (speed ≥ 3000 rpm)
Armature-circuit time-constant	< 75 µs (TDP) < 40 µs (TDPZ)
Open-circuit voltage	TDP: 10...150 mV per rpm TDPZ: 20...100 mV per rpm

Technical data - mechanical design

Size (flange)	ø115 mm
Shaft type	ø11 mm solid shaft
Admitted shaft load	≤ 60 N axial ≤ 80 N radial
Flange	EURO flange B10 Housing foot B3
Protection EN 60529	IP 55
Speed (n)	≤ 1.25 · ns
Range of switching speed (ns)	850...4500 rpm ($\Delta n = 2 \text{ rpm/s}$)
Torque	1.5 Ncm
Rotor moment of inertia	1.4 kgcm ² (TDP) 1.5 kgcm ² (TDPZ)
Material	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-30...+130 °C
Resistance	IEC 60068-2-6 Vibration 5 g, 10-2000 Hz IEC 60068-2-27 Shock 150 g, 1 ms
Connection	2x terminal box
Weight approx.	3.1 kg (TDP) 3.5 kg (TDPZ)
Approval	CE

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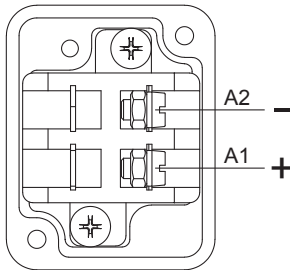
General information

The constructive design of the centrifugal switch is its use as a switch with positive break function. It must not be used as a continuous switch (switching cycles greater than 500 during service life).

Terminal assignment

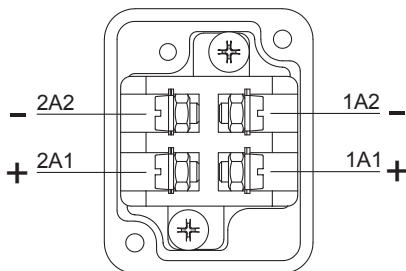
View A (see dimension)

Connecting terminal tachogenerator TDP
Polarity for positive rotating direction



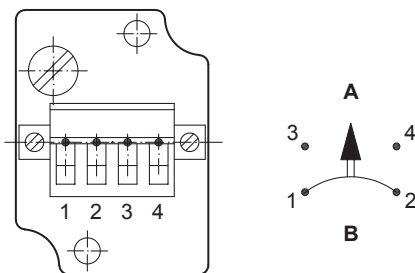
View A (see dimension)

Connecting terminal twin tachogenerator TDPZ
Polarity for positive rotating direction



View B (see dimension)

Connecting terminal centrifugal switch



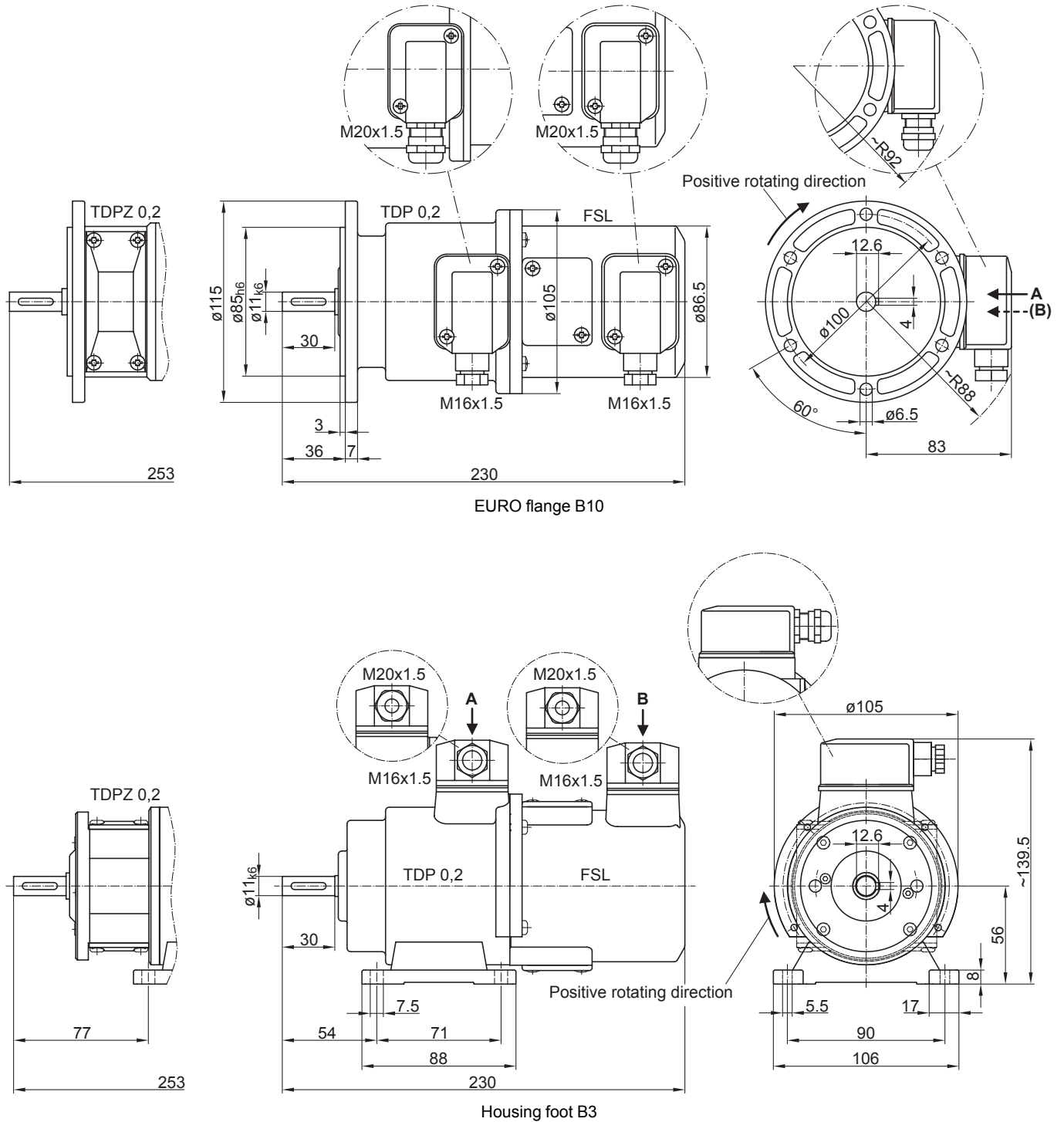
A = make contact, **B** = break contact

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Dimensions



TDP 0,2 + FSL, TDPZ 0,2 + FSL

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Ordering reference

	TDP	#	#####	#####	+ FSL	#####
Product						
Tachogenerator + centrifugal switch	TDP					
Design						
Tachogenerator						
Twin tachogenerator		Z				
Open-circuit voltage						
10 mV per rpm (not available for TDPZ)			0,2LT-6			
20 mV per rpm			0,2LT-7			
30 mV per rpm			0,2LT-10			
40 mV per rpm			0,2LT-5			
60 mV per rpm			0,2LT-4			
100 mV per rpm			0,2LT-3			
150 mV per rpm (not available for TDPZ)			0,2LT-1			
Mounting type						
EURO flange B10					B10	
Housing foot B3					B3	
Version speed switch						
Mechanical centrifugal switch						+ FSL
Switching speed (ns)						
850...949 rpm ($\Delta n = 2$ rpm/s) ⁽¹⁾						6 ...
950...1099 rpm ($\Delta n = 2$ rpm/s) ⁽¹⁾						5 ...
1100...1299 rpm ($\Delta n = 2$ rpm/s) ⁽¹⁾						4 ...
1300...1799 rpm ($\Delta n = 2$ rpm/s) ⁽¹⁾						3 ...
1800...2499 rpm ($\Delta n = 2$ rpm/s) ⁽¹⁾						2 ...
2500...4500 rpm ($\Delta n = 2$ rpm/s) ⁽¹⁾						1 ...

(1) Please specify the exact switching speed in addition to the part number (factory setting).

Data according to type

Type	Open-circuit voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0-3000	0-6000	0-n _{max}			
	U ₀ [mV/rpm]	R _L [kΩ]	R _L [kΩ]	R _L [kΩ]	n _{max} [rpm]	R _A (20°C) [Ω]	L _A [mH]
TDP0,2 LT-6	10	≥0.1	≥0.3	≥0.9	10000	3	6
TDP0,2 LT-7	20	≥0.3	≥1.2	≥3.3	10000	11	23
TDP0,2 LT-10	30	≥0.7	≥2.7	≥7.5	10000	26	50
TDP0,2 LT-5	40	≥1.2	≥5	≥13.5	10000	47	90
TDP0,2 LT-4	60	≥2.7	≥11	≥30	10000	99	200
TDP0,2 LT-3	100	≥7.5	≥30	≥30	6000	271	550
TDP0,2 LT-1	150	≥16	---	≥30	4000	630	1260

Twin tachogenerator with redundant output
(The data refer to each of the two tachogenerator outputs)

TDPZ0,2 LT-7	20	≥1.2	≥4.8	≥14	10000	19	45
TDPZ0,2 LT-10	30	≥2.7	≥11	≥30	10000	42	103
TDPZ0,2 LT-5	40	≥4.8	≥20	≥54	10000	70	170
TDPZ0,2 LT-4	60	≥11	≥44	≥120	10000	160	390
TDPZ0,2 LT-3	100	≥30	≥120	---	6000	445	1080

Superimposed ripple (for $\tau_{RC} = 0.7$ ms): ≤0.5% (peak-peak) ≤0.2% (rms)

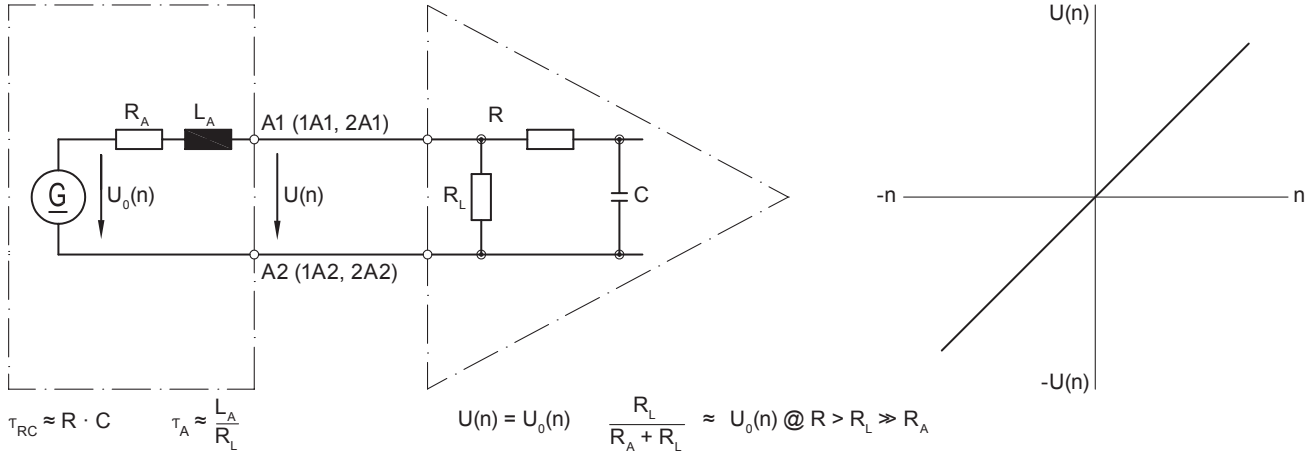
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Equivalent circuit diagram

Tachogenerator



Polarity for positive rotating direction (see dimension) / A1 (1A1, 2A1): + (VDE) / A2 (1A2, 2A2): - (VDE)

Accessories

Mounting accessories

- Spring disk coupling K 35 (shaft ø6...12 mm)
- Spring disk coupling K 50 (shaft ø11...16 mm)
- Spring disk coupling K 60 (shaft ø11...22 mm)