

SR300-D1 register list

(0x0000)

Communication settings

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
device address	0x0000	u16	RW	The modbus device address of the instrument. Valid addresses range from 1 to 247. A reboot (hard or soft) is required to apply the settings.	N/A	1	True	Undefined
serial baud rate	0x0001	u16	RW	Serial baudrate / 100. Supported baudrates are 9600, 19200, 38400 and 115200. A reboot (hard or soft) is required to apply the settings.	N/A	192	True	Undefined
serial baud parity	0x0002	u16	RW	Parity bit setting for serial communication. A reboot (hard or soft) is required to apply the settings.	0: no parity 1: odd parity 2: even parity	2	True	Undefined
serial baud stop bits	0x0003	u16	RW	Number of stop bits for serial communication. A reboot (hard or soft) is required to apply the settings.	1: one stop bit 2: two stop bits	1	True	Undefined

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(0x0080)

Identification

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
product model	0x0080	string32	R-	Product model string.	N/A	N/A	True	Undefined
product type	0x0090	string32	R-	Product type identification.	N/A	N/A	True	Undefined
serial number	0x00a0	string32	R-	Serial number of the instrument.	N/A	N/A	True	Undefined
firmware version	0x00b0	string32	R-	Firmware version.	N/A	N/A	False	Undefined
product version	0x00c0	string32	R-	Product version.	N/A	N/A	False	Undefined
psucom pcb serial number	0x0100	string32	R-	Serial number of the PSUCOM pcb	N/A	N/A	True	Undefined
mcusns pcb serial number	0x0110	string32	R-	Serial number of the MCUSNS pcb	N/A	N/A	True	Undefined
adcmcu pcb serial number	0x0120	string32	R-	Serial number of the ADCMCU pcb	N/A	N/A	True	Undefined
customer serial number	0x01a0	string32	R-	Customer serial number.	N/A	N/A	True	Undefined

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(0x0200) Irradiance

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
temperature compensated irradiance	0x0200	float	R-	The temperature compensated irradiance value (temperature-compensated-thermopile-voltage / sensitivity).	N/A	N/A	False	W/m ²
instrument temperature	0x0202	float	R-	The instrument temperature.	N/A	N/A	False	°C
uncompensated irradiance	0x0204	float	R-	The non-temperature compensated irradiance value (thermopile-voltage / sensitivity).	N/A	N/A	False	W/m ²
compensated irradiance stats	0x0220	statistic	R-	Statistic values for the compensated irradiance signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	W/m ²
internal temperature stats	0x0228	statistic	R-	Statistic values for temperature signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	°C
uncompensated irradiance stats	0x0230	statistic	R-	Statistic values for uncompensated irradiance signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	W/m ²

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(0x0200)

Irradiance

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
temperature compensated irradiance int	0x0270	i32	R-	The temperature compensated irradiance value (temperature-compensated-thermopile-voltage / sensitivity) in (W/m ²)/irradiance_scaling_factor.	N/A	N/A	False	Undefined
uncompensated irradiance int	0x0272	i32	R-	The non-temperature compensated irradiance value (thermopile-voltage / sensitivity), in (W/m ²)/irradiance_scaling_factor.	N/A	N/A	False	Undefined
instrument temperature int	0x0274	i16	R-	Instrument temperature in °C / scaling_factor_temperature.	N/A	N/A	False	Undefined
scaling factor irradiance	0x0275	u16	R-	Scaling factor for irradiance_int registers. Calculated from scaling_exponent_irradiance.	N/A	100	False	Undefined
scaling factor temperature	0x0276	u16	R-	Scaling factor for instrument_temperature_int register. Calculated from scaling_exponent_temperature.	N/A	100	False	Undefined

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Raw irradiance signals

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
raw adc word	0x0280	i32	R-	Raw ADC word for the channel selected in adc_channel.	N/A	N/A	False	LSB
temperature compensated thermopile voltage	0x0285	float	R-	Temperature compensated thermopile voltage (raw ADC word * thermopile-voltage-calibration-factor / (AT ² +BT+C)).	N/A	N/A	False	V
uncompensated thermopile voltage	0x0287	float	R-	Thermopile voltage (raw ADC word * thermopile-voltage-calibration-factor), in V.	N/A	N/A	False	V

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(0x0300) Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity	0x0300	float	RW	Instrument irradiance sensitivity (S), in V/(W/m ²), only persistent after the store_irradiance_calibration boolean is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date	0x0302	u64	RW	Calibration date, as u64 timestamp, only persistent after the store_irradiance_calibration boolean is set. Decimal formatting: yyyyymmss. Example: 18-03-2022 16:25 would be stored as 20220318 (time part is not stored).	N/A	N/A	True	Undefined
irradiance calibration traceability	0x0306	u16	RW	Irradiance calibration traceability register, usage not determined as of yet 0: WRR (1977).	N/A	N/A	True	Undefined
thermopile voltage calibration factor	0x030a	float	R-	Thermopile voltage calibration factor in V / LSB.	N/A	N/A	True	V/LSB
irradiance temperature compensation a	0x030c	float	R-	Temperature compensation polynomial coefficient A (quadratic term).	N/A	N/A	True	1/(°C) ²
irradiance temperature compensation b	0x030e	float	R-	Temperature compensation polynomial coefficient B (linear term).	N/A	N/A	True	1/(°C)

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance temperature compensation c	0x0310	float	R-	Temperature compensation polynomial coefficient C (offset term).	N/A	N/A	True	Undefined
store irradiance calibration	0x0320	bool	RW	When True is written to this register, the irradiance_sensitivity, irradiance_calibration_date and irradiance traceability registers are stored persistently. Will always read back as False. Note: This is a slow operation, and can take up to a second.	N/A	N/A	False	Undefined
irradiance sensitivity history 1	0x0340	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 1	0x0342	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 1	0x0346	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 2	0x034a	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 2	0x034c	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 2	0x0350	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 3	0x0354	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 3	0x0356	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 3	0x035a	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 4	0x035e	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 4	0x0360	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 4	0x0364	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 5	0x0368	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 5	0x036a	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 5	0x036e	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 6	0x0372	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 6	0x0374	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 6	0x0378	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 7	0x037c	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 7	0x037e	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 7	0x0382	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 8	0x0386	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 8	0x0388	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 8	0x038c	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 9	0x0390	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 9	0x0392	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 9	0x0396	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 10	0x039a	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 10	0x039c	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 10	0x03a0	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 11	0x03a4	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 11	0x03a6	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 11	0x03aa	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 12	0x03ae	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 12	0x03b0	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 12	0x03b4	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 13	0x03b8	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 13	0x03ba	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 13	0x03be	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 14	0x03c2	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 14	0x03c4	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 14	0x03c8	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 15	0x03cc	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 15	0x03ce	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 15	0x03d2	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 16	0x03d6	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 16	0x03d8	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 16	0x03dc	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 17	0x03e0	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 17	0x03e2	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 17	0x03e6	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 18	0x03ea	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 18	0x03ec	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 18	0x03f0	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 19	0x03f4	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 19	0x03f6	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 19	0x03fa	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 20	0x03fe	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 20	0x0400	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 20	0x0404	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 21	0x0408	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 21	0x040a	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 21	0x040e	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 22	0x0412	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 22	0x0414	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 22	0x0418	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 23	0x041c	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 23	0x041e	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 23	0x0422	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 24	0x0426	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 24	0x0428	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 24	0x042c	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 25	0x0430	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 25	0x0432	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 25	0x0436	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 26	0x043a	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 26	0x043c	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 26	0x0440	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 27	0x0444	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 27	0x0446	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 27	0x044a	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 28	0x044e	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 28	0x0450	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 28	0x0454	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 29	0x0458	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 29	0x045a	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 29	0x045e	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 30	0x0462	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 30	0x0464	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 30	0x0468	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance sensitivity history 31	0x046c	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 31	0x046e	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 31	0x0472	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

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Irradiance calibration

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
irradiance sensitivity history 32	0x0476	float	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	V/(W/m ²)
irradiance calibration date history 32	0x0478	u64	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined
irradiance calibration traceability history 32	0x047c	u16	R-	Read only. Automatically updated when store_irradiance_calibration register is set.	N/A	N/A	True	Undefined

SR300-D1 register list

(0x0480) Thermopile resistance

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
thermopile resistance	0x0480	float	R-	Thermopile resistance in Ω .	N/A	N/A	True	Ω
determine thermopile resistance	0x0482	bool	RW	Triggers a thermopile resistance measurement and updates the result in the thermopile_resistance register.	N/A	N/A	False	Undefined
thermopile shunt resistor value	0x0483	float	R-	Value of thermopile shunt sensing resistor used to compute the thermopile resistance.	N/A	N/A	True	Ω
thermopile current sensing resistor value	0x0485	float	R-	Value of thermopile current sensing resistor used to determine the thermopile resistance, in Ω .	N/A	499	True	Ω
determine thermopile resistance at startup	0x0487	bool	RW	Enable the thermopile resistance measurement at startup.	N/A	False	True	Undefined

SR300-D1 register list

(0x0500)

Fan

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
fan state	0x0500	u16	RW	The current state of the internal ventilation.	0: disabled 1: enabled 2: starting 3: error	1	True	Undefined
fan current	0x0501	i16	R-	Fan current in mA.	N/A	N/A	False	mA
fan speed	0x0502	i16	R-	Fan speed in RPM.	N/A	N/A	False	RPM
fan current lower limit	0x0503	i16	R-	Fan current lower limit in mA. The current limit below which the fan under current indicator flag is set.	N/A	30	True	mA
fan current upper limit	0x0504	i16	R-	Fan current upper limit in mA. The current limit above which the fan over current indicator flag is set.	N/A	140	True	mA
fan speed lower limit	0x0505	i16	R-	Fan speed lower limit in RPM. The fan speed limit below which the fan under speed indicator flag is set.	N/A	100	True	RPM
fan under current	0x0506	bool	R-	Fan under-current indicator.	N/A	N/A	False	Undefined
fan over current	0x0507	bool	R-	Fan over-current indicator.	N/A	N/A	False	Undefined

SR300-D1 register list

(0x0580)
Heater

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
heater state	0x0580	u16	RW	The current state of the internal heating.	0: disabled 1: enabled 3: error	1	True	Undefined
heater duty cycle	0x0581	u16	RW	Heater duty cycle percentage for heater power control. Values will be rounded to a multiple of 10 (i.e. duty cycle is settable in steps of 10%). Values lower than 10 will always be rounded upwards (i.e. a duty cycle of 0% is not possible).	N/A	100	True	%
heater current	0x0582	i16	R-	Heater current in mA.	N/A	N/A	False	mA
heater current lower limit	0x0583	i16	R-	Heater current lower limit in mA. The heater current below which the heater under current indicator flag is set.	N/A	200	True	mA
heater current upper limit	0x0584	i16	R-	Heater current upper limit in mA. The heater current above which the heater over current indicator flag is set.	N/A	500	True	mA
heater under current	0x0585	bool	R-	Heater under-current indicator.	N/A	N/A	False	Undefined
heater over current	0x0586	bool	R-	Heater over-current indicator.	N/A	N/A	False	Undefined

SR300-D1 register list

(0x0600) Accelerometer

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
tilt	0x0600	float	R-	Tilt in the z-axis in °, calculates as: $\arctan2(\sqrt{x^2+y^2},z)$.	N/A	N/A	False	°
rotation	0x0602	float	R-	Rotation around the z-axis, in °. 0 ° means that the connector is facing downwards.	N/A	N/A	False	°
accelerometer x raw	0x0604	float	R-	Raw accelerometer x value, in counts.	N/A	N/A	False	Undefined
accelerometer y raw	0x0606	float	R-	Raw accelerometer y value, in counts.	N/A	N/A	False	Undefined
accelerometer z raw	0x0608	float	R-	Raw accelerometer z value, in counts.	N/A	N/A	False	Undefined
accelerometer x compensated	0x0616	float	R-	Fully corrected and compensated accelerometer x value, units of g.	N/A	N/A	False	g
accelerometer y compensated	0x0618	float	R-	Fully corrected and compensated accelerometer y value, units of g.	N/A	N/A	False	g
accelerometer z compensated	0x061a	float	R-	Fully corrected and compensated accelerometer z value, units of g.	N/A	N/A	False	g
accelerometer temperature coefficient x	0x061c	float	R-	Linear temperature correction coefficient for the offset of the accelerometer x values, in 1/°C.	N/A	N/A	True	1/(°C)

SR300-D1 register list

(0x0600) Accelerometer

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
accelerometer temperature coefficient y	0x061e	float	R-	Linear temperature correction coefficient for the offset of the accelerometer y values, in 1/°C.	N/A	N/A	True	1/(°C)
accelerometer temperature coefficient z	0x0620	float	R-	Linear temperature correction coefficient for the offset of the accelerometer z values, in 1/°C.	N/A	N/A	True	1/(°C)
accelerometer reference temperature	0x0622	float	R-	Reference temperature to use for the temperature correction, in °C.	N/A	N/A	True	°C
accelerometer offset x	0x0624	float	R-	Offset correction for accelerometer x values, to be applied after temperature correction, in units of g.	N/A	N/A	True	g
accelerometer offset y	0x0626	float	R-	Offset correction for accelerometer y values, to be applied after temperature correction, in units of g.	N/A	N/A	True	g
accelerometer offset z	0x0628	float	R-	Offset correction for accelerometer z values, to be applied after temperature correction, in units of g.	N/A	N/A	True	g
accelerometer gain x	0x062a	float	R-	Gain factor for accelerometer x values, to be applied after temperature correction, in g / count.	N/A	N/A	True	g/count

SR300-D1 register list

(0x0600) Accelerometer

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
accelerometer gain y	0x062c	float	R-	Gain factor for accelerometer y values, to be applied after temperature correction, in g / count.	N/A	N/A	True	g/count
accelerometer gain z	0x062e	float	R-	Gain factor for accelerometer z values, to be applied after temperature correction, in g / count.	N/A	N/A	True	g/count
accelerometer matrix xx	0x0630	float	R-	xx-component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix xy	0x0632	float	R-	xy component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix xz	0x0634	float	R-	xz component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix yx	0x0636	float	R-	yx component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix yy	0x0638	float	R-	yy component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix yz	0x063a	float	R-	yz component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined

SR300-D1 register list

(0x0600) Accelerometer

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
accelerometer matrix zx	0x063c	float	R-	zx component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix zy	0x063e	float	R-	zy component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
accelerometer matrix zz	0x0640	float	R-	zz component of the gain correction matrix for accelerometer.	N/A	N/A	True	Undefined
tilt reference	0x0644	float	RW	Tilt indicator reference value in °.	N/A	0.0	False	°
rotation reference	0x0646	float	RW	Rotation indicator reference value in °.	N/A	0.0	False	°
tilt reference range	0x0648	float	RW	Tilt indicator range value in °. The indicator is disabled when the range is set to 0.0.	N/A	0.0	False	°
rotation reference range	0x064a	float	RW	Rotation indicator range value in °. The indicator is disabled when the range is set to 0.0.	N/A	0.0	False	°
tilt indicator	0x064c	bool	R-	Tilt indicator is set to False when the tilt is not more than the value in tilt_indicator_range away from the value in tilt_reference and is True otherwise.	N/A	N/A	False	Undefined

SR300-D1 register list

(0x0600)

Accelerometer

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
rotation indicator	0x064d	bool	R-	Rotation indicator is set to False when the rotation is not more than the value in rotation_indicator_range away from the value in rotation_reference and is True otherwise.	N/A	N/A	False	Undefined
tilt stats	0x0660	statistic	R-	Statistic values for tilt signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	°
rotation stats	0x0668	statistic	R-	Statistic values for rotation signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	°

SR300-D1 register list

(0x0680) Internal humidity

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
internal relative humidity	0x0680	float	R-	The internal relative humidity in %.	N/A	N/A	False	%
internal high humidity threshold	0x0684	u16	RW	High internal relative humidity threshold in %. The threshold above which the high humidity indicator flag is set.	N/A	40	True	%
internal high humidity indicator	0x0685	bool	R-	High internal humidity indicator.	N/A	N/A	False	Undefined
internal relative humidity stats	0x06e0	statistic	R-	Statistic values for internal relative humidity signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	%

SR300-D1 register list

(0x0700) Internal pressure

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
internal pressure	0x0700	float	R-	Interior air pressure, in hPa.	N/A	N/A	False	hPa
leak detection	0x0710	float	R-	Ratio of the pressure and the temperature in hPa/K. This signal is approximately constant when no leak is present.	N/A	N/A	False	hPa/K
leak detection reference	0x0712	float	RW	Reference value of the pressure and temperature ratio in hPa/K. The value of the pressure-and-temperature-ratio in the leak_detection register is compared to this value to determine if that value is constant. If this value is set to zero, the leak detection system is disabled.	N/A	N/A	True	hPa/K
leak detection reference range	0x0714	float	RW	The maximum allowed deviation of the pressure-and-temperature-ratio in the leak_detection register from the reference pressure-and-temperature-ratio in the leak_detection_reference register in percent.	N/A	5.0	True	%

SR300-D1 register list

(0x0700)

Internal pressure

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
leak indication	0x0716	u16	R-	Leak indication.	0: leak detection disabled 1: leak detected 2: no leak detected	N/A	False	Undefined
internal pressure stats	0x0760	statistic	R-	Statistic values for internal pressure signal: min, max, avg, std. Reset accumulation on read.	N/A	N/A	False	hPa

SR300-D1 register list

(0x0780)

Led

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
led mode	0x0780	u16	RW	The LED mode register controls the behaviour of the status LED. LED modes are: off, on, auto (blinking once, twice or three times every 15 s depending on power and communication status), identification (LED switches on for some time, before returning to previous LED mode) or maintenance (LED blinks rapidly when instrument is in maintenance mode).	0: Off 1: On 2: Auto 3: Identify 4: Maintenance	2	False	Undefined

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(0x0800) Recirculating ventilation heating

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
rvh mode	0x0800	u16	RW	The current RVH mode. This register indirectly controls the internal heating and ventilation. The modes are: 1. Dew and frost mitigation mode: in which the fan and the heater are both switched on. 2: High accuracy mode: in which the fan is switched on and the heater is switched off. 3: Power saving mode: in which the fan and heater are both switched off. 4: Invalid (read-only): when the fan is switched off and the heater is switched on. 5: Error (read-only): when either the heater or the fan encountered an error.	1: dew and frost mitigation mode 2: high accuracy mode 3: power saving mode 4: invalid mode 5: error	1	True	Undefined

SR300-D1 register list

(0x0880)

Status

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
device status 1	0x0880	u16	R-	Device status register 1: bit 15 - bit 9: TBD, bit 8: default settings mode, bit 7: maintenance mode, bit 6: leak indication, bit 5: heater over_current, bit 4: heater under_current, bit 3: fan speed low, bit 2: fan over_current, bit 1: fan under_current, bit 0: relative humidity \geq 40%	N/A	N/A	False	Undefined

SR300-D1 register list

(0x0880)

Status

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
device status 2	0x0881	u16	R-	Device status register 2: bit 15: future use, bit 14: future use, bit 13: future use, bit 12: future use, bit 11: future use, bit 10: future use, bit 9: relative humidity high, bit 8: humidity sensor communication error, bit 7: temperature sensor communication error, bit 6: ADC communication error, bit 5: thermopile resistance out of bounds, bit 4: calibration history full, bit 3: calibration history cleared, bit 2: calibration successful, bit 1: future use, bit 0: new data (irr + temp) available.	N/A	N/A	False	Undefined
uptime counter	0x08a0	u32	R-	Uptime counter that starts counting every second after device boot.	N/A	N/A	False	Undefined
mcusns assert counter	0x08a2	u32	R-	The amount of times an assert has failed on the MCUSNS. Writing 0 to the register will reset the value.	N/A	N/A	True	Undefined

SR300-D1 register list

(0x0880)

Status

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
adcmcu assert counter	0x08a4	u32	R-	The amount of times an assert has failed on the ADCMCU. Writing 0 to the register will reset the value.	N/A	N/A	True	Undefined

SR300-D1 register list

(0x0900)

Maintenance

Register name	Register address	Register type	Register access	Register description	Enumeration	Default value	Persistent	Unit
maintenance mode	0x0900	u16	RW	Maintenance mode switch. Intended for factory use only. Will always read as 0x0000 when not active.	N/A	N/A	False	Undefined
soft reboot	0x0901	u16	RW	Soft restart when the special value 0x587f is written. Restart into bootloader for firmware upgrade when special value 0xa54c is written. All other values will be ignored.	22655: soft restart 42316: bootloader restart	N/A	False	Undefined