



Smart Valve / Akıllı Vana

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Modbus General Notes

General information	Date	25.01.2022
	Product Name Ürün Adı	Smart Valve Akıllı Vana
	Actuator type Aktüatör Tipi	C080 C200 C400
	Protocol	Modbus RTU over RS485, Modbus TCP over IP network
Modbus RTU	Transmission formats	1-8-N-2, 1-8-N-1, 1-8-E-1, 1-8-O-1 (Default: 1-8-N-1) and 7
	Baud rates	2400,4800,9600, 19200, 38400, 76800, 115200 (Default: 9600 Bd)
	Address	1...247 (Default: 1)
	Number of nodes	Max. 32 (without repeater)
	Terminating resistor Sonlandırma Direnci	120 Ω
	Port	open (Default: 502)
Modbus TCP	Tool Araçlar	through the intergrated webserver , Entegre Web Arayüz
Parameterisation		
Register implementation	All data is arranged in a table and addressed by 1..n (Register No.) or 0..n-1 (Address). No distinction is made between data types (Discrete Inputs, Coils, Input Registers and Holding Registers). As a consequence, all data can be accessed with the two commands for Holding Register. The commands for Discrete Inputs and Input Registers can be used as an alternative. Tüm veriler bir tabloda düzenlenmiştir ve 1..n (Register No.) ya da 0..n-1 (Address) şeklinde adreslenir. Veri türleri arasında (Discrete Inputs, Coils, Input Registers ve Holding Registers) herhangi bir ayrım yapılmaz. Bunun sonucu olarak, tüm verilere Holding Register için kullanılan iki komut ile erişilebilir. Discrete Inputs ve Input Registers için kullanılan komutlar ise alternatif olarak kullanılabilir.	
Commands	Standard commands: Read Holding Registers [3] Write Single Register [6]	
	Optional commands: Read Discrete Inputs [2] Read Input Registers [4] Write Multiple Registers [16]	

Modbus Register Overview Table

No.	Address	Description	Register Type	Access
1	0	Control Mode	int16	R/W
2	1	ΔT Manager Status	int16	R/W
3	2	Override Control	int16	R/W
4	#	#	#	#
5	4	Save Data	int16	R/W
6	#	#	#	#
7	6	Valve Status	int16	R
8	7	Sensor 1 Temperature Error Counter	int16	R
9	8	Sensor 2 Temperature Error Counter	int16	R
10	9	Energy Realized Error Counter	int16	R
11	10	Position Set Point Data [°]	int16	R/W
12	11	Absolute Position [°]	int16	R
13	12	Flow Treshold Value HighWord LowWord	int32 float	R/W
14	13			
15	14	Energy Treshold Value HighWord LowWord	int32 float	R/W
16	15			
17	16	ΔT Treshold Value HighWord LowWord	int32 float	R/W
18	17			
19	18	Volumetric Max Value HighWord LowWord	int32 float	R/W
20	19			
21	20	Flow Set Point Data HighWord LowWord	int32 float	R/W
22	21			
23	22	Energy Set Point Data HighWord LowWord	int32 float	R/W
24	23			
25	24	ΔT Set Point Data HighWord LowWord	int32 float	R/W
26	25			
27	26	Absolute Flow Read Data[m3/h] HighWord LowWord	int32 float	R
28	27			
29	28	Absolute Energy Read Data[kWh] HighWord LowWord	int32 float	R
30	29			
31	30	Absolute Cubic Volume Flow Read Data[m3] HighWord LowWord	int32 float	R
32	31			
33	32	Absolute Total Energy Read Data [kWh] HighWord LowWord	int32 float	R
34	33			
35	34	Absolute ΔT Read Data [°C] HighWord LowWord	int32 float	R
36	35			
37	36	Absolute Temperature 1 Read Data [°C] HighWord LowWord	int32 float	R
38	37			
39	38	Absolute Temperature 2 Read Data [°C] HighWord LowWord	int32 float	R
40	39			
41	40	Absolute Differantial Water Pressure [Bar] HighWord LowWord	int32 float	R
42	41			
43	42	Analog Output Feedback Signal Selection [V/C]	int16	R / W
44	43	Absolute Feedback Voltage Data [V] HighWord LowWord	int32 float	R / W
45	44			
46	45	Absolute Feedback Current Data [mA] HighWord LowWord	int32 float	R / W

47	46			
48	47	Volumetric Min Value HighWord LowWord	int32 float	R / W
49	48			
50	49	Regime Optimisation Mode	int16	R/W
51	50	Regime Optimisation Set Value HighWord LowWord	int32 float	R / W
52	51			
53	52	Maintenance Mode	int16	R/W

TAG	ADRESS
ACTUATOR POS READ	20
ACTUATOR POS WRITE	2

Sistemde sadece aktüatör kullanılmak istendiğinde yukarda bulunan adresler kullanılabilir.

TAG	ADRESS	MODBUSS ADRESS	REGISTER TYPE
FLOW	0	40001	float
ENERGY	2	40003	float
HOT TEMP	4	40005	float
COLD TEMP	6	40007	float
DT TEMP	8	40009	float
VOLUME	10	40011	float
TOTAL ENERGY	12	40013	float
ERRORT1	14	40015	int16t
ERRORT2	15	40016	int16t
ERRORENERGY	16	40017	int16t

Sistemde sadece kalorimetre kullanılmak istendiğinde yukarda bulunan adresler kullanılabilir.

Modbus Register Description				
No.	Address	Description	Register Type	Unit
1	0	Control Mode: 0: Position Control Mode 1: Flow Control Mode 2: Energy Control Mode 3: ΔT Control Mode	int16	#
2	1	ΔT Manager Status 0: ΔT Manager : OFF 1: ΔT Manager : ON	int16	#
3	2	Override Control 0 : Position Set Point [Valve will be act according to set point data] 1 :Fully Close Valve Data 2: Fully Open Valve Data	int16	#
4	#	#	#	#
5	4	Save Data 0: Data All set points and modes are not saved (save status closed) 1: Data All set points and modes are saved (save status open) When the Save Data is 1 (save all adjustments) after this Register has to be Closed (Save Data = 0)	int16	#
6	#	#	#	#
7	6	Valve Status 0: Valve Closed Data 1: Valve Opened Data 2: Valve In Control Data When the read valve position data is 0°, Valve fully Closed When the read valve position data is 90°, Valve fully Opened When the read valve position data between 0 - 90° , Valve in control data	int16	°
8	7	Sensor 1 Temperature Error Counter When the temperature sensor has problem, the counter is count until the problem is solved	int16	#
9	8	Sensor 2 Temperature Error Counter When the temperature sensor has problem, the counter is count until the problem is solved	int16	#
10	9	Energy Realized Error Counter When the temperature sensor has problem, the counter is count until the problem is solved	int16	#
11	10	Position Set Point Data [°] Set valve position btw 0-90°	int16	°
12	11	Absolute Read Position Data [°] Read Valve Position Data btw 0-90°	int16	°
13	12	Flow Treshold Value HighWord LowWord	int32 float	m3/h
14	13	Set Flow Treshold Data		
15	14	Energy Treshold Value HighWord LowWord	int32 float	kWh
16	15	Set Energy Treshold Data		
17	16	ΔT Treshold Value HighWord LowWord	int32 float	°C
18	17	Set ΔT Treshold Value		
19	18	Volumetric Max Value HighWord LowWord	int32 float	m3/h
20	19	Set Volumetric Max Value		
21	20	Flow Set Point Data HighWord LowWord	int32 float	m3/h
22	21	Set Flow Value		
23	22	Energy Set Point Data HighWord LowWord	int32 float	kWh
24	23	Set Energy Data		
25	24	ΔT Set Point Data HighWord LowWord	int32 float	°C
26	25			
27	26	Absolute Flow Read Data[m3/h] HighWord LowWord	int32 float	m3/h
28	27	Reading the Flow value in cubic meter		
29	28	Absolute Energy Read Data[kWh] HighWord LowWord	int32 float	kWh
30	29	Reading the Energy Data in kWh		
31	30	Absolute Cubic Volume Flow Read Data[m3] HighWord LowWord	int32 float	m3
32	31	Reading the Volumetric Flow in cubic meter [m3]		
33	32	Absolute Total Energy Read Data [kWh] HighWord LowWord	int32 float	kWh
34	33	Reading the Total Energy Value [kWh]		
35	34	Absolute ΔT Read Data [°C] HighWord LowWord	int32 float	°C
36	35	Reading the ΔT = T1-T2 Value in °C		
37	36	Absolute Temperature 1 Read Data [°C] HighWord LowWord	int32 float	°C
38	37	Reading the T1 Temperature Data		
39	38	Absolute Temperature 2 Read Data [°C] HighWord LowWord	int32 float	°C
40	39	Reading the T2 Temperature Data		
41	40	Absolute Differential Water Pressure [Bar] HighWord LowWord	int32 float	Bar
42	41	Reading the Differential Water Pressure Data		
43	42	Analog Output Feedback Signal Selection [V/C]	int16	#
44	43	Absolute Feedback Voltage Data [V] HighWord LowWord	int32 float	V
45	44	Reading the Feedback Voltage Signal Data		
46	45	Absolute Feedback Current Data [mA] HighWord LowWord	int32 float	mA
47	46	Reading the Feedback Current Signal Data		
48	47	Volumetric Min Value HighWord LowWord	int32 float	m3/h
49	48	Set Volumetric Min Value		
50	49	Regime Optimisation Mode Mode : 1: ON Mode : 0: OFF	int16	#
51	50	Regime Optimisation Set Value HighWord LowWord	int32 float	°C
52	51	Set Value		
53	52	Maintenance Mode Mode : 1: ON Mode : 0: OFF	int16	#

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