

SENSOR PRODUCT SELECTOR GUIDE

Secure sensing solutions for automotive and industrial IoT



OVERVIEW

With successful experiences over 30 years and over 3 billion units shipped worldwide, NXP is a leader serving applications in the automotive, medical and industrial market spaces. NXP's Sensor solutions include a breadth of accelerometers, magneto-resistive and pressure solutions

covering different performances, sensing ranges and form factors. The portfolio is complemented with class leading development and enablement support spanning hardware tools, software tools and use case algorithms.

MOTION SENSORS

Part Number	Description	Interface	Other	Package
High g Accelerometers				
FXLS90333	2-axis, XY, ±50 to 500 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90433	2-axis, XZ, ±50 to 500 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90230	1-axis, X, ±50 to 500 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90130	1-axis, Z, ±50 to 500 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93333	2-axis, ±XY, 50 to 500 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93433	2-axis, XZ, ±50 to 500 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93230	1-axis, X, ±50 to 500 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90130	1-axis, Z, ±50 to 500 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
Medium g Accelerometers				
FXLS90322	2-axis, XY, ±15.5 to 150 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90422	2-axis, XZ, ±15.5 to 150 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90220	1-axis, X, ±15.5 to 150 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90120	1-axis, Z, ±15.5 to 150 g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93322	2-axis, XY, ±15.5 to 150 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93422	2-axis, XZ, ±15.5 to 150 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93220	1-axis, X, ±15.5 to 150g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS90120	1-axis, Z, ±15.5 to 150 g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
Low g Accelerometers				
FXLS90421	2-axis, XZ, X axis ±15.5 to 150g, Z axis ±1.5 to 20g, 16-bit	SPI, DSI3	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS93421	2-axis, XZ, X axis ±15.5 to 150g, Z axis ±1.5 to 20g, 16-bit	PSI5	Auto grade 1 qual, -40 °C to 125 °C, ISO 26262:2018 ASIL B rating	QFN 4 x 4 mm
FXLS8964AFR3	±2 to 16 g, low-power 12-bit 3-axis accelerometer for automotive KeyFob application	I ² C, SPI	Auto qual, -40 °C to 105 °C	DFN 2 x 2x 0.95 mm
FXLS8967AFR3	±2 to 16 g, low-power 12-bit 3-axis accelerometer for automotive security and convenience applications	I ² C, SPI	Auto qual, -40 °C to 105 °C	DFN 2 x 2 x 0.95 mm
FXLS8974CFR3	±2 to 16 g, low-power 12-bit 3-axis accelerometer for use in a wide range of industrial and medical IoT applications	I ² C, SPI	Industrial qual, -40 °C to 105 °C	DFN 2 x 2x 0.95 mm

PRESSURE SENSORS

Current Part Number	Description	Interface	Other	Package
Wireless Sensor / Tire Pressure Monitoring				
NTM88Hxx5x	90 kPa to 930 kPa	GPIO, RF, LF	Passenger Car and Light Duty Pressure Range with single or dual axis accelerometers, SO8 CPU with 16 kB flash, 512 B RAM, 315/434 MHz transceiver, 125 kHz LF receiver, temperature and voltage monitoring, auto grade 1 qualification	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
NTM88Jxx5x	90 kPa to 1110 kPa	GPIO, RF, LF	Medium Duty Pressure Range with dual-axis accelerometers, SO8 CPU with 16 kB flash, 512 B RAM, 315/434 MHz transceiver, 125 kHz LF receiver, temperature and voltage monitoring, auto grade 1 qualification	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
NTM88K135ST1*	90kPa to 1518 kPa	GPIO, RF, LF	Heavy Duty Pressure Range with dual-axis accelerometers, SO8 CPU with 16 kB flash, 512 B RAM, 315/434 MHz transceiver, 125 kHz LF receiver, temperature and voltage monitoring, auto grade 1 qualification	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
Battery Pressure Monitoring				
NBP8FD4x	40 kPa to 250 kPa	SPI	Absolute FIFO, relative and rate-of-change detections, host wake-up, auto grade 1 qualification	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
NBP9FD4x	40 kPa to 250 kPa	SPI, PWM	Absolute FIFO, relative and rate-of-change detections, host wake-up, auto grade 1 qualification	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)

SELECTOR GUIDE SENSORS

PRESSURE SENSORS (cont.)

Current Part Number	Description	Interface	Other	Package
Barometric Pressure Sensors (Medical/Consumer/Industrial)				
FXPQ3115BVx	20-115 kPa, 1.5 kPa or 25 cm resolution	I ² C	Biomedical Pressure Sensor, -40 °C to 85 °C operating temperature	LGA 3 x 5mm
MPL115A1x	50-115 kPa, 1.0 kPa or 25 cm resolution	SPI	Pressure, temperature, -40 °C to 105 °C operating temperature	LGA 3 x 5mm
MPL115A2x	50-115 kPa, 1.0 kPa or 25 cm resolution	I ² C	Pressure, temperature, -40 °C to 105 °C operating temperature	LGA 3 x 5mm
MPL3115A2x	20-115 kPa, 1.5 kPa or 25 cm resolution	I ² C	2 interrupts on pressure, altitude, temperature, -40 °C to 85 °C operating temperature	LGA 3 x 5mm
MPL3150A2x	50-150 kPa, 1.5 kPa or 25 cm resolution	I ² C	2 interrupts on pressure, altitude, temperature, -40 °C to 85 °C operating temperature	LGA 3 x 5mm
Barometric Pressure Sensors (Automotive/Industrial)				
FXPS7115DS4x	40 kPa to 115 kPa	SPI	4.67 % accuracy over entire temperature range and life, Media resistant gel, -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7115DI4x	40 kPa to 115 kPa	I ² C	4.67 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7165DS4x	60 kPa to 165 kPa	SPI	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7165DI4x	60 kPa to 165 kPa	I ² C	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7250DS4x	20 kPa to 250 kPa	SPI	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7250DI4x	20 kPa to 250 kPa	I ² C	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7400DS4x	20 kPa to 400 kPa	SPI	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7400DI4x	20 kPa to 400 kPa	I ² C	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7550DS4x	20 kPa to 550 kPa	SPI	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7550DI4x	20 kPa to 550 kPa	I ² C	2 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7250A4x	20 kPa to 250 kPa	Analog	3 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7400A4x	20 kPa to 400 kPa	Analog	3 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
FXPS7550A4x	20 kPa to 550 kPa	Analog	3 % accuracy over entire temperature range and life, Media resistant gel -40 °C to 125 °C operating temperature	4 x 4 x 1.98 mm QFN-FAM (Wettable Flanks)
Vacuum Pressure Sensors				
MPXV7002	-2 kPa to 2 kPa	Analog	2.5 % accuracy	SOP ported & dual port
MPXV7007	-7 kPa to 7 kPa	Analog	5 % accuracy	SOP ported, SOP dual port
MPXV7025	-25 kPa to 25 kPa	Analog	5 % accuracy	SOP ported, SOP dual port
MP3V5050V	-50 kPa to 0 kPa	Analog	2 % accuracy	SOP ported, SOP dual port
MPXV5050VC6	-50 kPa to 0 kPa	Analog	2.5 % accuracy	SOP ported
MPXV6115V	-115 kPa to 0 kPa	Analog	1.5 % accuracy	SOP & SOP ported
Differential/Gauge Pressure Sensors < 10 kPa				
MP3V5004	0 kPa to 3.92 kPa	Analog	1.5 % accuracy	SOP, SOP dual port, SOP ported
MPXV(Z)5004	0 kPa to 3.92 kPa	Analog	2.5 % accuracy with auto zero	SOP, SOP dual port, SOP ported
MPXV(Z)4006	0 kPa to 6 kPa	Analog	2.5 % accuracy FSS	SOP, SOP dual port, SOP ported
MP3V5010	0 kPa to 10 kPa	Analog	5 % accuracy	SOP, SOP dual port, SOP ported
MPx5010	0 kPa to 10 kPa	Analog	5 % accuracy	SOP, SOP dual port, SOP ported
MPx2010	0 kPa to 10 kPa	Analog	1 % accuracy	Mpak ported
Differential/Gauge Pressure Sensors up to 115 kPa				
MPX2300DT1	0 kPa to 40 kPa	Analog	1.5% accuracy, disposable bio compatible system	ChipPak package
MPVZ5050	0 kPa to 50 kPa	Analog	2.5 % accuracy, media resistant gel	SOP ported
MPXx2053	0 kPa to 50 kPa	Analog	2 % accuracy	x=V SOP & ported SOP, x=M MPAK
MPXM2051G	0 kPa to 50 kPa	Analog	1 % accuracy	MPAK
MPXx5050	0 kPa to 50 kPa	Analog	2.5 % accuracy	SOP ported & dual port
MPXx2102A	0 kPa to 100 kPa	Analog	2 % accuracy	x=V SOP & ported SOP, x=M MPAK
MPXV5100	0 kPa to 100 kPa	Analog	2.5 % accuracy	SOP ported & dual port

PRESSURE SENSORS (cont.)

Current Part Number	Description	Interface	Other	Package
Differential/Gauge Pressure Sensors up to 1000 kPa				
MPXx2202	0 kPa to 200 kPa	Analog	2 % accuracy	x=V SOP & ported SOP, x=M MPAK
MPX5500	0 kPa to 500 kPa	Analog	2.5 % accuracy	Unibody packages
MPX5700	0 kPa to 700 kPa	Analog	2.5 % accuracy	Unibody packages
MPX5999D	0 kPa to 1000 kPa	Analog	2.5 % accuracy	Unibody packages

* Under Development, contact a sales representative for samples

MAGNETIC SENSORS

Part Number	Description	Interface	Other	Package
Magnetic Switch				
NMH1000	Hall Effect Magnetic switch, operating voltage down to 1.2V and current consumption down to 75 nA	I ² C or stand alone	Three magnetic field thresholds +/- 100G, +/- 160G, or +/-230G. Three sample rates 0.1Hz, 1Hz, or 10Hz. Operating temperature -40C to +85C	DFN 1.4 x 1.4 x 0.85 mm
Programmable Angle sensors				
KMA310/A	Automotive programmable angle sensor	Single channel, analog/ SENT output	Angle range 180°, max operating temperature 180°C	SOT1288-3 (SIL3)
KMA320/A	Automotive programmable angle sensor	Dual channel, analog/ SENT output	Angle range 180°, max operating temperature 180°C	SOT1188-2 (SIL4)
KMA321/A	Automotive programmable angle sensor	Single channel, analog/ SENT output	Angle range 180°, max operating temperature 180°C	SOT1188-2 (SIL4)
KMZ80	General purpose programmable angle sensor	Single channel, analog/ SENT output	Angle range 180°, max operating temperature 150°C	SOT96-1
Angle sensors with integrated Amplifier				
KMZ60/A	Angle sensor with integrated amplifier	amplified sine / cosine; 0.07.... 0.93 Vcc	Angle range 180° max operating temperature 150°C	S08; SOT96-1

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