SensONE

High performance force torque sensor

- ✓ Negligible temperature drift
- ✓ High impact robustness
- ✓ Noise level better than 0.01% of nominal range
- ✓ Up to 1000 Hz update rate
- ✓ Enhances your robot with the sense of touch
- ✓ Precise contact force detection
- ✓ Path recording through hand guiding
- ✓ High tolerance assembly
- ✓ Easy integration of 3D Camera
- ✓ Plug & Play

WE GIVE MACHINES THE SENSE OF TOUCH

APPLICATIONS

Insertion   Finishing   Precision Assembly   Product testing and inspection

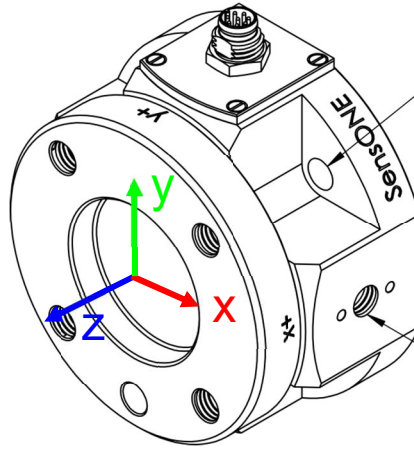## TECHNICAL SPECIFICATIONS

Serial
The best value for money solution for force feedback applications for collaborative robots. Its USB or RS422 output can deliver up to 1000 samples per second. A compact dustproof and waterproof package with an integrated ISO 9409-1-50-4-M6 mounting flange. Only fasteners are needed to integrate on UR

EtherCAT
Lightweight advanced applications for industrial automation and mobile robotics that require ultra-accurate force torque measurements without bulky electronics. It is integrated with 6-DoF IMU, temperature sensors it is up to IP67 (waterproof and dustproof) and a big range of power supply from 9 to 70 V

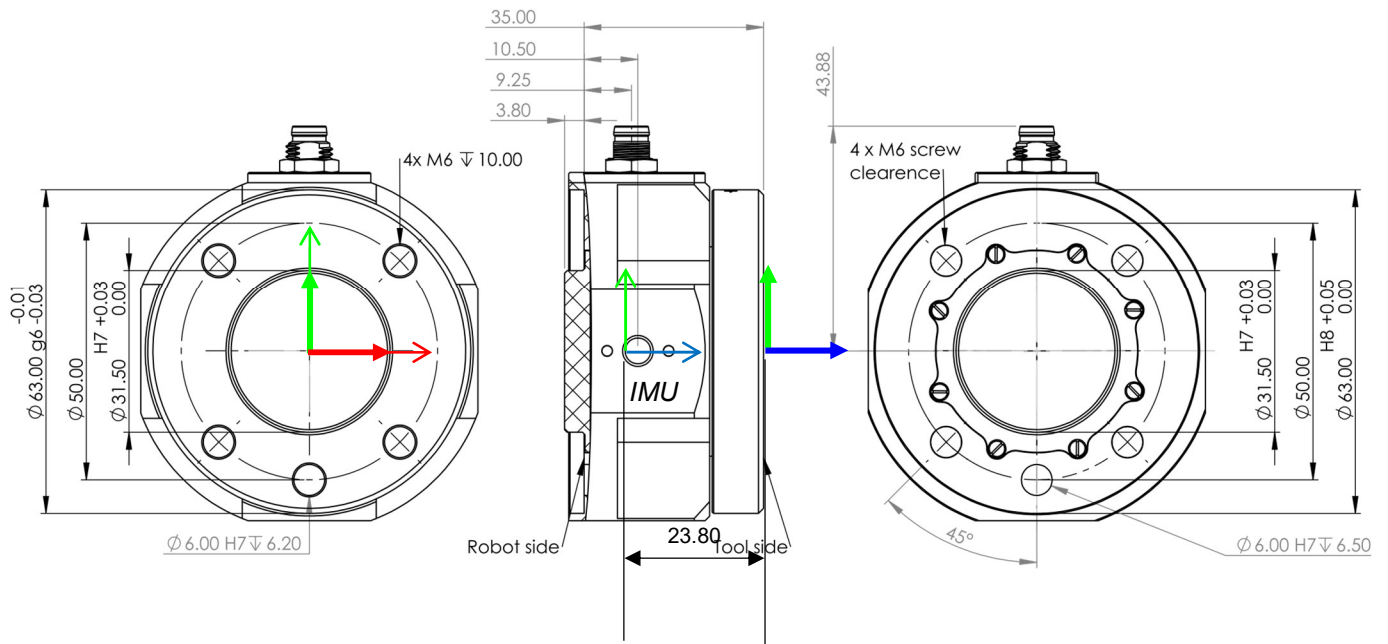|	Serial	EtherCAT
Range (F_{xy}, F_z, M_{xy}, M_z,)	700 N, 1200 N, 15 Nm, 15 Nm	700 N, 1200 N, 15 Nm, 15 Nm
Overload (F_{xy}, F_z, M_{xy}, M_z,)	2500 N, 4500 N, 35 Nm, 40 Nm	2500 N, 4500 N, 35 Nm, 40 Nm
Noise free resolution (100Hz)*	0.15 N, 0.15 N, 0.005 Nm, 0.002 Nm	0.15 N, 0.15 N, 0.005 Nm, 0.002 Nm
Weight	220 g	220 g
Size (DxL)	70 x 35 mm	70 x 35 mm
Communication	USB, RS422	CANopen over EtherCAT
Sampling rate (max.)	800 Hz	1000 Hz
Ingress Protection	dustproof and waterproof	dustproof and waterproof
Accel	-	±2g, 4g, 8g, 16g,
Gyro	-	±250°/sec, ±500°/sec, ±1000°/sec, ±2000°/sec

OVERVIEW

The mounting flange of the sensor is the same for both sides. The patternof the mounting flange is of ISO 9409-1-50-4-M6. Bolts 10.9 equivalent or stronger bolts should be used. For the robot's mounting surface please use the bolts provided with the sensor or ask info@botasys.com for details
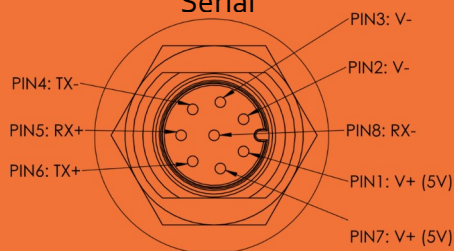
3 x Mounting flange for other tools or sensors. It can be used for example with Intel RealSense camera of Microsoft Kinect
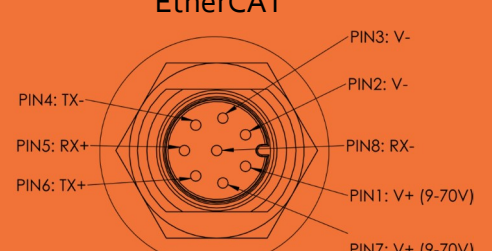
MECHANICAL DIMENSIONS

35.00
10.50
9.25
3.80

4x M6 ⍌ 10.00

43.88

4 x M6 screw clearence

IMU

Robot side

Tool side

23.80

Ø 63.00 g6 -0.01 -0.03
H7 +0.03 0.00
Ø 50.00
Ø 31.50
Ø 6.00 H7 ⍌ 6.20

H7 +0.03 0.00
Ø 31.50
Ø 50.00
Ø 63.00
H8 +0.05 0.00
45°
Ø 6.00 H7 ⍌ 6.50

M8 Connector Pinout	Serial	EtherCAT
	PIN3: V−	PIN3: V−
	PIN2: V−	PIN2: V−
	PIN4: TX−	PIN4: TX−
	PIN5: RX+	PIN5: RX+
	PIN8: RX−	PIN8: RX−
	PIN6: TX+	PIN6: TX+
	PIN1: V+ (5V)	PIN1: V+ (9-70V)
	PIN7: V+ (5V)	PIN7: V+ (9-70V)
Power Supply	5 V, 1.0W	9 – 70 V, 1.5W
Operating temperature	0 – 55 Celsius	0 – 55 Celsius
Signal	USB, RS422	CANopen over EtherCAT