NPA Application guide Rev D

- NPA Application Guide Revision D now available
- Main changes:
  - Output characteristics
  - I^2C programming
  - Diagnostic features

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Section 2.2

Pressure can be calculated from the sensor output using the following formula:

$$P = P_{min} + \left(\frac{Out - Out_{min}}{Out_{max} - Out_{min}}\right).(P_{max} - P_{min})$$

where P = calculated pressure

Out = measured sensor output

Section 4.7

4.7 Changing I²C Slave Address (cont.)

The procedure for changing the address is in Table 9 below:

Table 9: Changing I²C Slave Address

		Data on I²C Bus (hex values)				
	Action	Byte 1	Byte 2	Byte 3	Byte 4	Notes
1	Put sensor into command mode	[7 bit address *] + [Write bit = 0]	A0	00	00	Data must be sent within 6ms of power up
2	Command to read EEPROM word 02 from sensor	[7 bit address *] + [Write bit = 0]	02	00	00	
3	Fetch EEPROM word 02	[7 bit address *] + [Read bit = 1]	5A (response byte)	Word 02 [bits 15:8]	Word 02 [bits 7:0]	
4	Modify Word 02 in user software					Bits [9:3]: I²C address required Bits [12:10]: 011 (communication lock)
5	Write new version of Word 02 to sensor EEPROM	[7 bit address *] + [Write bit = 0]	42	Word 02 [bits 15:8]	Word 02 [bits 7:0]	
6	Exit command mode & start normal operating mode	[7 bit address *] + [Write bit = 0]	80	00	00	

*I²C address = 0x28 for standard parts

'Communication Lock' bits added

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Section 4.8

4.8 Diagnostic Features

The NPA-700 incorporates a range of diagnostic features to detect internal faults. The result of the check is sent as part of the digital output data. The first 2 bits of the first pressure byte (labelled 15 & 14 in Figure 9 on page 10) are status bits and are set to 00 if no errors are detected.

Bit [15]	Bit [14]	Meaning
0	0	Normal operation (good data).
0	1	The sensor is in a special mode used for programming.
1	0	The data present at the output has already been read since the last internal measurement cycle i.e. a repeat of previous reading. This will occur if the sensor is polled at a faster rate than the sensor's internal measurement process. It is recommended that polling should be slower than 1.67kHz (0.6ms interval).
1	1	Internal fault exists.

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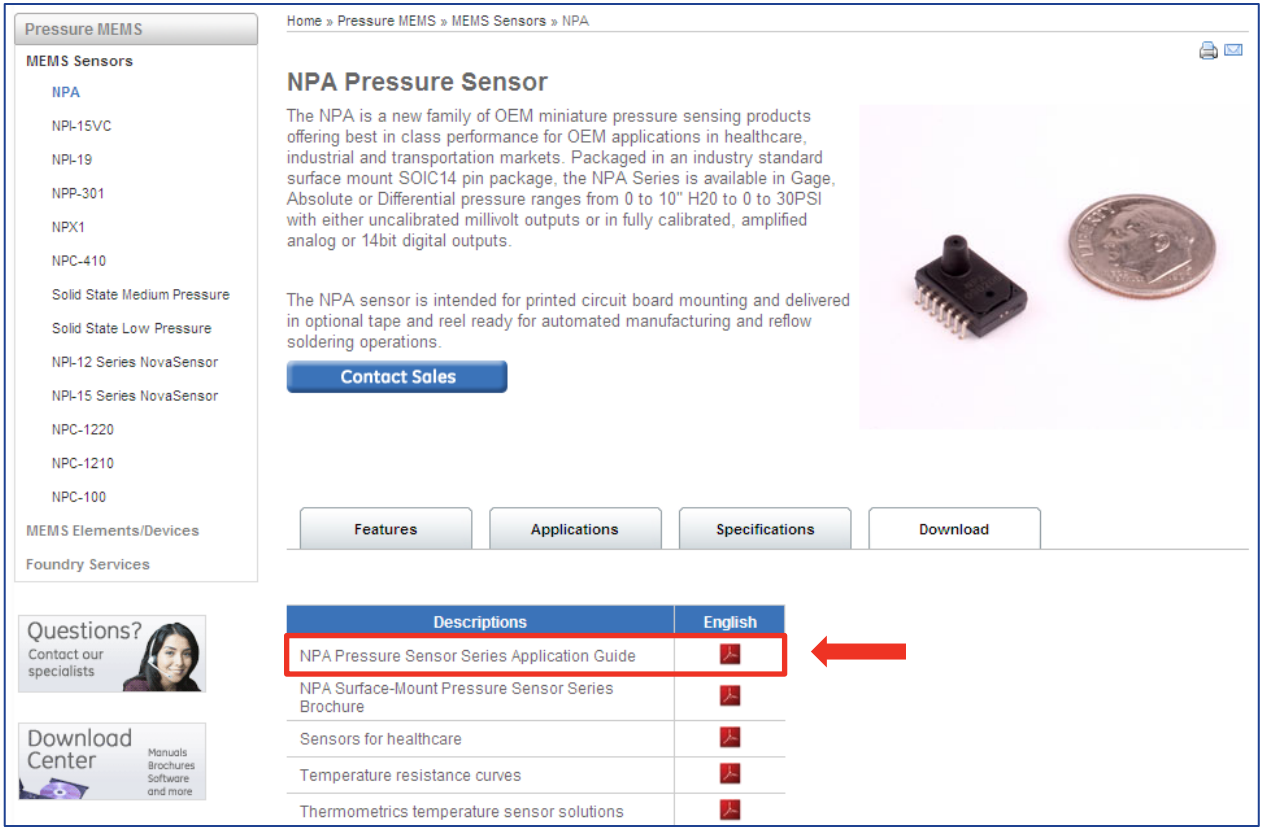
- Uploaded on web site: http://www.ge-mcs.com/download/pressure-mems/910-289D.pdf
- Send to: New & existing customers, channel partners
- Opportunity to promote NPA range



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