List of ModBus-registers

Flowmeter Aflowt BUF / Aflowt BUF M

Holding registers (1 byte)

MB address		Parameter Name	Limits	Access Level (Editing)
Logical	**Physical**			
400001	0x0000	Address	1 ... 247	Work Service Calibration
400002	0x0001	RTS delay, ms	0 ... 125	Work Service Calibration
400003	0x0002	Baudrate index	0 - "1200" 1 - "2400" 2 - "4800"	Work Service Calibration
400004	0x0003	Initialization	0 - "…" 1 - "yes"	Calibration
400005	0x0004	Clear data logs	0 ... 1	Calibration
400007	0x0006	Signal autotracking enable	0 - "…" 1 - "yes"	Calibration
400008	0x0007	Inertia time, sec		Service Calibration
400009	0x0008	Period of measurements, sec	1 ... 255	Service Calibration
400011	0x000A	Median mean	1 ... 21	Service Calibration
400012	0x000B	Arithmetic mean	1 ... 50	Service Calibration

MB address		Parameter Name	Limits	Access Level (Editing)
Logical	Physical			
400018	0x0011	Quantity of zond pulses	3 ... 127	Calibration
400019	0x0012	Zond prescaler	1 ... 15	Calibration
400020	0x0013	Type + level of output 1 (Attachment 2)		Service Calibration
400021	0x0014	Output 1 - parameter (Attachment 2)	0 ... 9	Service Calibration
400022	0x0015	Output 1 - Recalc KP 1 by Fmax and limit		Service Calibration
400023	0x0016	Type + level of output 2 (Attachment 2)		Service Calibration
400024	0x0017	Output 2 - parameter (Attachment 2)	0 ... 9	Service Calibration
400025	0x0018	Output 2 - Recalc KP 1 by Fmax and limit		Service Calibration
400026	0x0019	Test of frequency output	0 - "Work" 1 - "Test"	Service Calibration
400034	0x0021	Daylight switch	0 - "no" 1 - "standard" 2 - "user"	Service Calibration
400036	0x0023	Firmware reload	0 - "..." 1 - "start"	Calibration
400037	0x0024	Restart command	0 - "…" 1 - "restart"	Service Calibration
400038	0x0025	Display control	0 - "off" 1 - "on"	Work Service Calibration
400039	0x0026	Display shutdown timeout. sec		Work Service Calibration
400040	0x0027	Display contrast	1 ... 63	Work Service Calibration
400041	0x0028	Flow dimension on display	0 - " m3/h" 1 - "l/min"	Work Service Calibration
400043	0x002A	Display update timaout, sec	1 ... 30	Work

| MB address | | Parameter Name | Limits | Access Level |
Logical	Physical			(Editing)
				Service Calibration
400050	0x0031	Clear volume counters	0 - "…" 1 - "clear"	Calibration
400051	0x0032	First work hit	3 ... 120	Calibration
400052	0x0033	Second work hit	3 ... 120	Calibration
400053	0x0034	Third work hit	3 ... 120	Calibration
400054	0x0035	Comparator level	0 - "+35 mV" 1 - "+30 mV" 2 - "+25 mV" 3 - "+20 mV" 4 - "+15 mV" 5 - "+10 mV" 6 - "-10 mV" 7 - "-15 mV" 8 - "-20 mV" 9 - "-25 mV" 10 - "-30 mV" 11 - "-35 mV"	Calibration
400058	0x0039	Fast reaction	0 - "off" 1 - "on"	Service Calibration
400059	0x003A	Fast reaction threshold, %Qmax	1 ... 100	Service Calibration

Holding registers (2 bytes)

MB address		Parameter Name	Limits	Access Level
Logical	Physical			(Editing)
416485	0x4064	Byte pause (*60 ms)	0 ... 100	Work Service Calibration
416486	0x4065	Window beginning (0.25 us)	200 ... 20000	Calibration
416487	0x4066	Output 1 – pulse period, ms	1 ... 1000	Service Calibration
416488	0x4067	Output 1 – max frequency, Hz	0 ... 1000	Service Calibration
416489	0x4068	Output 1 – error frequency, Hz	0 ... 1000	Service Calibration
416490	0x4069	Output 2 – pulse period, ms	1 ... 1000	Service Calibration
416491	0x406A	Output 2 – max frequency, Hz	0 ... 1000	Service Calibration
416492	0x406B	Output 2 – error frequency, Hz	0 ... 1000	Service Calibration
416493	0x406C	Test frequency for output 1, 0.1 Hz	0 ... 10000	Service Calibration
416494	0x406D	Test frequency for output 2, 0.1 Hz	0 ... 10000	Service Calibration

Holding registers (4 bytes long)

MB address		Parameter Name	Limits	Access Level (Editing)
Logical	Physical			
432769	0x8000	Serial number		Calibration
432779	0x800A	Time		Service Calibration
432781	0x800C	Standard time switch		Service Calibration
432783	0x800E	Daylight time switch		Service Calibration

Holding registers (4 bytes float)

| MB address | | Parameter Name | Limits | Access Level |
Logical	Physical			(Editing)
449353	0xC0C8	Zero offset dT0, µs		Calibration
449355	0xC0CA	Distance beetween PEA, mm	1 ... 1000	Calibration
449357	0xC0CC	Axial distance beetween PEA, mm	1 ... 1000	Calibration
449359	0xC0CE	Internal diametr, mm	1 ... 1000	Calibration
449363	0xC0D2	Reference USS velocity, m/s	1400 ... 1570	Calibration
449365	0xC0D4	Additional lag USS, µs	-20 ... 20	Calibration
449367	0xC0D6	Cutoff flowrate, m3/h		Service Calibration
449369	0xC0D8	Output 1 - KP, imp/m3	0.01 ... 1000000	Service Calibration
449371	0xC0DA	Output 2 - KP, imp/m3	0.01 ... 1000000	Service Calibration
449373	0xC0DC	Output 1 – lower limit, m3/h	0 ... 1000	Service Calibration
449375	0xC0DE	Output 1 – upper limit, m3/h	0 ... 10000	Service Calibration
449377	0xC0E0	Output 2 - lower limit, m3/h	0 ... 1000	Service Calibration
449379	0xC0E2	Output 2 - upper limit, m3/h	0 ... 10000	Service Calibration
449393	0xC0F0	Calibration factor K1		Calibration
449395	0xC0F2	Calibration factor P1		Calibration
449397	0xC0F4	Calibration factor K2		Calibration
449399	0xC0F6	Calibration factor P2		Calibration
449401	0xC0F8	Set transition flowspeed, m/s		Calibration
449433	0xC118	Calibration temperature for internal sensor, C	-40 ... 50	Service Calibration
449435	0xC11A	Offset of internal temperature sensor, C	-50 ... 50	Service Calibration

Input registers (1 byte)

MB address		Parameter Name	Limits
Logical	**Physical**		
300101	0x0064	Current time (in sec from 01.01.1970)	0 - "winter" 1 - "summer"
300102	0x0065	Daylight switch	0 - "no" 1 - "standard" 2 - "user"
300103	0x0066	Work mode	0 - "WORK" 1 - "SERVICE" 2 - "CALIBRATION"
300104	0x0067	Status (Attachment 1)	
300105	0x0068	External power 24V	0 - "no" 1 - "yes"
300106	0x0069	Quality of signal	0 - "Undefined" 1 - "No signal" 2 - "Good" 3 - "Bad"

Input registers (2 bytes)

MB address		Parameter Name	Limits
Logical	Physical		
316386	0x4001	Current record in hourly data log	
316387	0x4002	Current record in daily data log	
316388	0x4003	Current record in monthly data log	
316389	0x4004	Current record in control journal	

Input registers (4 bytes long)

MB address		Parameter Name	Limits
Logical	**Physical**		
332969	0x80C8	Serial number	
332971	0x80CA	Summary operating time, sec	
332973	0x80CC	Summary volume (integer part – signed long), m3	
332975	0x80CE	Summary volume (fractional part - float), m3	
332977	0x80D0	Volume for direct flow (integer part – signed long), m3	
332979	0x80D2	Volume for direct flow (fractional part - float), m3	
332981	0x80D4	Volume for reverse flow (integer part – signed long), m3	
332983	0x80D6	Volume for reverse flow (fractional part - float), m3	
332985	0x80D8	Operating time without errors, sec	

Input registers (4 bytes float)

MB address		Parameter Name	Limits
Logical	**Physical**		
349153	0xC000	Maximum flowrate, m3/h	
349155	0xC002	Transition flowspeed, m/s	
349157	0xC004	Transition flowrate, m3/h	
349361	0xC0D0	USS velocity, m/s	
349363	0xC0D2	Flight time difference, µs	
349365	0xC0D4	Current flowspeed, m/s	
349367	0xC0D6	Current flowrate, m3/h	
349369	0xC0D8	Half-wave duration (direct signal), µs	
349371	0xC0DA	Half-wave duration (reverse signal), µs	
349373	0xC0DC	Summary volume, liter	
349375	0xC0DE	High-frequency quartz correction factor	
349377	0xC0E0	Calibration code for TDC	
349385	0xC0E8	Current output frequency 1, Hz	
349387	0xC0EA	Current output frequency 2, Hz	
349389	0xC0EC	Controller internal temperature, C	
349407	0xC0FE	Time of flight 1, µs	
349409	0xC100	Time of flight 2, µs	
349411	0xC102	Time of flight 3, µs	
349413	0xC104	Time of flight 4, µs	
349415	0xC106	Time of flight 5, µs	
349417	0xC108	Time of flight 6, µs	
349447	0xC126	The maximum difference in flight times, µs	
349449	0xC128	Battery voltage, V	

Holding coils

MB address		Parameter Name	Limits	Access Level (Editing)
Logical	**Physical**			
201	0x00C8	Zero offset calibration start (dT0)	0 - "..." 1 - "start"	Calibration
202	0x00C9	Optimum comparator threshold search	0 - "..." 1 - "start"	Calibration

Attachment 1.

1. Status flags.

   Bit 0 – hardware failure;

   Bit 1 – battery low level;

   Bit 2 – USS is not present (empty pipe);

   Bit 3 – maximum flowrate is exceeded;

   Bit 4 – flowrate exceeds the universal output upper limits;

   Bit 5 – flowrate is less than the universal output lower limits;

   Bit 6 – reserv;

   Bit 7 – reserv.

Attachment 2.

1. Type of universal output (two low bits in register):

   0 – off;

   1 – Logic;

   2 – Pulse;

   3 – Frequency;

   Bit #7 is used to select the active level - if it is 0, then the active level is low, if 1 - high.

2. Universal output link:

   Frequency output mode:

   > 0 – modulus flow;
   >
   > 1 – direct flow;
   >
   > 2 – reverse flow;

   Pulse output mode:

   > 0 – modulus volume;
   >
   > 1 – direct volume;
   >
   > 2 – reverse volume;

   Logic output mode:

   > 0 – flow direction (active level for reverse flow);
   >
   > 1 – error «USS is not present»;
   >
   > 2 – error «Q>Qmax»;
   >
   > 3 – any errors;
   >
   > 4 – error «Battery low level»;
   >
   > 5 – external 24V flag.