

MICROFORCE SENSORS, FMA SERIES

TABLE 3. ENVIRONMENTAL SPECIFICATIONS

CHARACTERISTIC	PARAMETER
Humidity	0% to 95% RH, non-condensing
Vibration	MIL-STD-202, Method 214, Condition 1F (20.71 Gms)
Shock	MIL-STD-202, Method 213, Condition A (50 G)
Life ¹	1 million full scale force cycles minimum

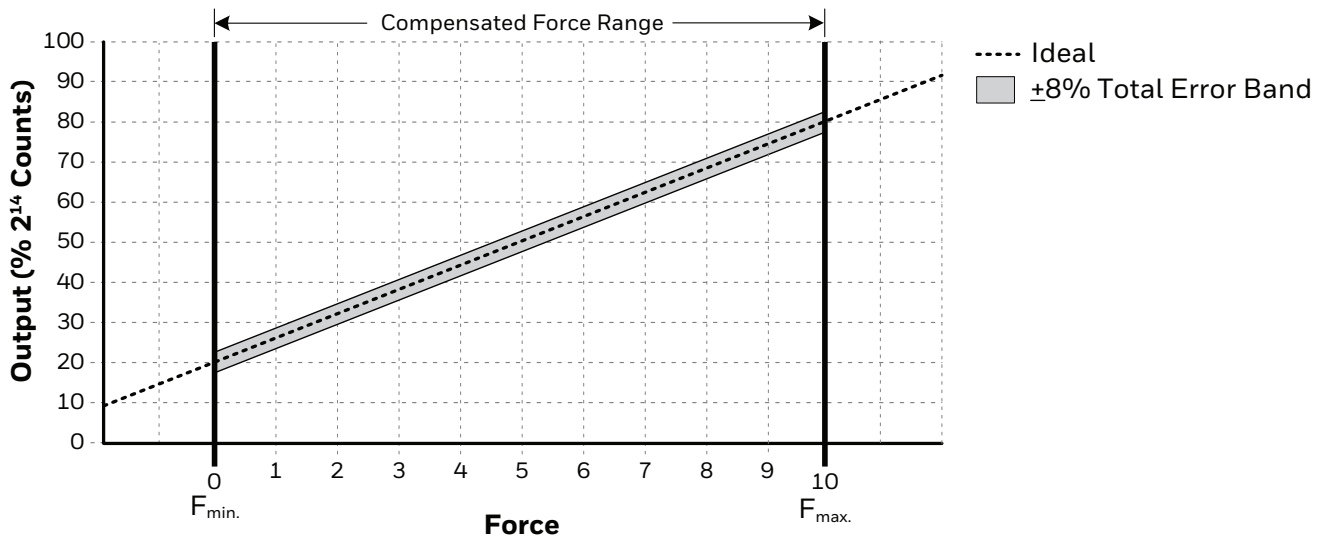
¹Life may vary depending on specific application in which the sensor is utilized.

TABLE 4. MATERIALS

COMPONENT	MATERIAL ¹
Covers	liquid crystal polymer
Sphere contact element	stainless steel 440C
Substrate	FR4
Adhesives	epoxy, silicone
Electronic components	silicon, glass, solder

¹Contact Honeywell customer service for detailed material information.

FIGURE 1. TRANSFER FUNCTION LIMITS

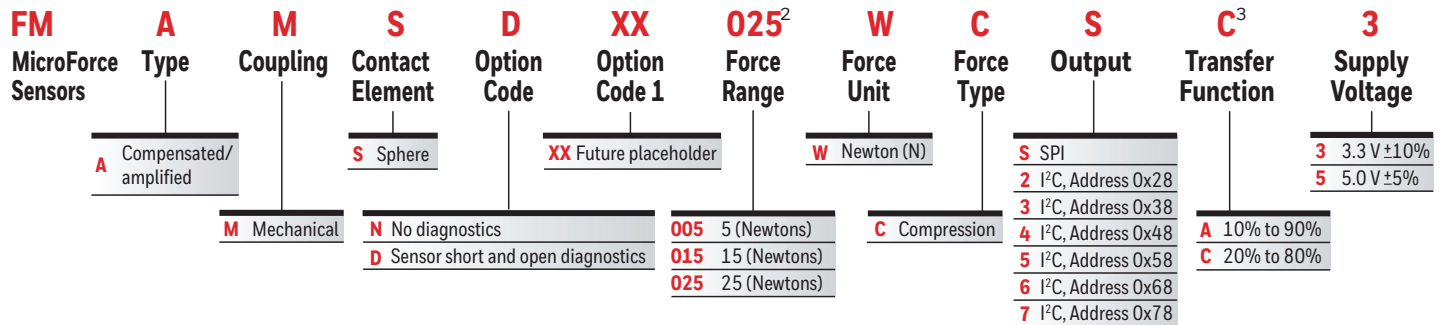


$$\text{Output (\% of } 2^{14} \text{ counts)} = \frac{60\%}{\text{Force}_{\text{range}}} \times (\text{Force}_{\text{applied}}) + 20\%$$

MICROFORCE SENSORS, FMA SERIES

FIGURE 2. NOMENCLATURE AND ORDER GUIDE

For example, **FMAMSDXX025WCSC3** defines an FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 25 N force range, force unit in N, compression force type, SPI digital output, 20% to 80% transfer function, 3.3 Vdc supply voltage¹



¹ Custom configurations are available upon request. Please contact Honeywell Sales.

² Three characters specify the desired force level; allowable characters are the numbers 0 through 9. See Table 5 for currently configurable force ranges.

³ For other available transfer functions, contact Honeywell Customer Service.

Note: Breakout boards, designed for use with the Honeywell SEB002 Sensor Evaluation Kit, are available with the FMA Series sensor already mounted. Please contact your Honeywell representative for details.

TABLE 5. FMA SERIES AVAILABILITY¹

CATALOG LISTING	FORCE RANGE	OUTPUT	DESCRIPTION
FMAMSDXX005WCSC3	5 N	SPI	FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 5 N force range, compression force type, SPI digital output, 20% to 80% transfer function, 3.3 V ±10% supply voltage
FMAMSDXX005WC2C3		I ² C, address 0x28	FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 5 N force range, compression force type, I ² C digital output, address 0x28, 20% to 80% transfer function, 3.3 V ±10% supply voltage
FMAMSDXX015WCSC3	15 N	SPI	FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 15 N force range, compression force type, SPI digital output, 20% to 80% transfer function, 3.3 V ±10% supply voltage
FMAMSDXX015WC2C3		I ² C, address 0x28	FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 15 N force range, compression force type, I ² C digital output, address 0x28, 20% to 80% transfer function, 3.3 V ±10% supply voltage
FMAMSDXX025WCSC3	25 N	SPI	FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 25 N force range, compression force type, SPI digital output, 20% to 80% transfer function, 3.3 V ±10% supply voltage
FMAMSDXX025WC2C3		I ² C, address 0x28	FMA Series Force Sensor, compensated/amplified, mechanically coupled, sphere contact element, sensor short and open diagnostics, 25 N force range, compression force type, I ² C digital output, address 0x28, 20% to 80% transfer function, 3.3 V ±10% supply voltage

¹ These catalog listings are production released and are readily available. Other configurations per Figure 2 are possible; however, minimum order quantity thresholds and NRE may apply. Please consult the factory.