

Encoders

Optical Incremental Encoders

Features:
 Rugged Housing
 32 to 1250 cycles per revolution
 2 or 3 Channels / TTL Digital output
 26C32 Line Driver Option

Series E5S / E5D / E5MS / E5MD

		HEDS 2 channel	HEDS 3 channel	EM1 3 channel	
Lines per revolution	N	32 - 540	50 - 512	720 - 1250	
Signal output, square wave		2	2+1 index	2+1 index	channels
Supply voltage	V _{cc}	4,5 to 5,5			V DC
Current consumption, typical (V _{cc} = 5 V DC)	I _{cc}	27	57	55	mA
Pulse width	P	180 ± 45	180 ± 35	180 ± 45	°e
Phase shift, channel A to B	Φ	90 ± 20	90 ± 15	90 ± 15	°e
Logic state width	S	90 ± 45	90 ± 35	90 ± 45	°e
Cycle	C	360 ± 5,5	360 ± 5,5	360 ± 7,5	°e
Signal rise/fall time, typical	tr/tf	0,25 / 0,25			µs
Frequency range ¹	f	up to 100	up to 100	up to 100	kHz
Inertia of code disc	J	0,6			gcm ²
Operating temperature range		- 40 to +100	- 40 to +100	- 40 to +100	°C
Encoder module		HEDS 9100	HEDS 9140	EM1	

¹) Velocity (rpm) = f (Hz) x 60/N

Ordering information

Encoder	number of channels	lines per revolution	in combination with:
HEDS 9100	2	110, 120, 540	{ 2342, 2642, 2657, 3242, 3257, 3863 { 2444, 3056, 3564, 4490
HEDS 9140	3	50, 96, 100, 192, 200, 250, 256, 360, 400, 500, 512	
EM1	3	32, 720, 900, 1000, 1024, 1250	

Features

These rugged incremental shaft encoders in combination with the FAULHABER DC-Micromotors are designed for indication and control of both, shaft velocity and direction of rotation as well as for positioning.

A LED source and lens system transmits collimated light through a low inertia mylar disc with machined aluminum hub, to give two channels with 90° phase shift.

The encoder is available in "S" single encoder version or "D" differential with 26C31 line driver built-in. Optional connector cable 5 or 10 pin finger latching with 24 AWG shielded round twisted-pair cable, specify length in feet.

The single 5 volt supply and the two or three channel digital output signals are interfaced with a 5-pin connector or 5-pin locking connector (sold separately).

Base and cover constructed of rugged 20% glass filled polycarbonate.

The "M" type is a machined aluminum housing with clear anodizing protective finish.

Ball bearings are recommended for continuous operation at low and high speeds and for elevated radial shaft load.

Details for the DC-Micromotors and suitable reduction gearheads are on separate catalog pages.

Output signals / Circuit diagram / Connector information...E5D

Output signals
 Ch.A
 Ch.B
 2.4V
 Ch.I

Connection diagram
 E5...I requires pull-up resistors

Connector information
 E5D.../E5MD...

Output signals / Circuit diagram / Connector information...E5S

