

HEAG 159

Precision sine multiplier

Converting of SinCos encoder signals into multiplied SinCos output signals

Overview

- Converting of SinCos signals into multiplied SinCos signals
- Multiplying factor 1...128
- Offset and amplitude adjustment
- Oversampling with 24 MHz
- Digitally pre-filter
- High signal quality



Technical data

Technical data - electrical ratings

Voltage supply	5 VDC \pm 5 % 10...30 VDC
Consumption	\leq 500 mA (5 VDC) \leq 300 mA (10...30 VDC)
Inputs	SinCos 2x SinCos
Input signals	A+, A-, B+, B-, R+, R-
Outputs	SinCos Error output
Output signals	A+, B+, R+, A-, B-, R- Option: A+, B+, R+, A-, B-, R-, Error-
Output frequency	\leq 600 kHz
Amplitude resolution	12 bit

Technical data - electrical ratings

Interpolation factor for SinCos output (multiplying)	1...128
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Approval	CE
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Technical data - mechanical design

Dimensions W x H x L	122 x 122 x 80 mm
Protection DIN EN 60529	IP 65
Operating temperature	0...+50 °C
Resistance	IEC 60068-2-6 Vibration 1 g, 50...2000 Hz IEC 60068-2-27 Shock 30 g, 11 ms
Weight approx.	1 kg
Connection	Connector M23, 12-pin Connector, 3-pin, external voltage supply

Optional

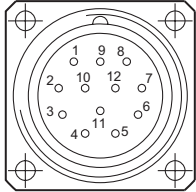
- Internal pre-amplifier
- Two sine inputs for compensating radial runout of the connected encoder
- Error output, external voltage supply

Terminal assignment

View A (see dimension)

Input encoder signals

Assignment flange connector



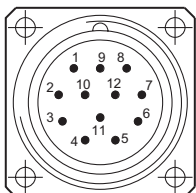
Flange connector M23,
female, 12-pin,
counter-clockwise (CCW)

Pin	Assignment
1	B-
2	5 VDC
3	R+
4	R-
5	A+
6	A-
7	dnu
8	B+
9	dnu
10	0V (⊥)
11	0V (⊥)
12	5 VDC

View B (see dimension)

SinCos output

Assignment flange connector



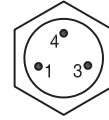
Flange connector M23,
male, 12-pin,
counter-clockwise (CCW)

Pin	Assignment
1	B- _{MULT}
2	5 VDC (with external voltage supply: dnu)
3	R+ _{MULT}
4	R- _{MULT}
5	A+ _{MULT}
6	A- _{MULT}
7	dnu (with error output: Err-)
8	B+ _{MULT}
9	dnu
10	0V (⊥)
11	0V (⊥)
12	5 VDC (with external voltage supply: dnu)

Terminal assignment

View C (see dimension)

External power supply



male, 3-pin,
counter-clockwise (CCW)

Pin	Assignment
1	10...30 VDC
3	⊥ (0 V)
4	Shield

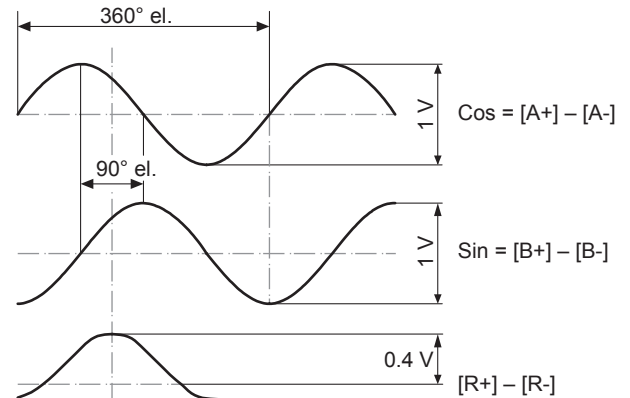
Terminal significance

... VDC	Voltage supply
0V (⊥)	Ground
A+	Output signal channel 1
A-	Output signal channel 1 inverted
B+	Output signal channel 2 (offset by 90° to channel 1)
B-	Output signal channel 2 inverted
R+	Zero pulse (reference signal)
R-	Zero pulse inverted
Err-	Error output
dnu	Do not use

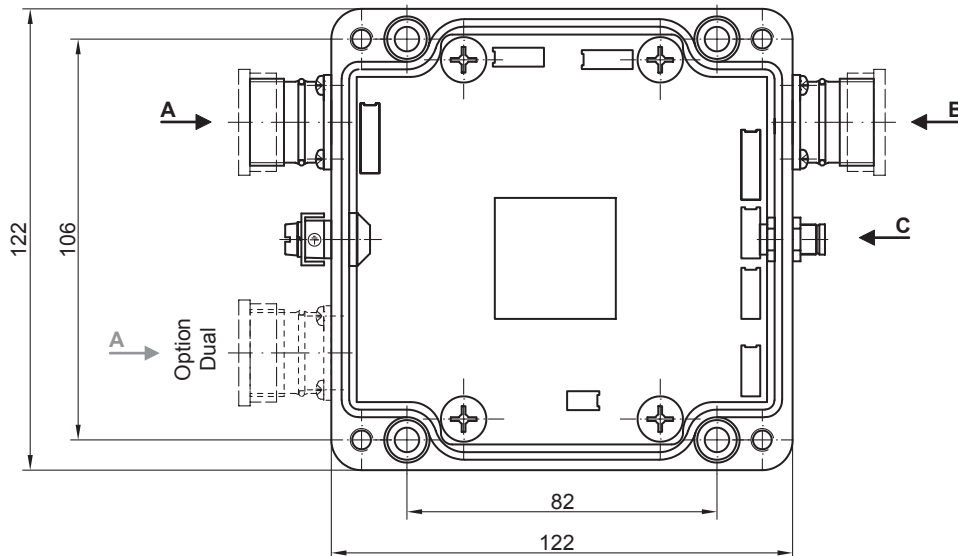
Output signals

SinCos

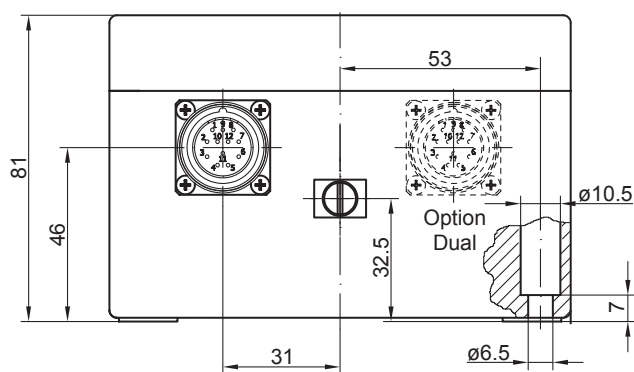
Multiplied sine signals



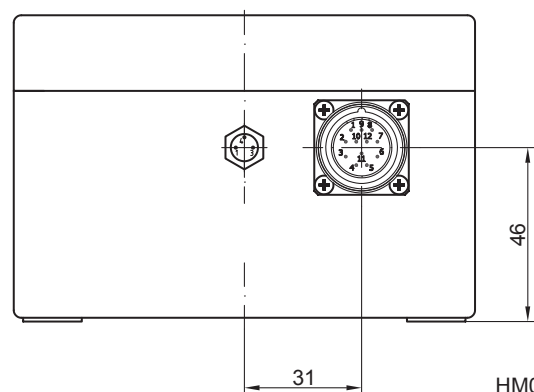
Dimensions



View A



View B/C



HM04M26711

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Ordering reference

		HEAG159	-	#	#	-	###	-	##	-	##
Product											
Signal Processing		HEAG159									
Internal pre-amplifier											
Without integrated pre-amplifier		-									
With integrated pre-amplifier		V									
Dual sine input											
One sine input (standard)		-									
Two sine inputs for compensating radial runout of the connected encoder		D									
Interpolation factor for SinCos output											
1		1									
2		2									
4		4									
8		8									
16		16									
32		32									
64		64									
128		128									
Error output											
Without error output		-									
With error output		ER									
External voltage supply											
Without external supply		-									
With external supply		EXT									