

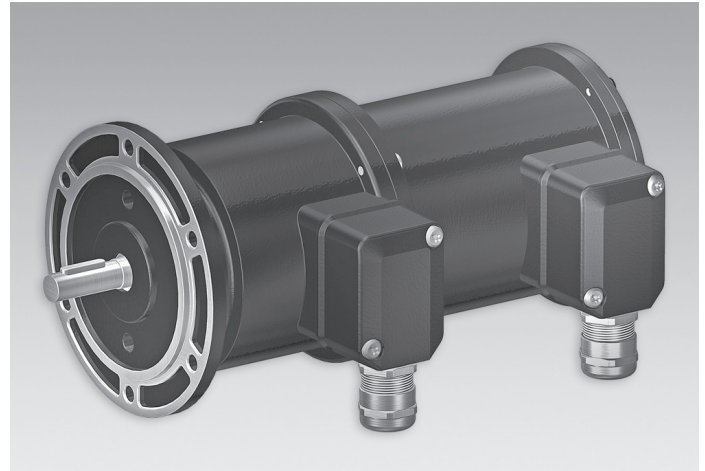
TDP 0,2 + ESL 93, TDPZ 0,2 + ESL 93

Tachogenerator/twin tachogenerator with integrated electronic speed switch

Solid shaft with EURO flange B10 or housing foot B3

Overview

- Low response time
- Open circuit voltage 20...100 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
- Electronic speed monitoring
- Circuit breaker with up to three selectable threshold speeds



Technical data

Technical data - electrical ratings

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

Technical data - electrical ratings (speed switches)

Voltage supply	12 VDC \pm 10 %
Consumption w/o load	\leq 5 mA
Switching accuracy	\pm 4 % (\leq 1500 rpm) \pm % ($>$ 1500 rpm)
Switching hysteresis	= 30 % of switching speed
Switching outputs	3 outputs, speed control
Current each output	40 mA (DC)
Switching delay time	\leq 40 ms

Technical data - electrical ratings (tachogenerator)

Reversal tolerance	\leq 0,1 %
Linearity tolerance	\leq 0,15 %
Temperature coefficient	\pm 0,05 %/K (open-circuit)
Isolation class	B
Calibration tolerance	\pm 1 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	TDP: 12 W (speed \geq 3000 rpm) TDPZ: 2x 3 W (speed \geq 3000 rpm)
Armature-circuit time-constant	$<$ 75 μ s (TDP) $<$ 40 μ s (TDPZ)
Open-circuit voltage	TDP: 10...150 mV per rpm TDPZ: 20...100 mV per rpm

Technical data - mechanical design

Size (flange)	\varnothing 115 mm
Shaft type	\varnothing 11 mm solid shaft
Admitted shaft load	\leq 60 N axial \leq N radial
Flange	EURO flange B10 Housing foot B3
Protection DIN EN 60529	IP 55
Speed (n)	\leq 5000 rpm
Range of switching speed (ns)	200...5000 rpm
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	-20...+85 °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.	3,2 kg (TDP) 3,4 kg (TDPZ)
Approval	CE

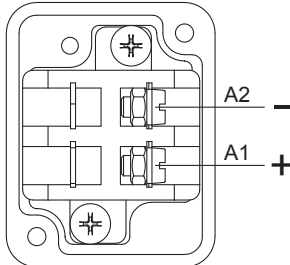
TDP 0,2 + ESL 93, TDPZ 0,2 + ESL 93

Tachogenerator/twin tachogenerator with integrated electronic speed switch
Solid shaft with EURO flange B10 or housing foot B3

Terminal assignment

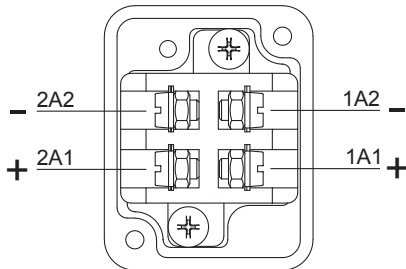
View A (see dimension)

Connecting terminal tachogenerator TDP
Polarity for positive rotating direction



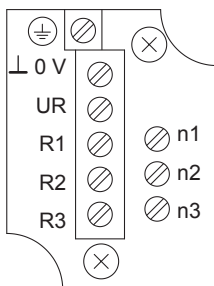
View A (see dimension)

Connecting terminal twin tachogenerator TDPZ
Polarity for positive rotating direction



View B (see dimension)

Connecting terminal speed switch ESL 93

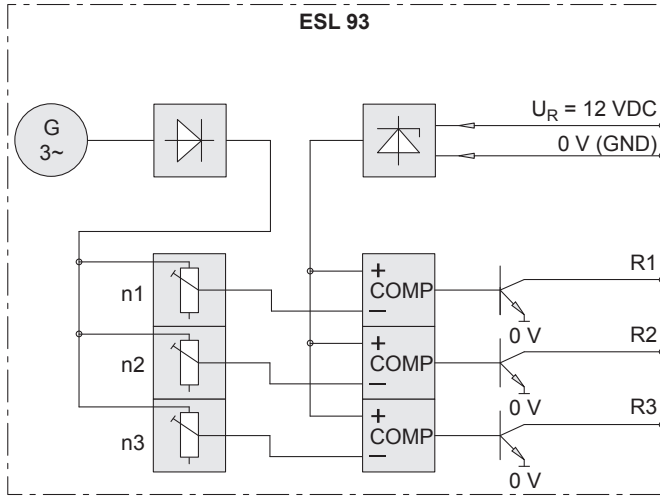


TDP 0,2 + ESL 93, TDPZ 0,2 + ESL 93

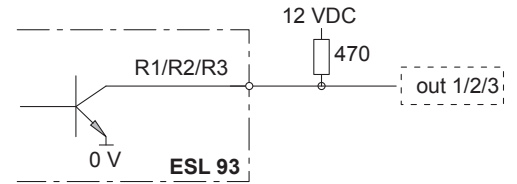
Tachogenerator/twin tachogenerator with integrated electronic speed switch

Solid shaft with EURO flange B10 or housing foot B3

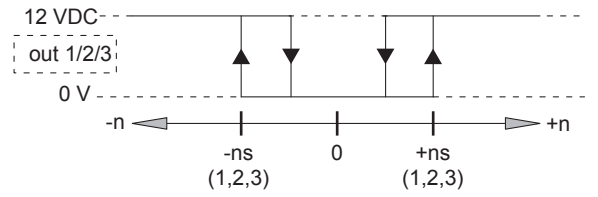
Block circuit diagram



Recommended output circuit



Switching characteristics



n = speed
ns = adjusted switching speed

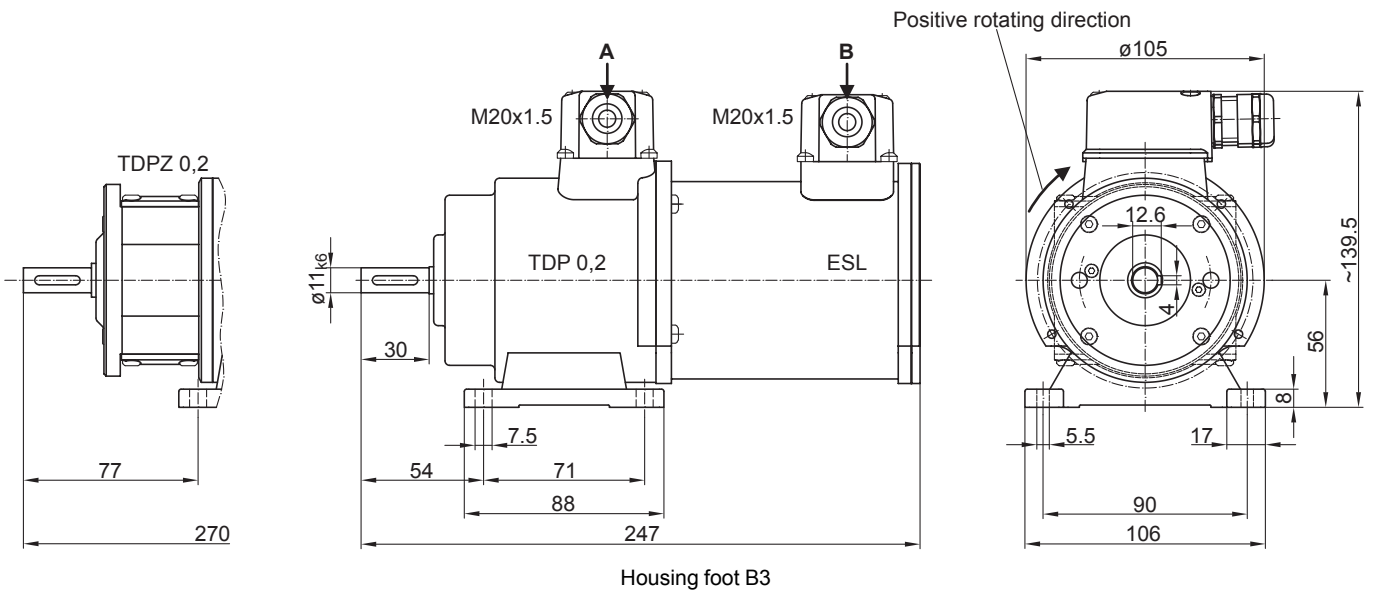
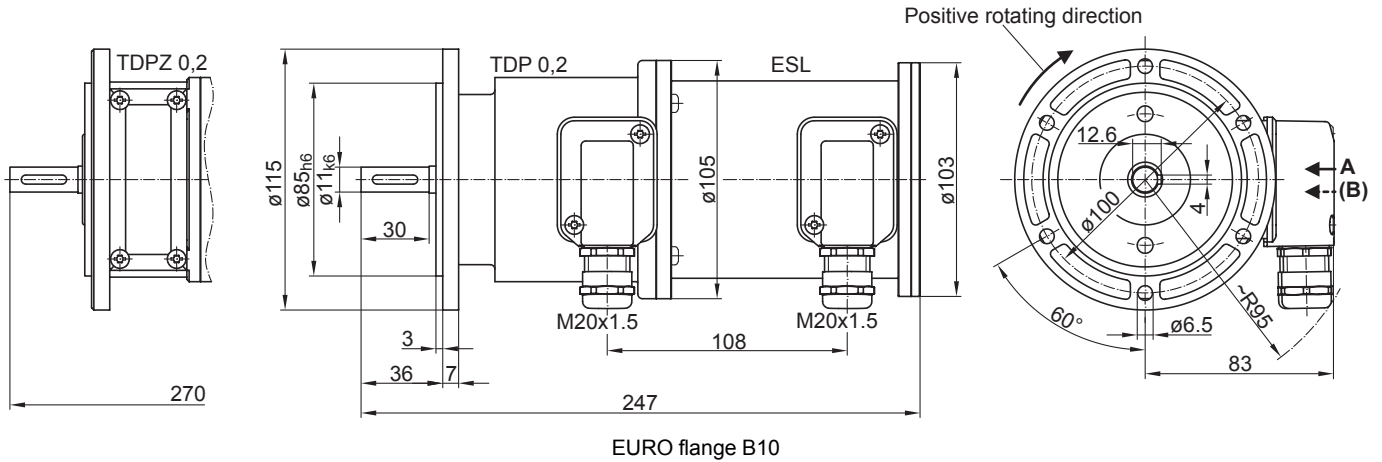
Speed switch ESL 93

TDP 0,2 + ESL 93, TDPZ 0,2 + ESL 93

Tachogenerator/twin tachogenerator with integrated electronic speed switch

Solid shaft with EURO flange B10 or housing foot B3

Dimensions



TDP 0,2 + ESL 93, TDPZ 0,2 + ESL 93

Tachogenerator/twin tachogenerator with integrated electronic speed switch

Solid shaft with EURO flange B10 or housing foot B3

Ordering reference

	TDP	#	#####	#####	+ ESL93
Product	TDP							
Tachogenerator + speed switch								
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								
Electronic speed switch, 3 outputs, speed control					+ ESL93			
Switching speed 1 (ns1)								
200...5000 rpm							...	
Switching speed 2 (ns2)								
200...5000 rpm								...
Switching speed 3 (ns3)								
200...5000 rpm								...

Data according to type

Type	Open-circuit voltage U_0 [mV/rpm]	Minimum load required depending on speed range [rpm]			Maximum operating speed n_{max} [rpm]	Armature resistance R_A (20°C) [Ω]	Armature inductance L_A [mH]
		0-3000 R_L [kΩ]	0-6000 R_L [kΩ]	0- n_{max} R_L [kΩ]			
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)

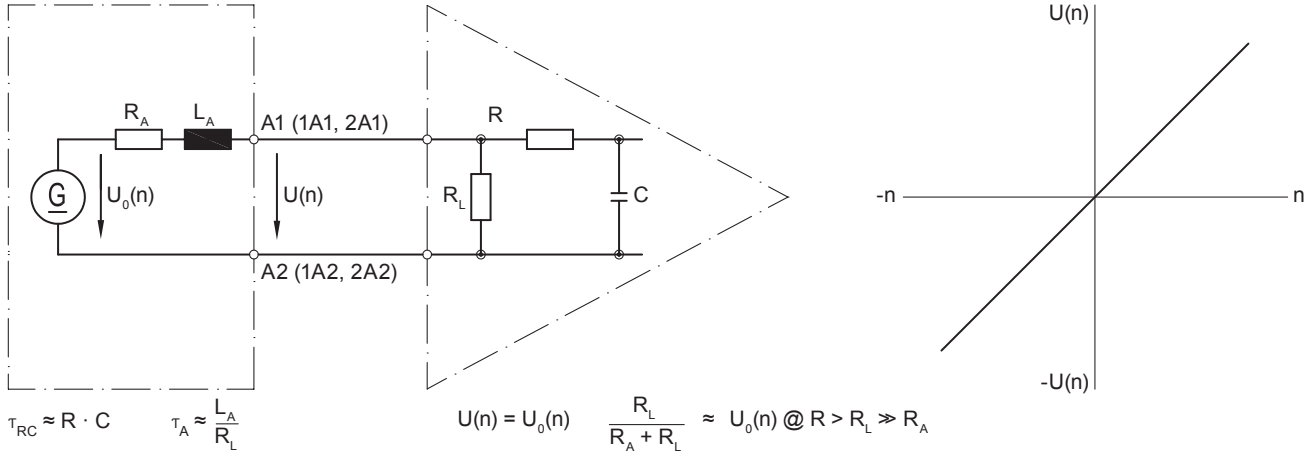
TDP 0,2 + ESL 93, TDPZ 0,2 + ESL 93

Tachogenerator/twin tachogenerator with integrated electronic speed switch

Solid shaft with EURO flange B10 or housing foot B3

Replacement switching 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 $\varnothing 6 \dots 12$ mm)

Spring disk coupling K 50 (shaft $\varnothing 11 \dots 16$ mm)

Spring disk coupling K 60 (shaft $\varnothing 11 \dots 22$ mm)

Spare parts

Carbon brushes (on request)