**Table 3a Sensor Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x180 (Default) | | |
| **Rate** | | 100Hz [Default] | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Pressure1 MSB | | U16 | Big Endian |
| **1** | Pressure1 LSB | |
| **2** | Pressure2 MSB | | U16 | Big Endian |
| **3** | Pressure2 LSB | |
| **4** | Pressure3 MSB | | U16 | Big Endian |
| **5** | Pressure3 LSB | |
| **6** | Pressure4 MSB | | U16 | Big Endian |
| **7** | Pressure4 LSB | |

**Table 3b Sensor Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x181 (Default) | | |
| **Rate** | | 100Hz [Default] | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Pressure5 MSB | | U16 | Big Endian |
| **1** | Pressure5 LSB | |
| **2** | Pressure6 MSB | | U16 | Big Endian |
| **3** | Pressure6 LSB | |
| **4** | Pressure7 MSB | | U16 | Big Endian |
| **5** | Pressure7 LSB | |
| **6** | Pressure8 MSB | | U16 | Big Endian |
| **7** | Pressure8 LSB | |

**Table 3c Sensor Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x182 (Default) | | |
| **Rate** | | 100Hz [Default] | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Pressure9 MSB | | U16 | Big Endian |
| **1** | Pressure9 LSB | |
| **2** | Pressure10 MSB | | U16 | Big Endian |
| **3** | Pressure10 LSB | |
| **4** | Pressure11 MSB | | U16 | Big Endian |
| **5** | Pressure11 LSB | |
| **6** | Pressure12 MSB | | U16 | Big Endian |
| **7** | Pressure12 LSB | |

**Table 3d Sensor Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x183 (Default) | | |
| **Rate** | | 100Hz [Default] | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Pressure13 MSB | | U16 | Big Endian |
| **1** | Pressure13 LSB | |
| **2** | Pressure14 MSB | | U16 | Big Endian |
| **3** | Pressure14 LSB | |
| **4** | Pressure15 MSB | | U16 | Big Endian |
| **5** | Pressure15 LSB | |
| **6** | Pressure16 MSB | | U16 | Big Endian |
| **7** | Pressure16 LSB | |

**Table 3e Sensor Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x184 (Default) | | |
| **Rate** | | 1Hz FIXED | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Temperature MSB | | S16 | Temperature x100. Signed Int16, Divide by 100 for 0C. |
| **1** | Temperature LSB | |
| **2** | Sensor No MSB | | U16 |  |
| **3** | Sensor No LSB | |
| **4** | Range | | U8 | Range – See table 5a |
| **5** | Firmware Revision | | U8 | Firmware Revision |
| **6** | Spare | | U8 | Reserved for future use |
| **7** | Spare | | U8 | Reserved for future use |

**Table 4a Sensor Data – CAN-FD Format**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x180 (Default) | | |
| **Rate** | | 100Hz [Default] | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Pressure1 MSB | | U16 | Big Endian |
| **1** | Pressure1 LSB | |
| **2** | Pressure2 MSB | | U16 | Big Endian |
| **3** | Pressure2 LSB | |
| **4** | Pressure3 MSB | | U16 | Big Endian |
| **5** | Pressure3 LSB | |
| **6** | Pressure4 MSB | | U16 | Big Endian |
| **7** | Pressure4 LSB | |
| **8** | Pressure5 MSB | | U16 | Big Endian |
| **9** | Pressure5 LSB | |
| **10** | Pressure6 MSB | | U16 | Big Endian |
| **11** | Pressure6 LSB | |
| **12** | Pressure7 MSB | | U16 | Big Endian |
| **13** | Pressure7 LSB | |
| **14** | Pressure8 MSB | | U16 | Big Endian |
| **15** | Pressure8 LSB | |
| **16** | Pressure9 MSB | | U16 | Big Endian |
| **17** | Pressure9 LSB | |
| **18** | Pressure10 MSB | | U16 | Big Endian |
| **19** | Pressure10 LSB | |
| **20** | Pressure11 MSB | | U16 | Big Endian |
| **21** | Pressure11 LSB | |
| **22** | Pressure12 MSB | | U16 | Big Endian |
| **23** | Pressure12 LSB | |
| **24** | Pressure13 MSB | | U16 | Big Endian |
| **25** | Pressure13 LSB | |
| **26** | Pressure14 MSB | | U16 | Big Endian |
| **27** | Pressure14 LSB | |
| **28** | Pressure15 MSB | | U16 | Big Endian |
| **29** | Pressure15 LSB | |
| **30** | Pressure16 MSB | | U16 | Big Endian |
| **31** | Pressure16 LSB | |

**Table 4b Sensor Data – CAN-FD Housekeeping**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identifier** | | CAN ID= 0x181 (Default) | | |
| **Rate** | | 1Hz FIXED | | |
| **Byte** | **Description** | | **Format** | **Notes** |
| **0** | Temperature MSB | | S16 | Temperature x100. Signed Int16, Divide by 100 for 0C. |
| **1** | Temperature LSB | |
| **2** | Sensor No MSB | | U16 |  |
| **3** | Sensor No LSB | |
| **4** | Range | | U8 | Range – See table 5a |
| **5** | Firmware Revision | | U8 | Firmware Revision |
| **6** | Spare | | U8 | Reserved for future use |
| **7** | Spare | | U8 | Reserved for future use |

**Conversion to Engineering Units**

Conversion of pressure data is as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Range Byte | Gain | Offset | Range [mBar] | Notes |
| 0x00 | 1/320 | 100 | +/-100mBar | mBar=(Pressure-32768)/320 |
| 0x01 | 1/162.5 | 200\* | +/-200mBar | mBar=(Pressure-32768)/162.5) |
| 0x0A | 1/327.68 | 50 | +/-50mV | mV=(Data-32768/327.675) |

**Table 5a. Calibration Info.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Range** | **Range Byte** | **Divisor** | **Offset** | **Notes** |
| +/-10mBar | 0x30 | 3200 | 32768 |  |
| +/-20mBar | 0x31 | 1600 | 32768 |  |
| +/-50mBar | 0x32 | 640 | 32768 |  |
| +/-100mBar | 0x00 | 320 | 32768 |  |
| +/-200mBar | 0x01 | 162.5 | 32768 |  |
| +;/-350mBar | 0x02 | 90 | 32768 |  |
| +/-500mBar | 0x03 | 64 | 32768 |  |
| +/-1Bar | 0x04 | 32000 | 32768 |  |
| +/-2Bar | 0x05 | 16000 | 32768 |  |
| +/-3.5Bar | 0x06 | 9000 | 32768 |  |
| +/-7Bar | 0x07 | 4500 | 32768 |  |
| +/-10Bar | 0x08 | 3200 | 32768 |  |
| +/-20Bar | 0x09 | 1600 | 32768 |  |
|  |  |  |  |  |
| +/-1PSI | 0x20 | 32000 | 32768 |  |
| +/-1.5PSI | 0x21 | 20000 | 32768 |  |
| +/-2PSI | 0x22 | 16000 | 32768 |  |
| +/-3PSI | 0x23 | 10000 | 32768 |  |
| +/-5PSI | 0x24 | 6400 | 32768 |  |
| +/-10PSI | 0x25 | 3200 | 32768 |  |
| +/-15PSI | 0x26 | 2000 | 32768 |  |
| +/-30PSI | 0x27 | 1000 | 32768 |  |
| +/-50PSI | 0x28 | 640 | 32768 |  |
| +/-100PSI | 0x29 | 320 | 32768 |  |
| +/-150PSI | 0x2A | 200 | 32768 |  |
| +/-300PSI | 0x2B | 100 | 32768 |  |

**Appendix A**

**System Zero**

A System Zero can be performed at any time, and is saved to non-volatile memory, for subsequent Power On.

To Sensor

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Identifier** | | 0x7F2 | | | |
| **Rate** | | N/A | | | |
| **Byte** | **Description** | | **Scaling** | **Value** | **Notes** |
| 0 | Sensor No. MSB | | 1 | 0xnn | Sensor No MSB |
| 1 | Sensor No. LSB | | 1 | 0xnn | Sensor No LSB |
| 2 | Opcode1 | | 1 | 0x64 | FIXED |
| 3 | Opcode2 | | 1 | 0x63 | FIXED |
| 4 | ZERO OPCODE | | 1 | 0x32 | ZERO Message |
| 5 | N/A | | 1 | 0x00 |  |
| 6 | N/A | | 1 | 0x00 |  |
| 7 | N/A | | 1 | 0x00 |  |

**Revision History:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision History** | | | |
| Revision | Date | Notes | Author |
| 1.0 |  | 1st Issue | Rob A |
|  |  |  |  |