



GI355 clamping flange



GI356 synchro flange

Incremental Encoder

Features

Incremental encoder with integrated OPTO-ASIC, thus high interference immunity
 Speed up to 10,000 RPM
 Resolution up to 6,000 pulses
 (Higher resolution up to 16,384 pulses upon request)
 Signal outputs A, A inv., B, B inv., N, N inv.
 Temperature range with 5 VDC up to 100 °C

Electrical data

Supply voltage	5 VDC \pm 10 % 10...30 VDC with reverse volt. prot. 4.75...30 VDC	
Current consumption	Max. 60 mA (w/o load) for 24 VDC Max. 30 mA (w/o load) for 5 VDC	
Max. operating frequency	150 kHz	
Output signals	Channel A, B, N + inverted	
Output stages	5 VDC 10...30 VDC 4.75...30 VDC	Line driver to RS422 Push-pull output, short-circuit-protected Push-pull output, short-circuit-protected
Electric connector	The electric connector must not be plugged on or removed whilst under voltage.	

Mechanical data

RPM value	Max. 10,000 RPM
Starting torque	
w/o seal (IP54)	< 0.010 Nm
with seal (IP65)	< 0.015 Nm
Shaft loading	
axial	< 20 N
radial	< 40 N
Inertia torque	1.45 x 10 ⁻⁶ kgm ²
Housing material	Aluminium
Weight	Approximately 250 g

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Order designation

Order	Flange / Shaft		
	GI355		
0	Clamping flange / 10 mm IP 54		
A	Clamping flange / 10 mm IP 65		
	GI356		
1	Synchro flange / 6 mm IP 54		
B	Synchro flange / 6 mm IP 65		
	Voltage / Signals		
22	5 VDC / Line driver RS422		
60	10...30 VDC push-pull output + inv.		
70	4.75...30 VDC push-pull outp. + inv.		
	Connection		
C2	C-plug with 12 pins, axial		
C3	C-plug with 12 pins, radial		
31	Cable 1 m (10...30 VDC) / 4.75...30 VDC, axial		
41	Cable 1 m (10...30 VDC) / 4.75...30 VDC, radial		
51	Cable 1 m (5 VDC), axial		
61	Cable 1 m (5 VDC), radial		
	Pulses / Order no.		
Pulse	no.	Pulse	no.
5	49	500	15
10	36	1000	22
25	50	1024	23
50	39	1250	24
60	40	1500	26
100	41	2000	28
128	57	2500	30
200	06	3600	31
250	09	5000	35
360	13	6000	48
400	14		

Further pulse numbers upon request

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Ambient conditions

Ambient temperature	-20...+100 °C	for 5 VDC
	-20...+70 °C	for 10...30 VDC
	-20...+70 °C	for 4.75...30 VDC
Storage temperature	-20...+100 °C	
Protection to		
Shaft w/o seal	IP 54	
Shaft with seal	IP 65	
Relative humidity	Max. 95 %, non condensing	
Endurance		
Vibration	IEC 68, Section 2 - 6 ≤ 100 m/s ² / 16 - 2000 Hz	
Shock	IEC 68, Section 2 - 27 ≤ 1000 m/s ² / 4 ms	
Interference immunity	EN 50082-2 EN 61000-4 -2 to 4 Severity grade 3	
Emitted interference	EN 50081-2	

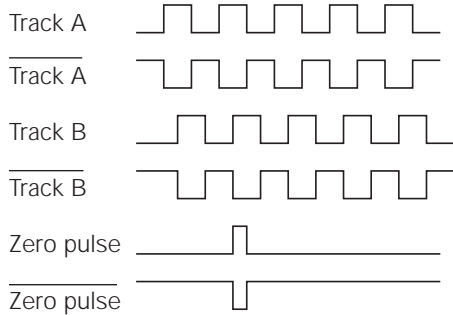
Accessories

Order no.	
Z 119.015	Mounting bell for synchro flange
Z 119.017	Angular fixing for clamping flange
Z 119.018	Eccentric fixing + screws
	Extension cord with connector on one side
Z 141.001	Connector without cable
Z 141.003	Connector with cable 2 m
Z 141.005	Connector with cable 5 m
Z 141.007	Connector with cable 10 m

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Output signals

Signals with clockwise sense of rotation when looking at the flange



Line driver (5 VDC)

Level High	$\geq 2.5 \text{ V}$	(with $I = -20 \text{ mA}$)
Level Low	$\leq 0.5 \text{ V}$	(with $I = 20 \text{ mA}$)
Load High	$\leq 20 \text{ mA}$	
Load Low	$\leq 20 \text{ mA}$	

Push-pull output (10...30 VDC)

Level High	$\geq \text{UB} - 3 \text{ V}$	(with $I = -20 \text{ mA}$)
Level Low	$\leq 1.5 \text{ V}$	(with $I = 20 \text{ mA}$)
Load High	$\leq 40 \text{ mA}$	
Load Low	$\leq 40 \text{ mA}$	

Push-pull output (4.75...30 VDC)

Level High	$\geq \text{UB} - 3 \text{ V}$	(with $I = -20 \text{ mA}$)
Level Low	$\leq 0.5 \text{ V}$	(with $I = 20 \text{ mA}$)
Load High	$\leq 20 \text{ mA}$	
Load Low	$\leq 20 \text{ mA}$	

Pin assignment

Pin	Cable color	Assignment
1	pink	Track B inv.
2	blue	UB Sense
3	red	Track N (zero pulse)
4	black	Track N inv. (zero pulse inv.)
5	brown	Track A
6	green	Track A inv.
7	-	-
8	gray	Track B
9	-	-
10	white/green	GND
11	white	GND Sense
12	brown/green	UB

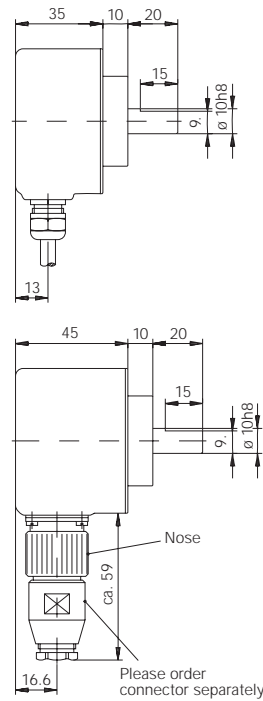
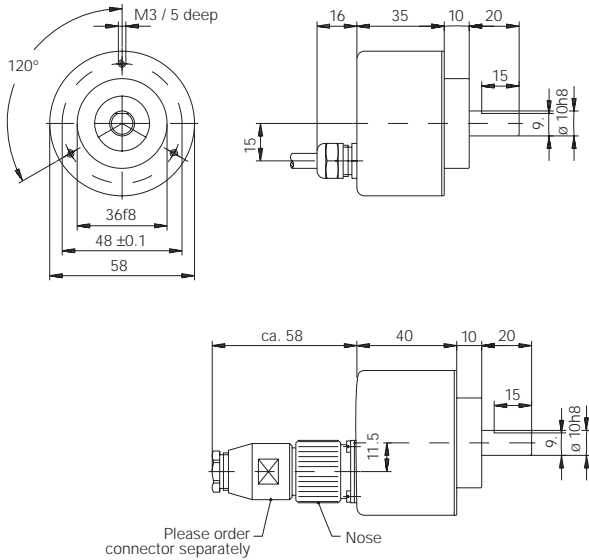
Attention: UB Sense and GND Sense are directly connected to UB and/or GND

Recommendation: Please use leads twisted in pairs for cable lengths of more than 10 m

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Dimensions and cutout size

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