



HEIDENHAIN



Product Information

Output Cable for ECI 1119 EBI 1135 EQI 1131

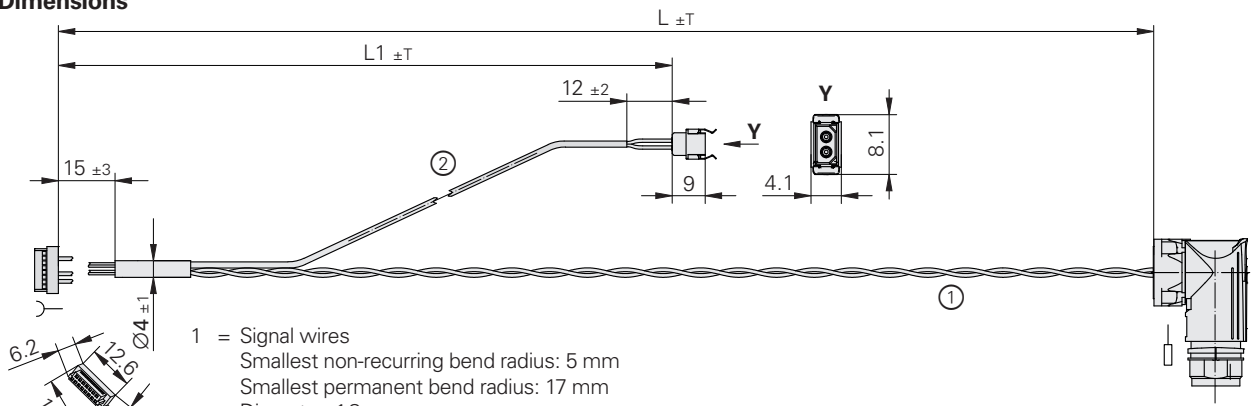
With M12 angle
flange socket for HMC 2

ID 1279930-xx

Output cable for ECI 1119, EBI 1135, and EQI 1131

- With connector for 15-pin PCB connector
- With M12 flange socket for HMC 2
- Temperature sensor wires with Datamate connecting element

Dimensions

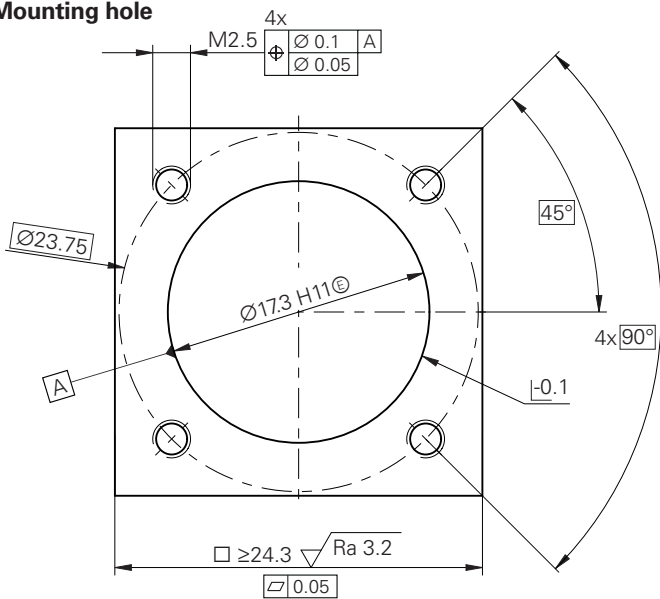


- 1 = Signal wires
 Smallest non-recurring bend radius: 5 mm
 Smallest permanent bend radius: 17 mm
 Diameter: 1.8 mm
- 2 = Temperature sensor wires
 Smallest non-recurring bend radius: 5 mm
 Smallest permanent bend radius: 17 mm
 Diameter: 2.2 mm
- L = For the maximum cable length, see the specifications of the encoder model.

Tolerance table	
	T
≤ 250 mm	± 5 mm
< 1000 mm	+ 10 mm

mm
 Tolerancing ISO 8015
 ISO 2768 - m H
 ≤ 6 mm: ±0.2 mm

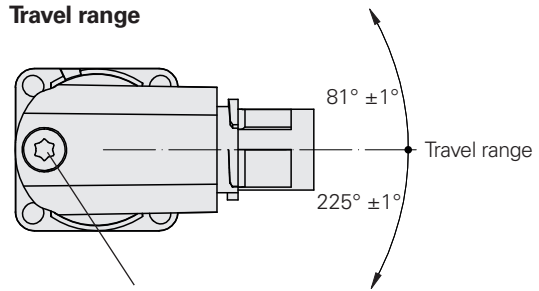
Mounting hole



Information on 4 x M2.5 mounting holes:

- Tightening torque: 0.45 Nm ±0.05 Nm
- At least 3.5 mm load-bearing thread length
- Sealed blind hole or thread

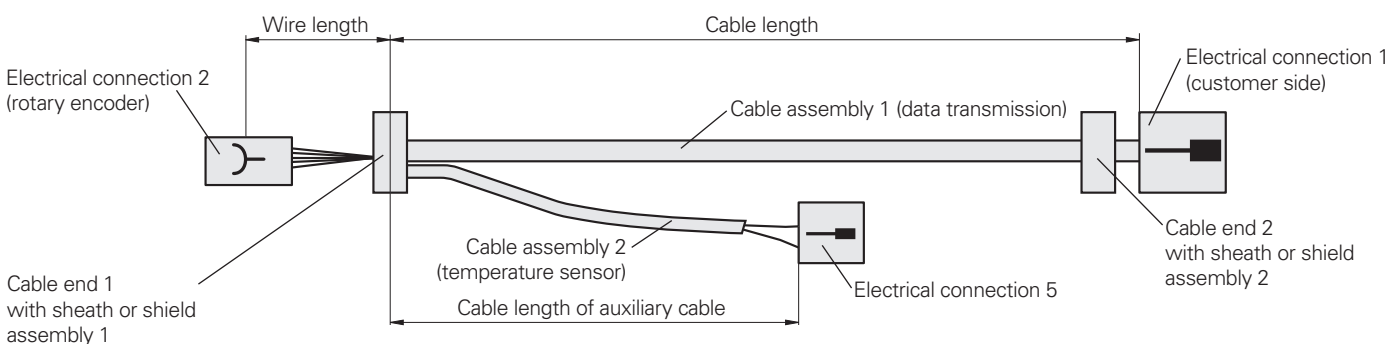
Travel range



Countersunk screw:
 M3.8 (DIN 267-30);
 tightening torque:
 1.2 Nm ±0.1 Nm

Terminology diagram

The following terminology diagram serves as an overview of the cable components with their designations. Dimensions and other cable details must be taken from the *Dimensions* drawing.



Specifications	Output cable (AGK) for ECI 1119, EBI 1135, EQI 1131															
General design																
Optimized for interface*	EnDat 3 E30-R2 for HMC 2															
Operating temperature	<i>Stationary cable:</i> -20 °C to 125 °C															
CE	Printed on packaging label															
NRTL	–															
Brand	HEIDENHAIN															
Cable assembly 1 (data transmission)	2 x 0.15 mm ² , twisted															
Electrical design	Working voltage < 250 V (AC/DC)															
Jacket characteristics	ETFE wires are highly resistant to oils, greases, acids, bases, and solvents, and do not contain PVC or silicone. <i>Wire colors:</i> yellow/violet															
Cable jacket / insulation	ETFE (special elastomer) Ø 0.8 mm Test voltage: 3.4 kV peak AC / DC (as per MIL-W-22759/18); test duration: 1 s															
Shielding	None															
Electrical connection 2 (to rotary encoder, see <i>Terminology diagram</i>)	15-pin, 2-row PCB connector; protection rating: IP00															
Cable end 1 (see <i>Terminology diagram</i>)	Heat shrink tubing Ø _O = 4 mm															
Cable length (see L in <i>Dimensions</i>)	<i>Max. cable length:</i> 0.3 m															
Electrical connection 1 (for customer side, see <i>Terminology diagram</i>)	8-pin M12 SpeedTEC nickel-plated rotatable flange socket series 912; bolt circle diameter: 23.75 mm; flange: 21x21 mm; protection rating (connected): IP66/67; grounding conductor housing connector: VDE 0627; insulator: PA, PBT, UL 94/V0; seals: FKM <table border="0"> <thead> <tr> <th>Electrical data</th> <th>Power</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>Rated current</td> <td>Max. 8 A*</td> <td>Max. 1 A*</td> </tr> <tr> <td>Rated voltage</td> <td>630 V (AC/DC)</td> <td>48 V (AC/DC)</td> </tr> <tr> <td>Rated impulse voltage (L-L)</td> <td>6000 V</td> <td>1500 V</td> </tr> <tr> <td>Volume resistance</td> <td>< 5 mΩ</td> <td>< 15 mΩ</td> </tr> </tbody> </table> Values as per VDE 0110/EN 61984, Section 6.19.2.2 Contamination level 3 Overvoltage category III Max. installation elevation 2000 m	Electrical data	Power	Signal	Rated current	Max. 8 A*	Max. 1 A*	Rated voltage	630 V (AC/DC)	48 V (AC/DC)	Rated impulse voltage (L-L)	6000 V	1500 V	Volume resistance	< 5 mΩ	< 15 mΩ
Electrical data	Power	Signal														
Rated current	Max. 8 A*	Max. 1 A*														
Rated voltage	630 V (AC/DC)	48 V (AC/DC)														
Rated impulse voltage (L-L)	6000 V	1500 V														
Volume resistance	< 5 mΩ	< 15 mΩ														
Cable assembly 2 (temperature sensor)	Two wires with ETFE insulation 0.15 mm ² in the heat shrink tubing; wire design: 19 x Ø 0.1 mm; outside diameter: 0.8 mm															
Electrical design	Working voltage < 250 V (AC/DC)															
Jacket characteristics	Heat shrink tubing (mechanical protection of the ETFE wires) <i>Color:</i> black															
Wire jacket / insulation	Test voltage: 3.4 kV peak AC / DC (as per MIL-W-22759/18); test duration: 1 s															
Cable length of the auxiliary cable (see L1 in <i>Dimensions</i>)	<i>Max. cable length:</i> 0.3 m															
Electrical connection 5 (see <i>Terminology diagram</i>)	2-pin, coded, locking, 1-row, wire-to-wire Datamate M80 connector (male), with 2 mm contact spacing and IP00 rating															

* For more information, see the *Interfaces of HEIDENHAIN Encoders* brochure

Also comply with the specifications and dimensions for the M12 connecting elements from TE Connectivity Industrial GmbH.

Mounting accessories

Mounting and initial setup must be performed with appropriate ESD protection. Do not engage or disengage the connecting element when it is under power.



Mounting aid

To avoid damage to the cable, use the mounting aid to connect and disconnect the cable assembly. The pulling force must be applied solely to the connector and not to the wires.

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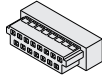





For further mounting information and mounting aids, please refer to the relevant mounting instructions and the *Encoders for Servo Drives* brochure.



Mounting aid for PCB connector






Electrical connection

Pin layout for ECI 1119/EBI 1135/EQI 1131 output cables inside the motor housing, with E30-R2 interface

15-pin PCB connector (female)		2-pin connector (male)	
 15		 2	
Encoder			
Power supply / Serial data transmission		Connections for an external temperature sensor	
 15	9	10	5
 2	/	/	2
	P_SD+¹⁾	P_SD-¹⁾	T+
	Violet	Yellow	Brown

¹⁾ Power supply and data: P_SD+ contains U_P (power supply); P_SD- contains 0 V

Pin layout for the hybrid motor cable with M12 connector technology

8-pin M12 SpeedTEC angle flange socket (male) for HMC 2		Encoder				Motor			
 M12		Power supply / Serial data transmission				Brake			
 M12	A	B	C	D	1	2	3	4	
	/	/	/	/	/	/	/	Earth	
	P_SD+¹⁾	P_SD-¹⁾	Brake+	Brake-	U	V	W	PE	
	Violet	Yellow							

SpeedTEC is a registered trademark of TE Connectivity Industrial GmbH.
 Conformity with the EMC Directive must be ensured in the complete system.
 Proper insulation must be ensured in the complete system.
 Vacant pins or wires must not be used!

HEIDENHAIN

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This Product Information document supersedes all previous editions, which thereby become invalid. The basis for ordering from HEIDENHAIN is always the Product Information document edition valid when the order is placed.

Further information:

Comply with the requirements described in the following documents to ensure correct and intended operation:

- Brochure: *Cables and Connectors* 1206103-xx
- Brochure: *Encoders for Servo Drives* 208922-xx
- Brochure: *Interfaces of HEIDENHAIN Encoders* 1078628-xx
- Product Information document: *HMC 2* 1305512-xx

For more information on EnDat 3, visit: www.endat.de

For brochures and Product Information documents, visit: www.heidenhain.de