Rotation Speed Monitor

SENSES OVERSPEED / UNDERSPEED

Al-Ni8

DUK
DITTELBACH UND KERZLER

- **Dry relay contacts**

- **No supply voltage, no batterie**

- **Electronic evaluation**

- **Precise repeatability of the switch point**

- **Housing of seawater-resistant anodised aluminium**
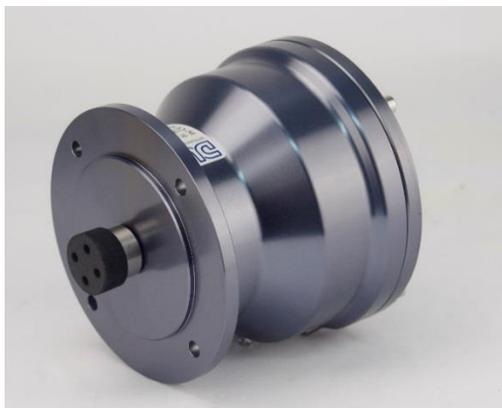
Speed monitors type Al-Ni8 are installed at the end of rotating shafts to monitor their speed. They do not require a supply voltage for the internal evaluation electronics, which is generated internally.

The setting range is from 120 rpm (2 revolutions/second, rps) to 6000 rpm (100 rps) and can be set separately in 1 rps increments for both left and right rotation.

The internal electronics constantly compare the actual rotation speed with an individually and easily adjustable setpoint. If this threshold value is overstepped or understepped, a relay switches over without delay. The evaluation by the electronics offers the advantage of a high repeat accuracy even with large temperature differences. This device does not require an external power supply: The necessary energy is generated internally by the rotation.

A screwdriver is all that is needed to set the threshold value; neither programming nor menu knowledge is required. This threshold value is set at standstill, the lowest threshold is 2 revolutions/second during start-up. A separate threshold value can be set for each running direction, i.e. both to the left and to the right, and a separate relay switches for each direction. If the value falls below the threshold value, the relay switches back without delay.

The housing offers IP67 protection and is made of seawater-resistant, anodised aluminium.

Function: When the shaft is rotating, the stepper motor generates the power for the alimentation of the electronic parts and generates the frequency for rotation speed evaluation. If the actual frequency is higher than the adjusted, the relay will be pulled up without delay. If the frequency decreases below the adjusted, the coil of the relay gets no power and the contacts fall off. The hysteresis is <0.7 rps.

Rotation Speed Monitor   Al-Ni8
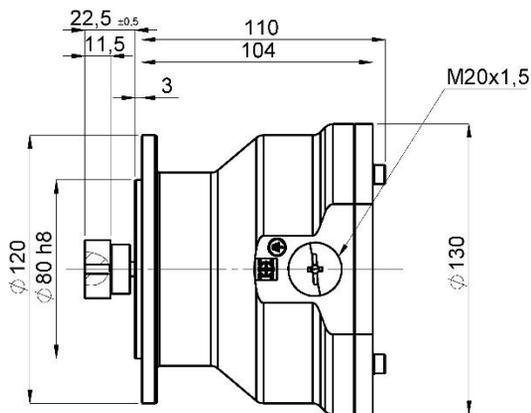
Technical data

Standards	EN 60947-5-1
Supply voltage	internally generated
Setting range	120 up to 6000rpm (2 up to 100 rps)
setting stepwidth	1 rps
Maximum speed	10000rpm
Contacts	per rotation direction 1 relay with dry contacts
Switching performance	400VAC 5A @cos phi=1
	240DC 150W max 5A
Cable inlet	1 x M20
Connecting	cage clamp, each max 2,5mm²
Housing	Seaworthy anodised aluminium
Protection	IP67
Mounting	flange mounting, mounting direction free
Temperatures	operating -25°C up to +70°C
	storing −40°C up to +80°C
Torque for rotation	average 7 Ncm, peak 10 Ncm
Coupling	pin coupling, attached 1 rubber coupling
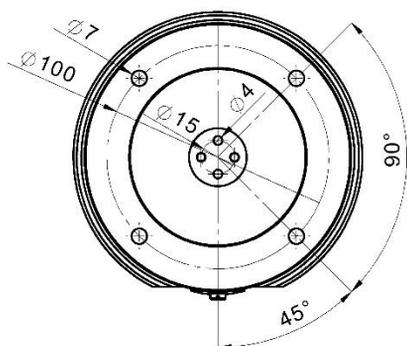
Setting the trip speed
e.g. on 240rpm equivalent to 04rps:
Set the left arm on 0,
Set the right arm on 4
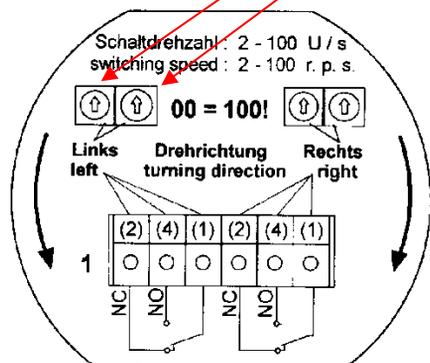
Relation of code switches position and switching speed

Pos.	r.p.s.	r.p.m.	Pos.	r.p.s.	r.p.m.	Pos.	r.p.s.	r.p.m.	Pos.	r.p.s.	r.p.m.	Pos.	r.p.s.	r.p.m.
0 : 1	not	usable	2 : 1	21	1260	4 : 1	41	2460	6 : 1	61	3660	8 : 1	81	4860
0 : 2	2	120	2 : 2	22	1320	4 : 2	42	2520	6 : 2	62	3720	8 : 2	82	4920
0 : 3	3	180	2 : 3	23	1380	4 : 3	43	2580	6 : 3	63	3780	8 : 3	83	4980
0 : 4	4	240	2 : 4	24	1440	4 : 4	44	2640	6 : 4	64	3840	8 : 4	84	5040
0 : 5	5	300	2 : 5	25	1500	4 : 5	45	2700	6 : 5	65	3900	8 : 5	85	5100
0 : 6	6	360	2 : 6	26	1560	4 : 6	46	2760	6 : 6	66	3960	8 : 6	86	5160
0 : 7	7	420	2 : 7	27	1620	4 : 7	47	2820	6 : 7	67	4020	8 : 7	87	5220
0 : 8	8	480	2 : 8	28	1680	4 : 8	48	2880	6 : 8	68	4080	8 : 8	88	5280
0 : 9	9	540	2 : 9	29	1740	4 : 9	49	2940	6 : 9	69	4140	8 : 9	89	5340
1 : 0	10	600	3 : 0	30	1800	5 : 0	50	3000	7 : 0	70	4200	9 : 0	90	5400
1 : 1	11	660	3 : 1	31	1860	5 : 1	51	3060	7 : 1	71	4260	9 : 1	91	5460
1 : 2	12	720	3 : 2	32	1920	5 : 2	52	3120	7 : 2	72	4320	9 : 2	92	5520
1 : 3	13	780	3 : 3	33	1980	5 : 3	53	3180	7 : 3	73	4380	9 : 3	93	5580
1 : 4	14	840	3 : 4	34	2040	5 : 4	54	3240	7 : 4	74	4440	9 : 4	94	5640
1 : 5	15	900	3 : 5	35	2100	5 : 5	55	3300	7 : 5	75	4500	9 : 5	95	5700
1 : 6	16	960	3 : 6	36	2160	5 : 6	56	3360	7 : 6	76	4560	9 : 6	96	5760
1 : 7	17	1020	3 : 7	37	2220	5 : 7	57	3420	7 : 7	77	4620	9 : 7	97	5820
1 : 8	18	1080	3 : 8	38	2280	5 : 8	58	3480	7 : 8	78	4680	9 : 8	98	5880
1 : 9	19	1140	3 : 9	39	2340	5 : 9	59	3540	7 : 9	79	4740	9 : 9	99	5940
2 : 0	20	1200	4 : 0	40	2400	6 : 0	60	3600	8 : 0	80	4800	0 : 0	100	6000

Attention
Never use Pos. 0:1 (uncontrolled switching state of relay)

Order number: Al-Ni8