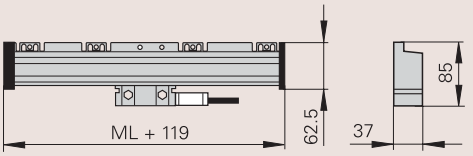
LC 182/LC 192

Absolute Sealed Linear Encoders

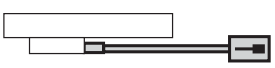
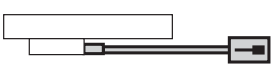
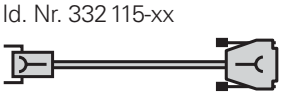
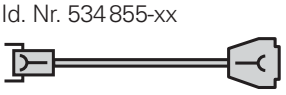
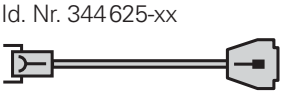
with Single-Field Scanning

Mechanical design		
Absolute position values	*LC 182* *LC 192 F* *LC 192 M*	**EnDat** **Serial interface – Fanuc 01** **Mitsubishi High Speed Serial Interface**
Incremental signals only with LC 182		**~ 1 V_{PP}** **Signal period 20 µm**
Measuring lengths		**140 to 3040 mm**
Special features		• **For mounting conditions as for LS 186 series** **With single-field scanning** • **Insensitive to contamination** • **High traversing speed** • **High positioning accuracy**

Specifications	LC 182	LC 192 F	LC 192 M
Measuring standard Thermal expansion coefficient	DIADUR glass scale with absolute track and incremental track $\alpha_{therm} \approx 8 \cdot 10$ ppm/K		
Accuracy grade*	± 5 µm; ± 3 µm		
Measuring length ML* in mm	140 to 1840 mm in steps of 100 mm		
	1840 to 3040 mm in steps of 200 mm		
Max. traversing speed mechanical	180 m/min		
Vibration 55 to 2000 Hz **Shock** 11 ms **Acceleration in measuring direction**	≤ 200 m/s^2 (IEC 60068-2-6) ≤ 300 m/s^2 (IEC 60068-2-27) ≤ 100 m/s^2		
Required moving force	≤ 4 N		
Protection IEC 60529	IP 53 when installed according to mounting instructions IP 64 with use of compressed air		
Operating temperature	0 to 50 °C (32 to 122 °F)		
Weight	0.4 kg +3.3 kg/m measuring length		
Power supply	5 V ± 5 % at encoder/max. 300 mA (without load); remote sensing possible		
Absolute position values*	EnDat interface	Serial interface – Fanuc 01	Mitsubishi High Speed Serial Interface
Incremental signals/Signal period Limit frequency –3 dB	⌒ 1 V_{PP}/20 µm ≥ 150 kHz	–	–
Measuring step	Approx. 0.02 µm[1)]	*Accuracy ± 3 µm:* 0.01 µm; *Accuracy ± 5 µm:* 0.05 µm	
Electrical connection Max. cable length with HEIDENHAIN cable	Separate adapter cable (1 m/3 m/6 m/9 m) connectable to mounting block Available on request		

***** Please indicate when ordering

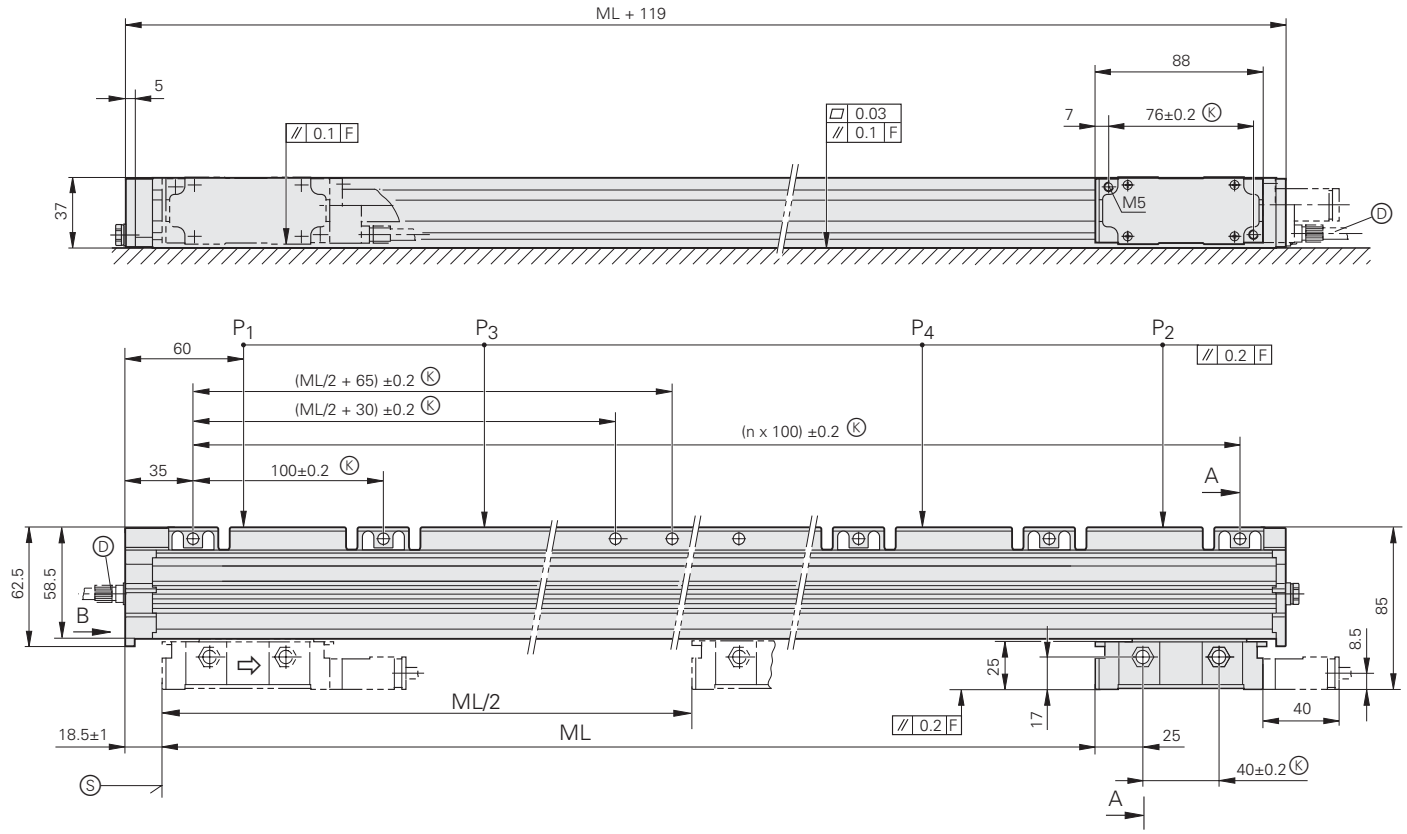
[1)] After 1024-fold interpolation of the incremental signals

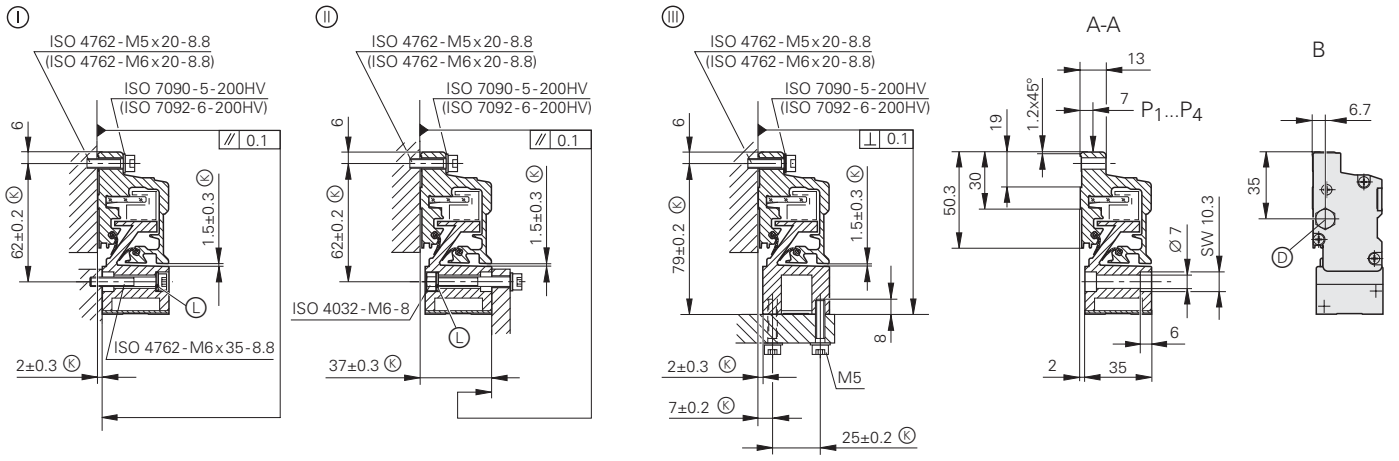
Connecting elements and cables	LC 182	LC 192 F	LC 192 M
Adapter cable, complete with coupling (male) 17-pin Cable length 1 m/3 m/6 m/9 m Cable diameter 6 mm	Id. Nr. 369 124-xx 	Id. Nr. 343 421-xx 	
Connecting cable, complete with connector (female) 17-pin Cable diameter 8 mm	With D-sub connector (fem.) Id. Nr. 332 115-xx 	With Fanuc connector Id. Nr. 534 855-xx 	With Mitsubishi connector Id. Nr. 344 625-xx 
Connecting cable, with one connector (female) Cable diameter 8 mm	Id. Nr. 309 778-xx 	–	
Adapter cable, complete with connectors Cable diameter 6 mm	With D-sub conn. (female) for HEIDENHAIN controls Id. Nr. 370 737-xx 	With Fanuc connector Id. Nr. 532 571-xx 	With Mitsubishi connector Id. Nr. 368 724-xx 

Dimensions

mm

DIN ISO 8015
ISO 2768 - m H





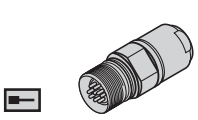
Ⓘ, Ⓘ,
Ⓘ = Mounting options
F = Machine guideway
P = Gauging points for alignment
Ⓚ = Required mating dimensions
Ⓓ = Compressed air inlet
Ⓢ = Beginning of measuring length (ML)
Ⓛ = Ribbed look washer D10.0/6.4 (accessories)

⇨ = Direction of scanning unit motion for output signals in accordance with interface description

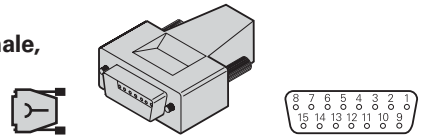
Electrical Connection

LC 182

17-pin HEIDENHAIN coupling



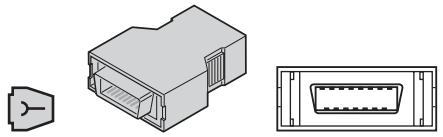
15-pin D-sub connector, female, for HEIDENHAIN controls and IK 220



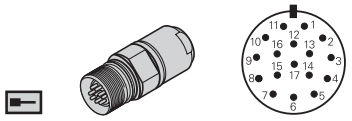
	Power supply					Incremental signals				Absolute position values			
	7	**1**	**10**	**4**	**11**	**15**	**16**	**12**	**13**	**14**	**17**	**8**	**9**
	1	**9**	**2**	**11**	**13**	**3**	**4**	**6**	**7**	**5**	**8**	**14**	**15**
	U_P	**Sensor** U_P	**0 V**	**Sensor** 0 V	**Internal shield**	**A+**	**A–**	**B+**	**B–**	**DATA**	**$\overline{\text{DATA}}$**	**CLOCK**	**$\overline{\text{CLOCK}}$**
	Brown/ Green	Blue	White/ Green	White	/	Green/ Black	Yellow/ Black	Blue/ Black	Red/ Black	Gray	Pink	Violet	Yellow

LC 192 F

20-pin Fanuc connector



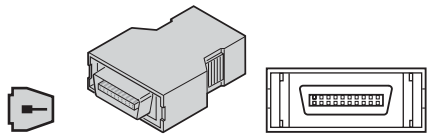
17-pin HEIDENHAIN coupling



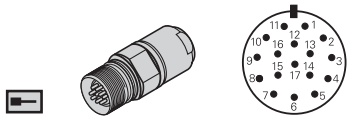
	Power supply					Absolute position values			
	9	**18/20**	**12**	**14**	**16**	**1**	**2**	**5**	**6**
	7	**1**	**10**	**4**	**–**	**14**	**17**	**8**	**9**
	U_P	**Sensor** U_P	**0 V**	**Sensor** 0 V	**Shield**	**Serial Data**	**$\overline{\text{Serial Data}}$**	**Request**	**$\overline{\text{Request}}$**
	Brown/Green	Blue	White/Green	White	–	Gray	Pink	Violet	Yellow

LC 192 M

20-pin Mitsubishi connector



17-pin HEIDENHAIN coupling



	Power supply				Absolute position values			
	20	**19**	**1**	**11**	**6**	**16**	**7**	**17**
	7	**1**	**10**	**4**	**14**	**17**	**8**	**9**
	U_P	**Sensor** U_P	**0 V**	**Sensor** 0 V	**Serial Data**	**$\overline{\text{Serial Data}}$**	**Request Frame**	**$\overline{\text{Request Frame}}$**
	Brown/Green	Blue	White/Green	White	Gray	Pink	Violet	Yellow

Shield is on housing; **U_P** = power supply
Sensor: The sensor line is connected internally to the respective power supply.
Vacant pins or wires must not be used.

HEIDENHAIN

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For more information
- Brochure: *Sealed Linear Encoders*
- Technical Information: *Single-Field Scanning*

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