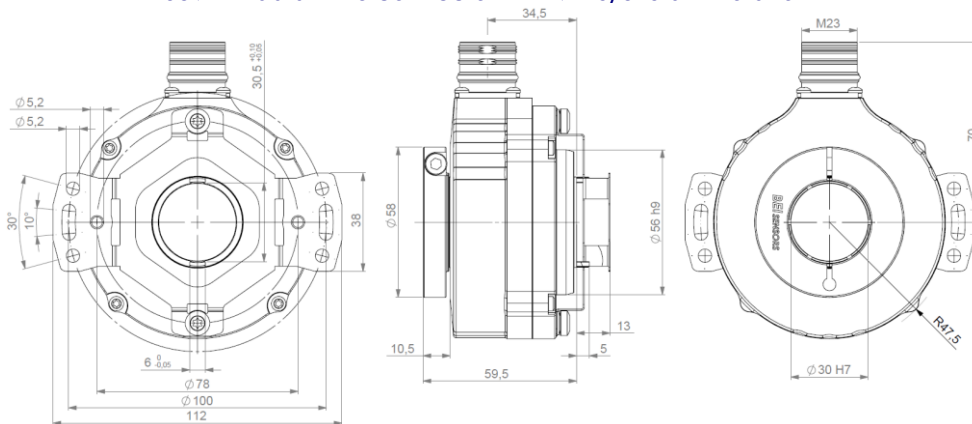


SIL3 PLe - INCREMENTAL ENCODERS – DSU9H RANGE

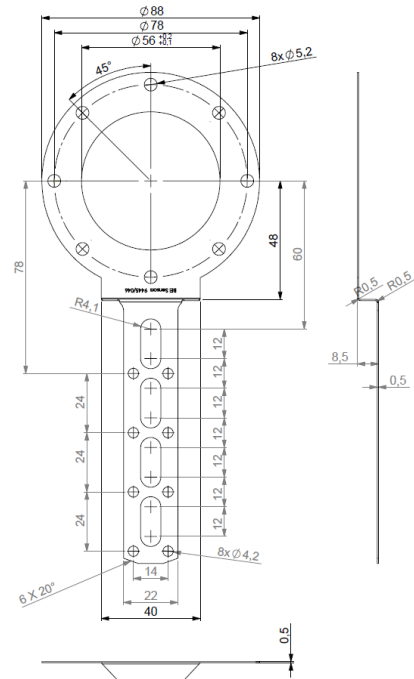
- Usable up to SIL 3 / PLe according to IEC 61508 / IEC 13849.
- Suitable for safe motor feedback according to IEC 61800-5-2.
- Especially designed for heavy-duty (steel, paper, wood – mills, cranes...) Compact and robust conception. Excellent resistance to shocks/vibrations.
- 90mm encoder, 30mm standard through shaft, PEEK reduction hub available.
- High protection level: IP 65.
- High performances in temperature -20°C to $+85^{\circ}\text{C}$.
- Power supply 5Vdc or 11/30Vdc.
- Digital TTL/RS422 or HTL Push-pull or sine/cosine 1Vpp output.
- Available resolution up to 2048 ppr.
- Connector or cable output – side orientation.
- Adapted anti-rotation system.
- Stainless steel version available in option.



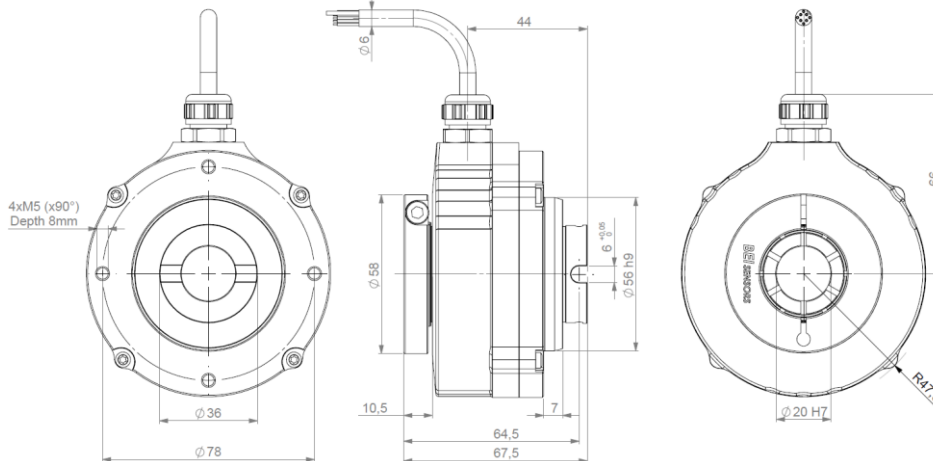
DSU9H – radial M23 connector with 9445/045 anti-rotation



Anti-rotation 9445/046



DSU9H radial cable and 20mm reduction hub



		9445/045	9445/046
Permissible misalignments	Axial	+/- 1.5mm	+/- 1mm
	Radial	+/- 0.3mm	+/- 0.2mm
	Perpend.	+/- 3°	+/- 5°
	Runout	0.1mm	0.1mm
Angular rigidity		540 N.m/rad	530 N.m/rad

MECHANICAL CHARACTERISTICS

Material	Cover : powder coated zinc alloy	Shaft inertia	< 120 000 g.mm ²
	Body : aluminum	Static/Dynamic torque	30 / 300 mN.m
	Shaft : AISI 303 stainless steel	Permissible max. speed	6 000 min ⁻¹
Ball bearings	6807 - Sealed	Continuous max. speed	3 000 min ⁻¹
Maximum loads	Axial: 25 N	Theoretical mechanical lifetime L _{10h} *	> 18.10 ⁹ turns / 100 000 hours
	Radial: 50 N	Encoder weight (approx.)	0,650 kg

* continuous max. speed – ½ max. load – according to ISO 281 : 1990, L₁₀

TEMPERATURE CONDITIONS

Operating temperature	-20 ... + 85 °C (encoder T [°])	Storage temperature	- 20 ... + 85 °C
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SIL3 PLe - INCREMENTAL ENCODERS – DSU9H RANGE

ELECTRICAL CHARACTERISTICS / FUNCTIONAL SAFETY PARAMETERS

Electronic Version	Output signals	Operating Voltage +V	Supply current	Current per channel pair	Short circuits proof	Reverse polarity protected	PFD	PFH	MTTFd	DC
2G2	Digital	5V +/-5%	100mA with no load	40mA	Yes	Yes	5,63E-05	6,42E-10	1547	HIGH
5G2	TTL RS422	11-30V			Not to +V		7,63E-05	8,72E-10	1180	
5G5	Digital HTL				Yes		7,63E-05	8,72E-10	1180	
2WT	Sine Cosine	5V +/-5%	70mA with no load	10mA	Yes		4,29E-05	4,90E-10	2328	
5WT	1Vpp	11-30V			Not to +V		6,60E-05	7,53E-10	1515	

Safety mission time: 20 years

STANDARDS CONFORMITY

Protection(EN 60529)	IP 65
Humidity (EN 60068-2-38)	93% @ 65°C
Shock (EN60068-2-27)	≤ 500m.s ⁻² (during 6 ms)
Vibration (EN60068-2-6)	≤ 200m.s ⁻² (10 ... 2 000 Hz)
EMC Immunity Test	EN 61000-6-2,increased levels
EMC Emission Test	EN 61000-6-4,increased levels
Isolation	1000 Veff
Salt Sparay (EN 60068-2-11 part 2)	96h

Functional safety	IEC 61508
	IEC 62061
	ISO 13849-1
	IEC 61800-5-2
	IEC 62061
Encoders usable up to SIL3 / PLe with external specific requirements, see User Safety Manual for details.	
ZZ/ are not safety signals.	

ELECTRICAL CONNECTIONS

		0V	+V	A or S	B or C	Z	A/ or S/	B/ or C/	Z/	Ground
G6	M23 - 12 pins CW	1	2	3	4	5	6	7	8	Connector Body
G8	M23 - 12 pins CCW	10 + 11	2 + 12	8	5	3	1	6	4	Connector Body
G3	PVC cable 8 wires 8230/020	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	General shielding
GP	PUR cable 12 wires 8230/050	WH white + WH/GN white /green	BU blue + BN/GN brown / green	GY grey	BN brown	RD red	PK pink	GN green	BK black	General shielding

AVAILABLE RESOLUTION

1024 2048

ORDERING REFERENCE (Contact the factory for special versions, ex: shaft size, resolution, connection etc)

	Shaft Ø	Supply	Output stage	Output signals	Resolution	Connection	Orientation	Reduction hub	Anti-rotation
DSU9H	30: 30mm Reduction hub available	Digital signals: 2G2, 5G2, 5G5			2048 max	G6: M23 12 pins CW G8: M23 12 pins CCW GP: PUR cable 12 wires G3: PVC cable 8 wires	R : radial Example : R020 : radial cable 2m	** : No reduction hub U2 : Reduction hub	DW**: 9445/045
		2:5Vdc 5:11 to 30Vdc	G2: driver 5Vdc RS422 G5: push-pull	9: AA/ BB/ ZZ/					
		Sine-wave signals: 2WT, 5WT							
		2: 5Vdc 5:11 to 30Vdc	WT: sine 1Vpp	N: SS/ CC/ ZZ/					
Ex:DSU9H	30 //	5	G2	9 //	01024 //	GP	R050 //	**	DW**

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