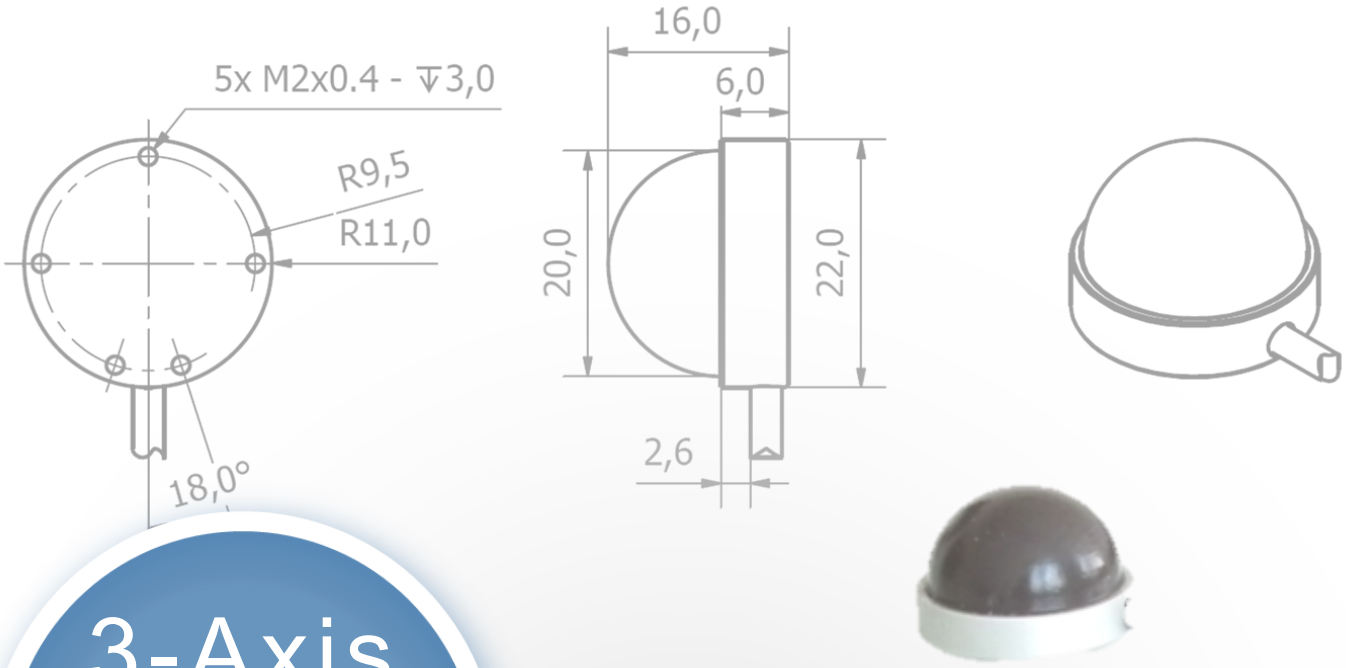
OPTOFORCE
SENSING FLEXIBILITY

V1.1



3-Axis FORCE Sensor

OMD-20-SH-80N

Description:

OptoForce 3D sensors measure the magnitude and the direction of Fx, Fy, and Fz forces based purely on **optical principles**. Depending on the application, **semi-spherical** and **flat top** versions are available. We advise these sensors for low budget research programs and for measurements where torque sensing is unnecessary. Semi-spherical sensors are ideal as sensitive **fingertips** for humanoid robot hands, industrial **grippers**, harvesting robots, and due to its **high durability** there are various applications in the field of **medical robotics** (rehabilitation) and **advanced robotics** (e.g. exoskeletons) as well.

Benefits:

- Multi axis force measurement
- High resolution
- Highly adaptable product design
- Dust and water proof (IP65)
- High overload range
- Mechanical shock resistant
- Cost efficient solution
- Easy integration

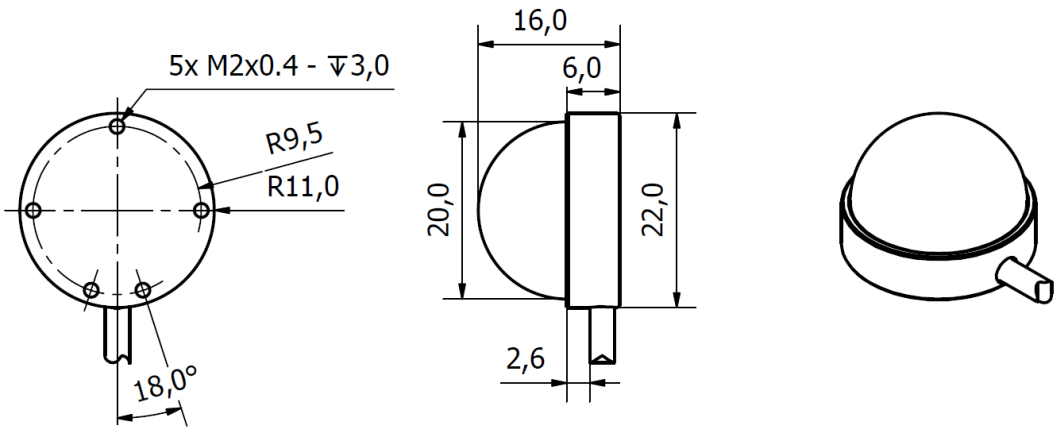
	Nominal Capacity	Typical Deformation
Fxy	± 40 N	± 1 mm
Fz – compression	80 N	1.5 mm

Accuracy	3% FS

*: For F/T sensing kindly see our 6 axis datasheets

CAD DRAWINGS

OMD-20-SH-80N



SPECIFICATIONS

Sensor Type	3 Axis Force Sensor		
Dimensions	Height x width x length		17 x 25 x 25 mm
Weight	With 1 m cable (without)		17 g (12 g)
	Fz Compression		Fxy
Nominal Capacity (N.C)	80 N	-	40 N
Single axis overload	200 %	-	200 %
Full scale nonlinearity	2 %	-	2 %
Resolution (counts at N.C)	12 000	-	5 000
Single axis deformation at N.C	1.5 mm	-	±1 mm
Crosstalk (typical)	< 5%		
Hysteresis (measured on Fz axis, typical)	< 2 %		
Working temperature range			-40 °C - +80 °C
Power requirement	In continuous operation		10 mA

INTERFACE TYPES

USB	Ethernet - UDP	Ethernet - TCP	UART
CAN	CANopen	EtherCAT	Analog
Maximum sampling frequency 1000 Hz			
Supported systems Windows; Linux; ROS; UR