

## 6A55RI 6-AXIS ROBOT FLANGE FORCE-TORQUE SENSOR

The 6A55RI is an advanced 6-axis force-torque sensor designed for robotics and medical applications, featuring a Robotic Flange ISO 9409-1 interface. Its integrated EtherCAT P measuring amplifier enables both power supply and data transmission through a single 4-wire connection. The replaceable cable features strain relief beneath the mounting plate, and drag chain-compatible cables are available in 2 m, 5 m, and 10 m lengths.

### FEATURES & BENEFITS

- Robotic Flange ISO 9409-1
- EtherCAT P measuring amplifier
- 6-axis force-torque sensor
- 5m EtherCAT P cable, 4-pole, shielded, PUR, suitable for drag chains
- Assembled with EtherCat P M8 circular connector
- Data frequency 1Hz - 1000 Hz

### SPECIFICATIONS

ACCURACY – (MAX ERROR)		
Nonlinearity – %FS		± 0.2
Hysteresis – %FS		± 0.2
Nonrepeatability – %RO		± 0.2
Creep, in 20 min – %		± 0.1
Crosstalk – %		1
TEMPERATURE		
Effect on Zero – %RO / deg	°C	± 0.2
Effect on Output – % / deg	°C	± 0.05
Operating Range	°C	-10 to +85
	°F	+14 to +185
ELECTRICAL		
Signal		EtherCAT
MECHANICAL		
Safe Overload – %CAP		300
Ultimate Overload – %RO		600
Cable Length	m	5
	ft	16.4

### STANDARD CONFIGURATION



Model 6A55RI (Shown)



### CONNECTOR PIN DIAGRAM

SIGNAL	FUNCTION	PIN-NO. M8 CONNECTOR	PIN-NO. RJ45
TD+	Transmit data +, GNDs	1	1
TD-	Transmit data -, Us:+24VDC	4	2
RD+	Receive data +	2	3
RD-	Receive data -	3	6

The device requires an EtherCAT P power source device, that superimposes the supplying DC and splits the Ethernet signals for the EtherCAT master.



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### CHARACTERISTICS

See Drawing	MODEL				
	6A55RI	6A55RI	6A55RI	6A55RI	6A55RI
	A	B	C	D	E
F <sub>x</sub> (N)	50	100	200	500	1000
F <sub>y</sub> (N)	50	100	200	500	1000
F <sub>z</sub> (N)	100	200	400	1000	2000
M <sub>x</sub> (Nm)	5	10	20	25	40
M <sub>y</sub> (Nm)	5	10	20	25	40
M <sub>z</sub> (Nm)	5	10	20	25	40
Diameter (mm)	55	55	55	55	55
Height (mm)	50	50	50	50	50
Weight (g)	221	221	221	221	221
Material	Aluminum Alloy				
Protection (IP)	65	65	65	65	65
Robotic Flange Type	ISO 9409-1-31.33-4-M5				

Standard configuration includes a replaceable 5-meter cable with M8 EtherCAT P connector

### OPTIONS

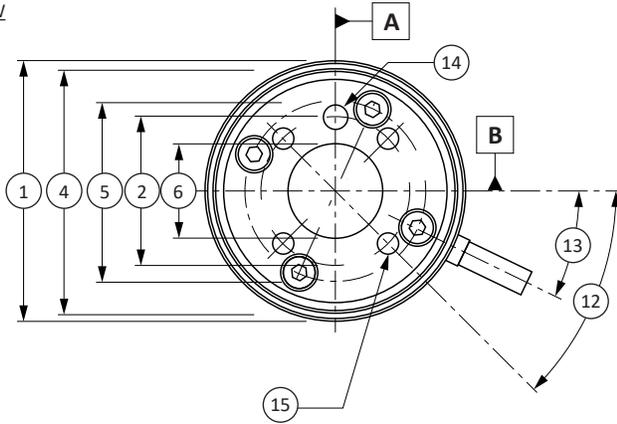
- Special calibration

### ACCESSORIES

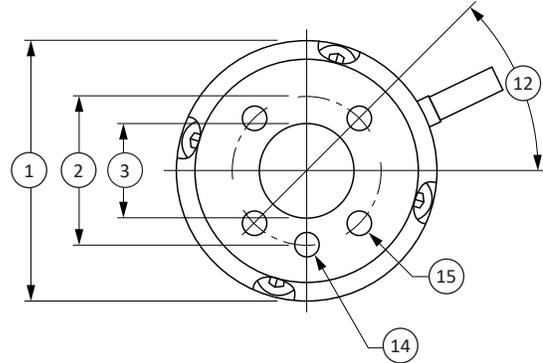
- CT-XXX-2M 2-meter cable with M8 EtherCAT P connector
- CT-XXX-5M 5-meter cable with M8 EtherCAT P connector
- CT-XXX-10M 10-meter cable with M8 EtherCAT P connector
- CT-XXY-2M 2-meter cable with RJ45 connector
- CT-XXY-5M 5-meter cable with RJ45 connector
- CT-XXY-10M 10-meter cable with RJ45 connector

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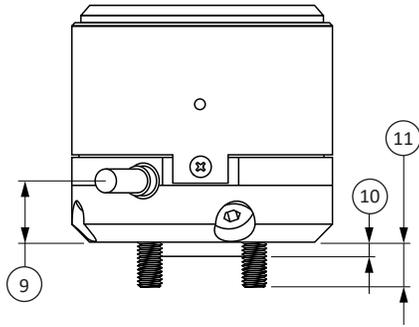
TOP VIEW



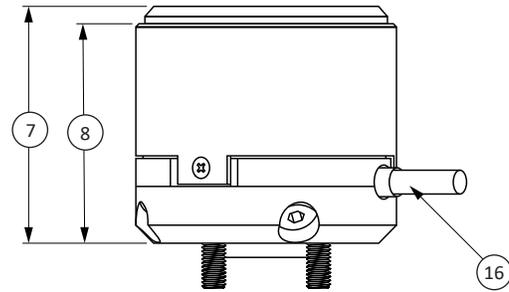
BOTTOM VIEW



SIDE VIEW



SIDE VIEW



### DIMENSIONS

See Drawing	Metric	U.S.
	mm	in
(1)	Ø55.0	Ø2.17
(2)	Ø31.33	Ø1.23
(3)	Ø20.0	Ø0.79
(4)	Ø51.0	Ø2.01
(5)	Ø38.0	Ø1.50
(6)	Ø20.0 F7	Ø0.79 F7
(7)	50.0	1.97
(8)	46.5	1.83
(9)	13.0	0.51
(10)	3.0	0.19
(11)	ca. 9.4	ca. 0.37
(12)		45°
(13)		26°
(14)	Ø5 H7 +0.012 ↓ 6 ⊕ Ø0.02 [A B]	Ø0.2 H7 +0.0005 ↓ 0.24 ⊕ Ø0.0008 [A B]
(15)	4 x Ø4.20 ↓ 6 M5 - 6H ↓ 5.20	4 x Ø0.17 ↓ 0.24 M5 - 6H ↓ 0.20

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### MOUNTING DIAGRAM

