

Communication with pressure sensors

DMU21 device register map firmware version 1.0x and newer

Revision A 2023

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Device register map

This section contains tables where you can find addresses of parameters in the device which you can read or write. Each device has its own device map and addresses can vary based on the device type. It is strongly prohibited to write to or read from any other addresses except addresses written here in this manual. This can cause device malfunction. Addresses ar e in hex format written as 2 bytes words. Float values are represented in IEEE-754 format and are stored as little endian representation. Integer values are stored as little endian as well.

Device: DMU21

RAM space area map

Address (hex)	Description	Value type
0000	Filtered value of primary ADC	32 bit float
0002	Filtered value of secondary ADC	32 bit float
0004	Output DAC	16 bits integer
0005	Raw primary value without correction (pressure)	32 bit float
0007	Raw secondary value (temperature)	32 bit float
0009	Primary value (pressure)	32 bit float
000B	Secondary value (temperature)	32 bit float
000D	Output value	32 bit float
000F	Primary value without autozero correction	32 bit float

EEPROM space area map

Address	Description	Value type
0000	Protocol: 0 – Modbus RTU protocol 1 – SDI12 specific protocol	8 bit char
0000	Databits: 0 – 5 bits 1 – 6 bits 2 – 7 bits 3 – 8 bits	8 bit char
0001	Parity: 0 – None 1 – Even 2 – Odd	8 bit char
0001	Stopbits: 1 – 1 stopbit 2 – 2 stopbits	8 bit char
0002	Baudrate direct value	32 bit integer

0004	Device address	8 bit char
0004	SDI12 address	8 bit char
0005	Filtration for the ADC: Each time that ADC sample is taken, following formula is apply: ActualADC = ActualADC + (ADC – ActualADC) * Filtration	32 bit float
0028	Correction minimum value input (CorXmin)	32 bit float
002A	Correction maximum value input (CorXmax)	32 bit float
002C	Correction minimum value output (CorYmin)	32 bit float
002E	Correction maximum value output (CorYmax) Primary value (pressure) is counted with following formula: PrimaryValue = (RawPrimaryValue - CorXmin) * (CorYmax - CorYmin)) / (CorXmax - CorXmin)) + CorYmin)	32 bit float
0030	Correction offset This value is added to the PrimaryValue after above correction is applied, final PrimaryValue is then counted by formula: PrimaryValue = PrimaryValue + Offset	32 bit float
1CA8	First byte: Limit 1 Enable (1 = enable, 0 = disable)	8 bit char
1CA8	From second byte of register: Limit 1 On value	32 bit float
1CAA	From second byte of register: Limit 1 Off value	32 bit float
1CAC	Second byte: Limit 2 Enable (1 = enable, 0 = disable)	8 bit char
1CAD	Limit 2 On value	32 bit float
1CAF	Limit 2 Off value	32 bit float
1CB1	First byte: Limit 3 Enable (1 = enable, 0 = disable)	8 bit char
1CB1	From second byte of register: Limit 3 On value	32 bit float
1CB3	From second byte of register: Limit 3 Off value	32 bit float
1CB5	Second byte: Limit 4 Enable (1 = enable, 0 = disable)	8 bit char
1CB6	Limit 4 On value	32 bit float
1CB8	Limit 4 Off value	32 bit float