

EOS RADAR LEVEL SENSOR EN



The EOS Radar series offers high-performance, wireless IoT level measurement based on precise radar technology. It enables reliable measurements of liquids, bulk solids, and piece goods up to 10 meters—even under demanding conditions.

Thanks to its flat design, the sensor is ideal for use on IBC tanks. The optional integrated 1.5-inch thread ensures quick and easy installation without additional adapters.

In addition to level measurement, the EOS Radar Series offers integrated GPS positioning capabilities. Combined with high-performance antenna technology, this enables exceptionally stable and long-range wireless communication.

The rugged housing is IP69K-rated, making it ideally suited for harsh industrial and outdoor applications. For maximum flexibility, the sensor features an injection-molded SMA connector and, optionally, an M12 connector.

With support for mioty®, NB-IoT, LoRaWAN®, and LTE-CAT-M1, as well as flexibly configurable measurement and transmission intervals, the EOS Radar Series is the ideal solution for smart tank monitoring, industrial applications, and digital inventory management.

VERSIONS

Item Code	Battery	Model	Available	Configuration
S-EOS-LOEU-R-F	3xAA	Flat	✓	BLE
S-EOS-MIOTY-R-F	3xAA	Flat	✓	BLE
S-EOS-NBM1-R-F	3xAA	Flat	✓	BLE
S-EOS-LOEU-R-F-SMA	3xAA	Flat	✓	BLE
S-EOS-MIOTY-R-F-SMA	3xAA	Flat	✓	BLE
S-EOS-NBM1-R-F-SMA	3xAA	Flat	✓	BLE
S-EOS-LOEU-R-F-SMA-M12	3xAA	Flat	X	BLE
S-EOS-MIOTY-R-F-SMA-M12	3xAA	Flat	X	BLE
S-EOS-NBM1-R-F-SMA-M12	3xAA	Flat	X	BLE
S-EOS-LOEU-R-T	3xAA	1.5-inch thread	✓	BLE
S-EOS-MIOTY-R-T	3xAA	1.5-inch thread	✓	BLE
S-EOS-NBM1-R-T	3xAA	1.5-inch thread	✓	BLE
S-EOS-LOEU-R-T-SMA	3xAA	1.5-inch thread	✓	BLE
S-EOS-MIOTY-R-T-SMA	3xAA	1.5-inch thread	✓	BLE
S-EOS-NBM1-R-T-SMA	3xAA	1.5-inch thread	✓	BLE
S-EOS-LOEU-R-T-SMA-M12	3xAA	1.5-inch thread	X	BLE
S-EOS-MIOTY-R-T-SMA-M12	3xAA	1.5-inch thread	X	BLE
S-EOS-NBM1-R-T-SMA-M12	3xAA	1.5-inch thread	X	BLE

X: Upon request

Item Code	Battery	Model	Available	Configuration
S-EOS2C-LOEU-R-F	2xC	Flat	X	BLE
S-EOS2C-MIOTY-R-F	2xC	Flat	X	BLE
S-EOS2C-NBM1-R-F	2xC	Flat	X	BLE
S-EOS2C-LOEU-R-F-SMA	2xC	Flat	X	BLE
S-EOS2C-MIOTY-R-F-SMA	2xC	Flat	X	BLE
S-EOS2C-NBM1-R-F-SMA	2xC	Flat	X	BLE
S-EOS2C-LOEU-R-F-SMA-M12	2xC	Flat	X	BLE
S-EOS2C-MIOTY-R-F-SMA-M12	2xC	Flat	X	BLE
S-EOS2C-NBM1-R-F-SMA-M12	2xC	Flat	X	BLE
S-EOS2C-LOEU-R-T	2xC	1.5-inch thread	X	BLE
S-EOS2C-MIOTY-R-T	2xC	1.5-inch thread	X	BLE
S-EOS2C-NBM1-R-T	2xC	1.5-inch thread	X	BLE
S-EOS2C-LOEU-R-T-SMA	2xC	1.5-inch thread	X	BLE
S-EOS2C-MIOTY-R-T-SMA	2xC	1.5-inch thread	X	BLE
S-EOS2C-NBM1-R-T-SMA	2xC	1.5-inch thread	X	BLE
S-EOS2C-LOEU-R-T-SMA-M12	2xC	1.5-inch thread	X	BLE
S-EOS2C-MIOTY-R-T-SMA-M12	2xC	1.5-inch thread	X	BLE
S-EOS2C-NBM1-R-T-SMA-M12	2xC	1.5-inch thread	X	BLE

X: Upon request

Designation	Description
LOEU	LoRaWAN EU
MIOTY	mioty EU
NBM1	NB-IoT, LTE-CAT-M1
R	Radar
SMA	SubMiniature Version A
M12	M12 connector
T	Thread, 1.5-inch male thread, cylindrical (not tapered), Version B
F	Flat design, without thread
EOS2C	Version with two C batteries
EOS	Version with three AA LiSOCL2 cells

GENERAL FEATURES

FEATURE	VALUE	UNIT
Dimensions (D x H)	118x57 (internal antenna with thread)	mm
Weight	160	g
Operating temperature	-20 to 80	°C
Storage temperature (recommended)	15 to 25	°C
Relative humidity during operation	5 to 99	%
IP rating	IP 69k	
Sensor range	Radar	
Traffic light function/Visual feedback	LED	
Acoustic Alarm Function	-	
Provisioning and Configuration	BLE	
Material	POCAN4225B PBT-GF-20	
BLE Antenna	Integrated	
RF Antenna	• Integrated for all versions • External with SMA connector for SMA versions • Auto Antenna Selector, depending on the connected configuration	
Accelerometer	Shock detection and activity tracking	
Batteries	Replaceable	
Primary cell type	• S-EOS-XXXX: 3 x AA LiSOCL2 (see LS14500 from SAFT) • S-EOS2C-XXXX: 2 x C LiMnO2 (equivalent to SAFT LM26500)	

CONNECTIVITY AND RF SPECIFICATIONS

FEATURE	VALUE	UNIT
RF Standards		
Frequency LoRaWAN®/mioty® EU	868	MHz
Cellular frequency	Band 8, 20 (900 MHz, 800 MHz)	MHz
Transmit power LoRaWAN®/Mioty® EU	14	dBm
Transmit power NB-IoT	23	dBm
Lora® MAC layer version	1.0.4	

SENSOR SPECIFICATIONS RADAR

FEATURE	VALUE	UNIT
Type	Pulse Radar (CPR)	
Beamwidth	approx. 25° on plane 1, approx. 15° on plane 2	°
Frequency	60.5 GHz	GHz
Range	20 meters on a 2 m × 2 m stainless steel target; ranges for other reflectors may vary	m
Absolute accuracy	10	mm
Resolution	1	mm

LOCALIZATION OF LORAWAN SENSORS

FEATURE	VALUE	UNIT
Wi-Fi SSID Scan	Up to 6 MAC addresses on port 199	
Wi-Fi SSID Scan Frequency	2.4	GHz
Wi-Fi SSID Scan Accuracy	6 to 50	m
GNSS	GNSS scan with GPS and BeiDou	
GNSS Accuracy	10 to 100	m
Antenna	Integrated	
Chipset	LR1110	
Feature for on-premises indoor tracking	Configurable to transmit up to 5 MAC addresses and RSSI values in the standard uplink payload	
Tracking in LoRaWAN	Network-dependent	
Tracking in Motion	Yes	

LOCALIZATION OF CELLULAR SENSORS

FEATURE	VALUE	UNIT
GNSS	GPS, Galileo, GLONASS, BeiDou	
GNSS Accuracy	5 to 100	m
Antenna	Integrated, patch antenna	
Cell Locate	Supported	
Tracking in Motion	Yes	

LOCALIZATION USING SENSORS

FEATURE	VALUE	UNIT
GNSS	GPS, Galileo, GLONASS, BeiDou	
GNSS Accuracy	5 to 100	m
Antenna	Integrated, patch antenna	
Cell Locate	Supported	
Tracking in Motion	Yes	

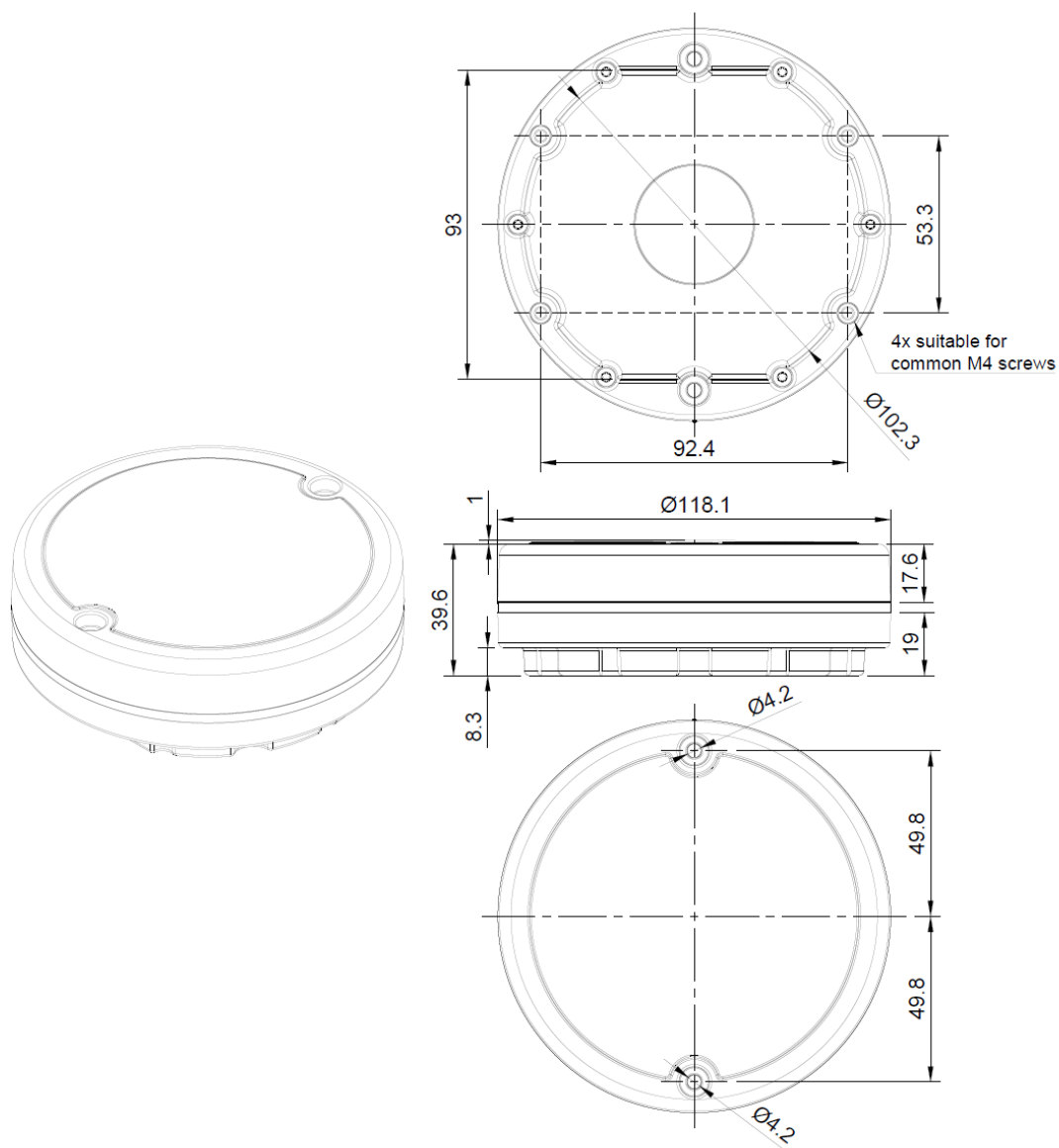
SENSOR SPECIFICATION: TEMPERATURE FOR ACC SENSORS

Feature	VALUE	UNIT
Temperature Range	-40 to +85	°C
Accuracy 0°C to 70°C	±0.8	°C
Accuracy from -40°C to +85°C	±1.3	°C
Resolution	1	°C

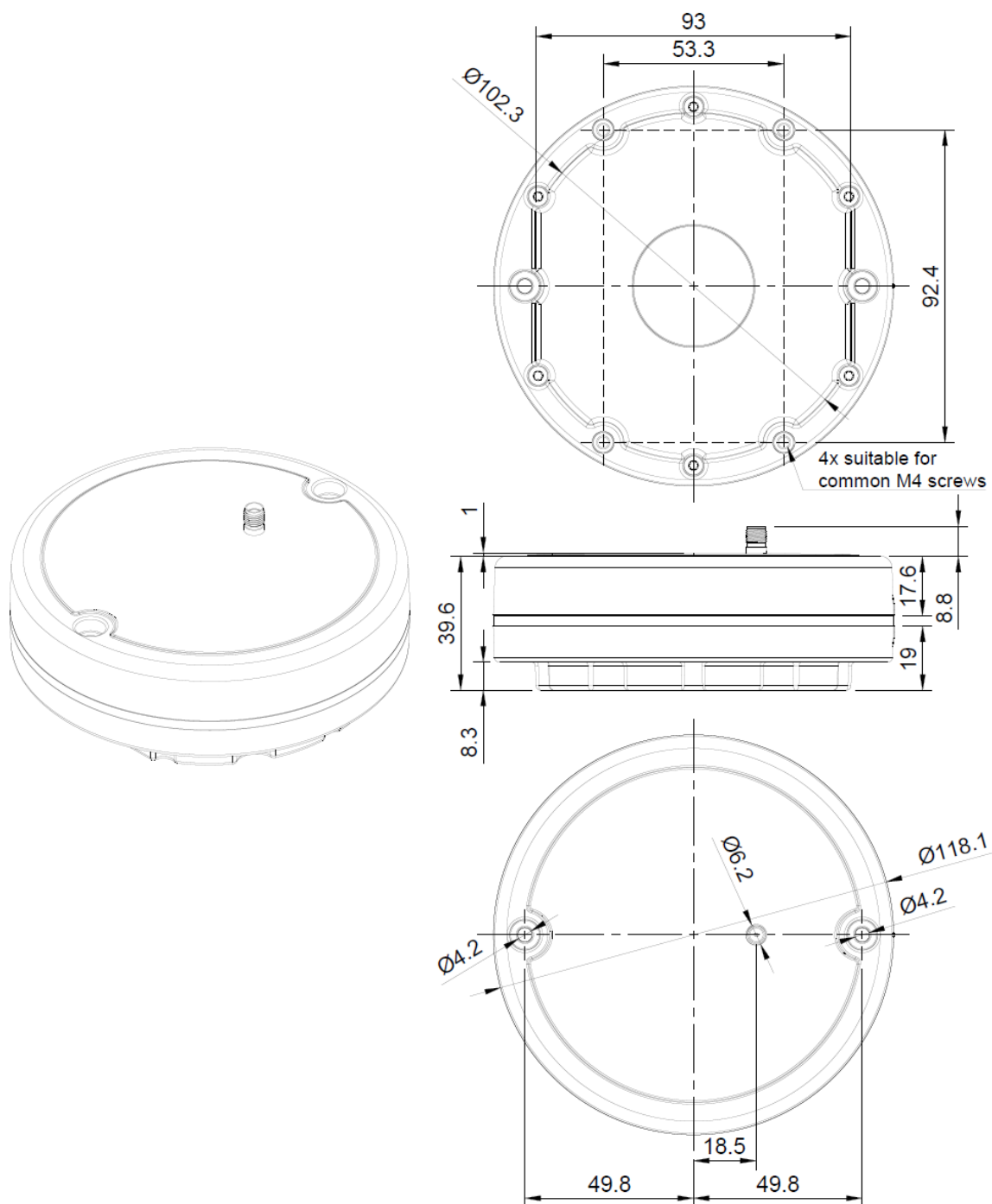
TEMPERATURE SENSOR SPECIFICATIONS FOR NON-ACC SENSORS

Feature	VALUE	UNIT
Temperature range	-30 to +85	°C
Accuracy 0°C to 70°C	±2	°C
Accuracy from -40°C to +85°C	±1.5	°C
Resolution	1	°C

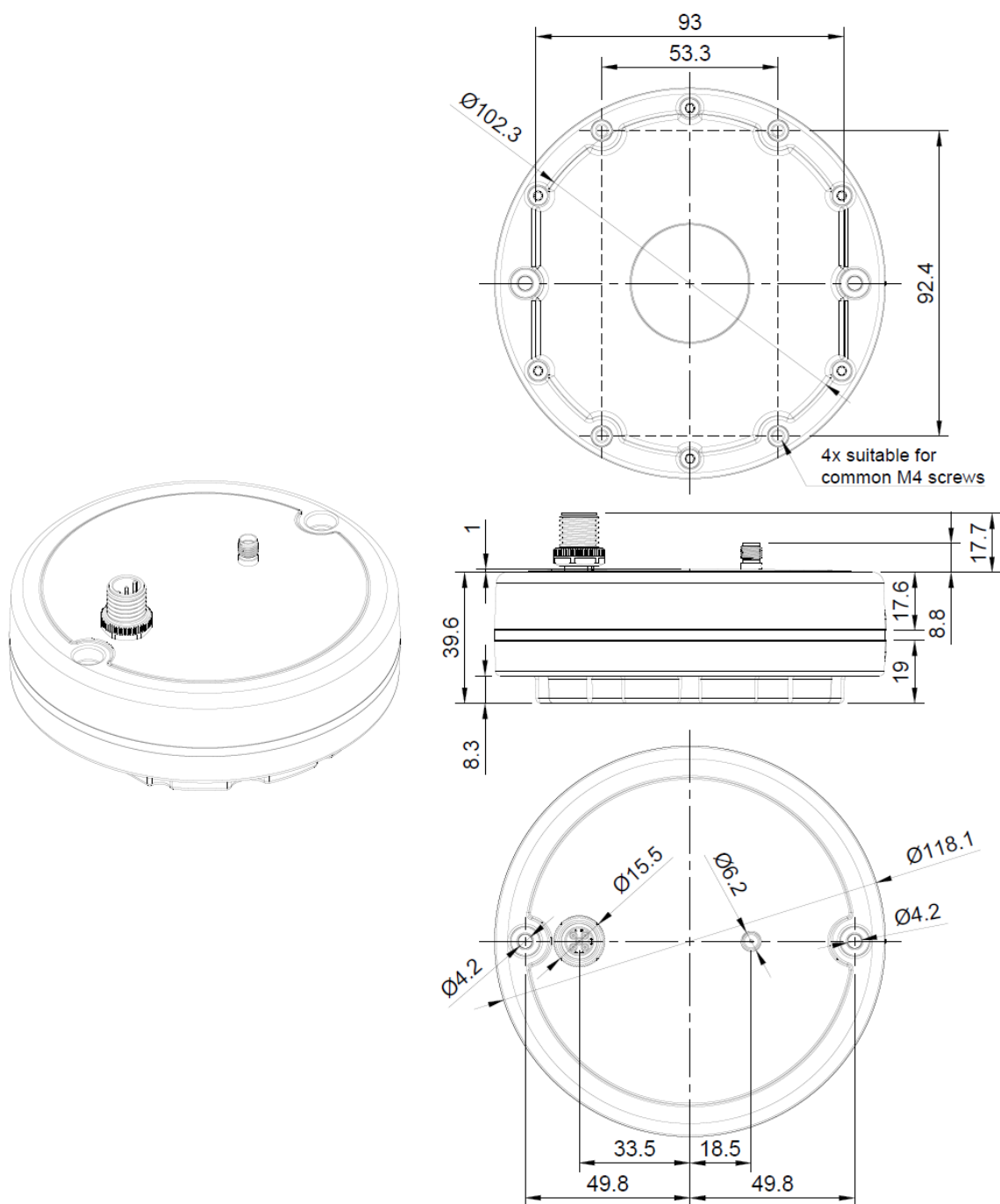
TECHNICAL DRAWING "FLAT" FLAT DESIGN



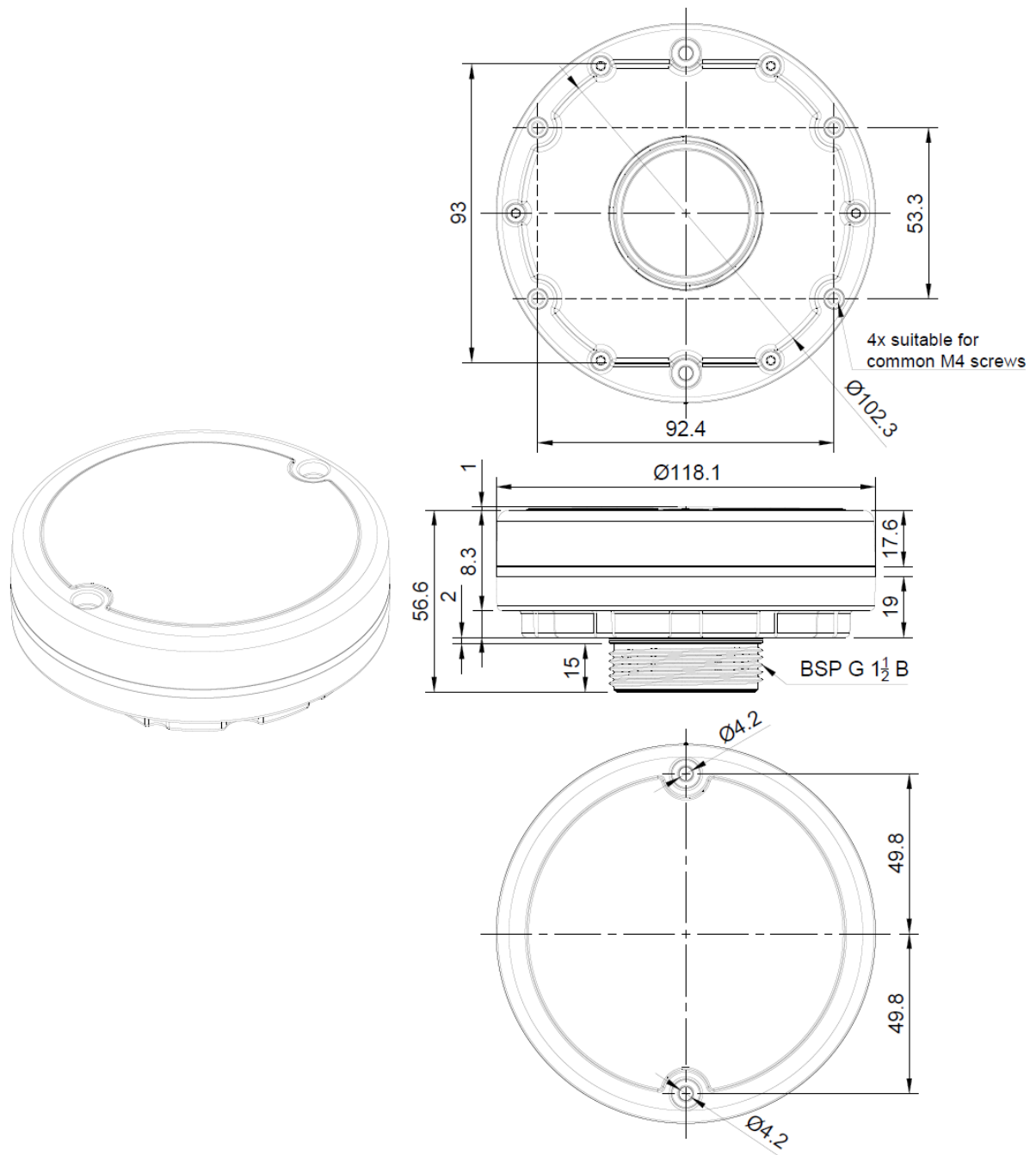
TECHNICAL DRAWING "FLAT" WITH SMA CONNECTOR



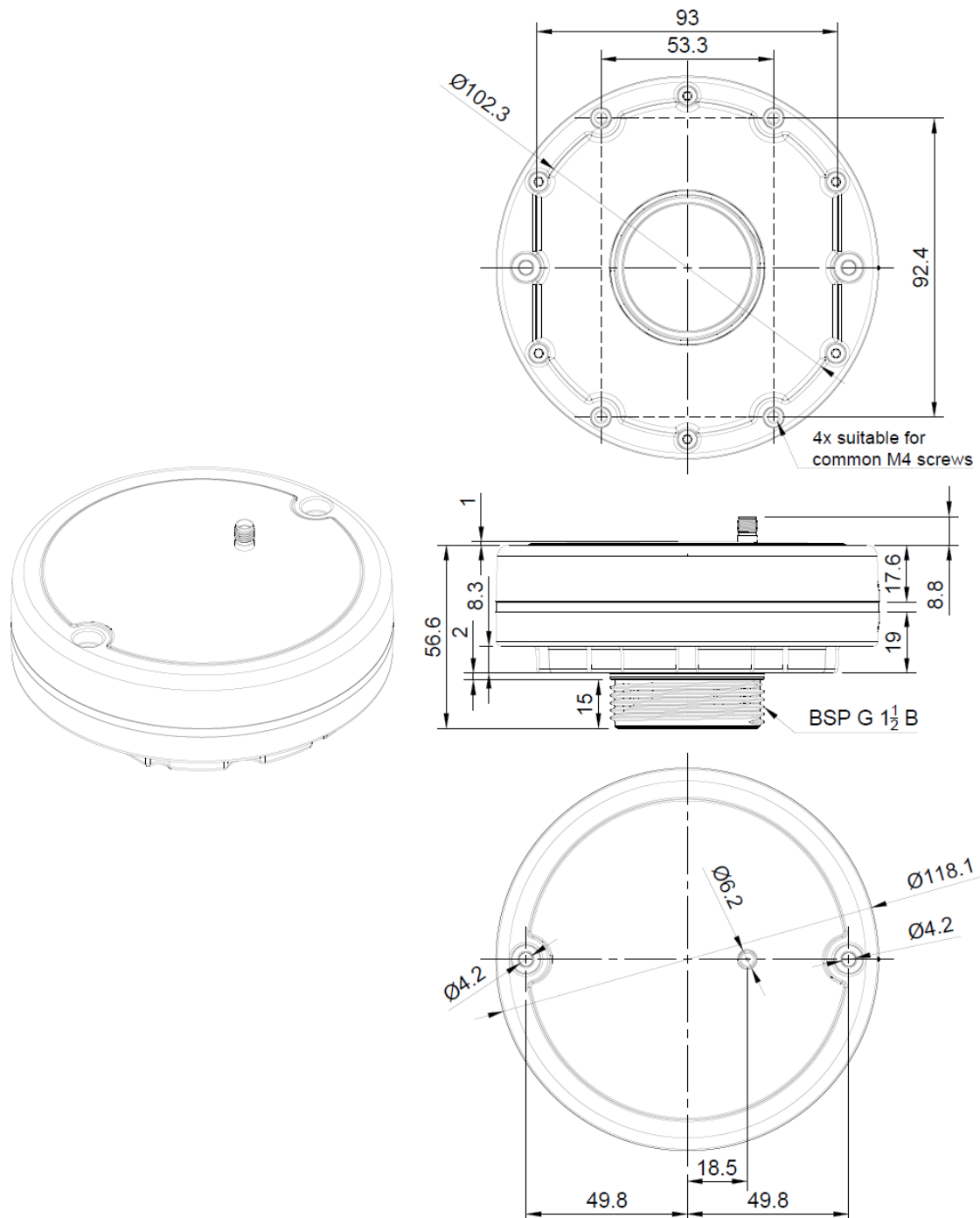
TECHNICAL DRAWING "FLAT" WITH SMA AND M12 CONNECTORS



TECHNICAL DRAWING "THREAD" WITH 1.5-INCH THREAD



TECHNICAL DRAWING "THREAD" WITH 1.5-INCH THREAD AND SMA CONNECTOR



TECHNICAL DRAWING "THREAD" WITH 1.5-INCH THREAD, SMA, AND M12 CONNECTORS

