

Signal Processing

Precision sine multiplier

Conversion of SinCos encoder signals into multiplied SinCos output signals

HEAG 159



HEAG 159

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-
Input frequency	400 kHz
Outputs	SinCos Error output
Output signals	A+, B+, R+, A-, B-, R- Option: A+, B+, R+, A-, B-, R-, Error-
Amplitude resolution	12 bit
Output frequency	\leq 600 kHz
Interpolation factor for SinCos output (multiplying)	1...128

Features

- Conversion 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

Optional

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

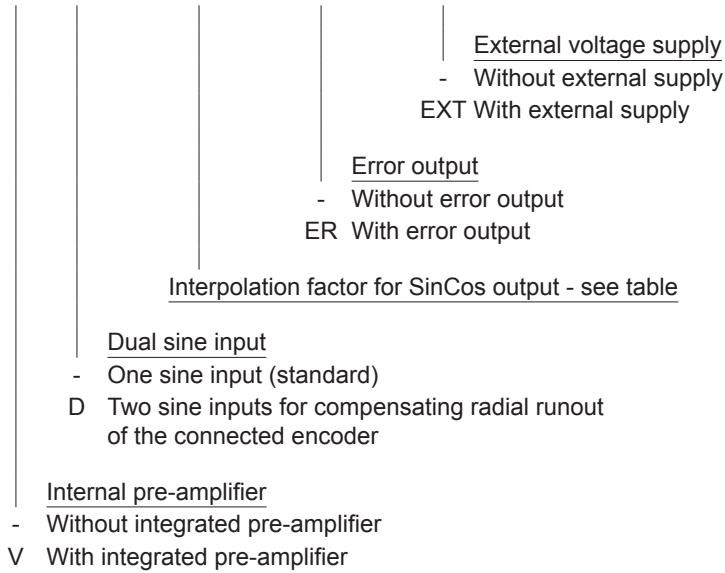
Technical data - mechanical design

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

Part number

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Interpolation factor for SinCos output

1	4	16	64
2	8	32	128

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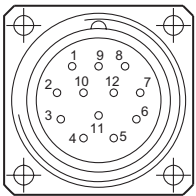
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Terminal assignment

View A - Input encoder signals

Flange socket, female contacts, counter-clockwise

Female	Assignment
Pin 1	B- (inv.)
Pin 2	5 VDC
Pin 3	R+ (zero pulse)
Pin 4	R- (zero pulse inv.)
Pin 5	A+
Pin 6	A- (inv.)
Pin 7	n.c.
Pin 8	B+
Pin 9	n.c.
Pin 10	0 V
Pin 11	0 V
Pin 12	5 VDC



View C - Option: External voltage supply

Male contacts

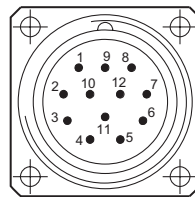
Male	Assignment
Pin 1	10 ... 30 VDC
Pin 3	0 V
Pin 4	Shield



View B - sin/cos output

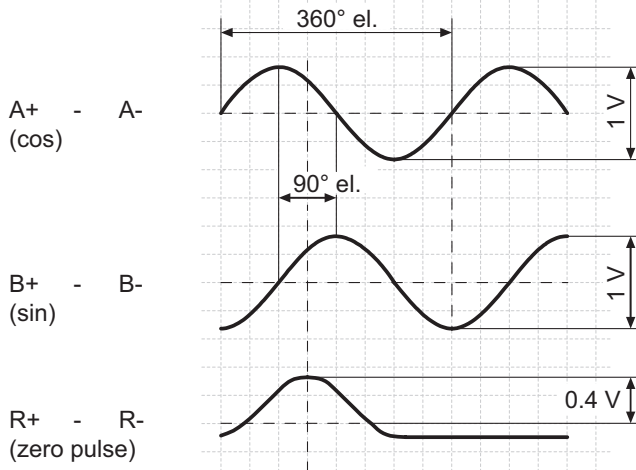
Flange socket, male contacts, counter-clockwise

Male	Assignment
Pin 1	B- _{MULT} (inv.)
Pin 2	5 VDC (n.c. at option with external voltage supply)
Pin 3	R+ _{MULT} (zero pulse)
Pin 4	R- _{MULT} (zero pulse inv.)
Pin 5	A+ _{MULT}
Pin 6	A- _{MULT} (inv.)
Pin 7	n.c. (Error- at option with error output)
Pin 8	B+ _{MULT}
Pin 9	n.c.
Pin 10	0 V
Pin 11	0 V
Pin 12	5 VDC (n.c. at option with external voltage supply)



Output signals

Multiplied sine signals



Dimensions

