HIKMICRO

Coriolis Mass Flowmeter

FC00 SERIES

MODBUS Communication Protocol

Description	Address	Attribute	Type	Data Range	Function Code
Batch Clear Accumulators	2	WO	U16	0xFF00, 0x0000	05
Clear All Accumulators	3	WO	U16	0xFF00, 0x0000	05
Enable Zero Calibration	5	WO	U16	0xFF00, 0x0000	05
MO1 Simulation	9	R/W	U16	0xFF00, 0x0000	01/05
MO2 Simulation	10	R/W	U16	0xFF00, 0x0000	01/05
Frequency Simulation	11	R/W	U16	0xFF00, 0x0000	01/05
MO2 Output Signal Type	12	R/W	U16	0: Mass Flow 1: Volume Flow 2: Density 3. Temperature	03/06
Frequency Output Signal Type	13	R/W	U16	0: Mass Flow 5: Volume Flow	03/06
Data Direction	16	R/W	U16	0: Forward Only 1: Reverse Only 2: Bi-Directional 3: Absolute Value 4: Negative Forward Only 5: Negative Bi-Directional	03/06
Density Unit	30	R/W	U16	70: g/s 74: kg/min 75: kg/h 78: t/h	03/06
Mass Flow Unit	38	R/W	U16	70: g/s 74: kg/min 75: kg/h 78: t/h	03/06
Temperature Unit	40	R/W	U16	32: °C 33: °F	03/06
Liquid Volume Flow Unit	41	R/W	U16	24: L/s 17: L/min 138: L/h 28: m³/s 131: m³/min 19: m³/h 22: USGal/s 16: USGal/min 136: USGal/h 235: USGal/d 137: ImpGal/s 18: ImpGal/min 30: ImpGal/h 31: ImpGal/d	03/06
Pressure Unit	43	R/W	U16	0: kPa	03/06

Description	Address	Attribute	Type	Data Range	Function Code
Total Mass Unit	44	R/W	U16	60: g 61: kg 62: t	03/06
Total Liquid Unit	45	R/W	U16	41: L 43: m^3 0: NL or Nm^3 40: US Gal 42: ImpGal	03/06
Reset Mass Totalizer	55	WO	U16	0xFF00, 0x0000	05
Reset Volume Totalizer	56	WO	U16	0xFF00, 0x0000	05
Slug Flow Output Type	76	R/W	U16	0: Realtime Flow 1: Set Flow to Zero 2: Set Flow to Average	03/06
Measure Mode	77	R/W	U16	0xFF00: Liquid 0x0000: Gas	03/06
Pressure Compensation	81	R/W	U16	0xFF00: Enable 0x0000: Prohibited	03/06
HART Polling Address	121	R/W	U16	0~15	03/06
Slug Flow Time	140	R/W	U16	3~250	03/06
D1	154~155	R/W	float	0.001~5000.001	03/06
D2	156~157	R/W	float	0.001~5000.001	03/06
K1	158~159	R/W	float	0.0001~99999.9	03/06
K2	160~161	R/W	float	0.0001~99999.9	03/06
Temperature Compensation Coefficient	162~163	R/W	float	0.0001~99999.9	03/06
Sensor Mass Flow High Limit	164~165	R/W	float	0~1388888.89	03/06
Sensor Temperature High Limit	166~167	R/W	float	0~1000	03/06
Sensor Density High Limit	168~169	R/W	float	0~5000	03/06
Sensor Volume Flow High Limit	170~171	R/W	float	-10000000~10000000	03/06
Sensor Mass Flow Low Limit	172~173	R/W	float	-1388888.89~1388888.89	03/06
Sensor Temperature Low Limit	174~175	R/W	float	-500~1000	03/06
Sensor Density Low Limit	176~177	R/W	float	0~5000	03/06
Sensor Volume Flow Low Limit	178~179	R/W	float	-10000000~10000000	03/06
Flow Damping	188~189	R/W	float	0~1.0	03/06
Temperature Damping	190~191	R/W	float	0~1.0	03/06
Density Damping	192~193	R/W	float	0~1.0	03/06
Mass Flow Cutoff	194~195	R/W	float	-999999.9~999999.9	03/06

Description	Address	Attribute	Type	Data Range	Function Code
Slug Flow High Limit	198~199	R/W	float	0~5000.0	03/06
Slug Flow Low Limit	200~201	R/W	float	0~5000.0	03/06
MO1 20mA Signal	208~209	R/W	float	-1388888.89~1388888.89	03/06
MO1 4mA Signal	210~211	R/W	float	-1388888.89~1388888.89	03/06
MO2 20mA Signal	218~219	R/W	float	-1388888.89~1388888.89	03/06
MO2 4mA Signal	220~221	R/W	float	-1388888.89~1388888.89	03/06
Frequency High Limit	222~223	R/W	float	100~12500	03/06
Frequency Signal High Limit	224~225	R/W	float	0.0001~1388888.89	03/06
Frequency Output Pulse Width	226~227	R/W	float	0.1~0.9	03/06
Zero Setting	232~233	R/W	float	-0.9999~0.9999	03/06
Reset Zero to Factory	242	WO	U16	0xFF00, 0x0000	05
Restore Parameters to Factory	246	R/W	U16	0xFF00, 0x0000	01/05
Storage Factory Parameters	247	R/W	U16	0xFF00, 0x0000	01/05
Real-Time Density	248~249	RO	float	-	04
Real-Time Temperature	250~251	RO	float	-	04
Real-Time Volume Flow	252~253	RO	float	-	04
Real-Time Mass Total	258-259	RO	float	-	04
Real-Time Volume Total	260-261	RO	float	-	04
Real-Time Mass Inventory	262-263	RO	float	-	04
Restore Last Zero	264	WO	U16	0xFF00, 0x0000	05
Flow Compensation	266`267	R/W	float	-100~0.0	03/06
Pressure Compensation Coefficient	268~269	R/W	float	0~99999.9	03/06
Calibration Pressure	270~271	R/W	float	0.0001~100000	03/06
Mass Flow Correction Factor	278~279	R/W	float	0~1.0	03/06
Volume Flow Correction Factor	280~281	R/W	float	0~1.0	03/06
Density Correction Factor	282~283	R/W	float	0~1.0	03/06
Real-Time Frequency	284~285	RO	float	-	04
Live Zero	292~293	RO	float	-	04
Modbus Address	312	R/W	U16	1~255	03/06
Flow Slope	406~407	R/W	float	0.0001~99999.9	03/06
Temperature Compensation-Flow	408~409	R/W	float	0~10.0	03/06
Temperature Slope	410~411	R/W	float	0.0001~10	03/06

Description	Address	Attribute	Type	Data Range	Function Code
Temperature Zero	412~413	R/W	float	-300~300	03/06
Fault Register 0	418	RO	U16	0: EEPROM Read/Write Failure 1: DSP Communication Failure 4: Temperature Overlimit 6: Mass Flow Overlimit 13: Volume Flow Overlimit 14: Main MO Hardware Exception	04
Fault Register 1	419	RO	U16	0: MO1 Output Saturation 1: MO2 Output Saturation 4: Density Overlimit	04
Fault Register 2	420	RO	U16	8: Zero Calibration Failure 15: Slug Flow Overlimit	04
Fault Register 3	421	RO	U16		04
Fault Register 4	422	RO	U16		04
Fault Register 5	423	RO	U16		04
	424~449				
Pipeline Pressure	450~451	R/W	float	0~100000.0	03/06
Standard Density	452~453	R/W	float	0.0001~3000	03/06
Real-time Gas Volume Flow	454~455	RO	float	-	04
Real-time Gas Volume Total	456~457	RO	float	-	04
Real-time Gas Volume Inventory	458~459	RO	float	-	04
Float Bytes Order	520	R/W	U16	0: 1234 1: 3412 2: 2143 3: 4321	03/06
Concentration	984~985	RO	float	-	04
Restore Program	1000	R/W	U16	0xFF00, 0x0000	
Unit Per Pulse	1100~1101	R/W	float	0.0001~10000000	03/06
MO2 Fault Output Preset Value	1110~1111	R/W	float	High Limit Level: 21.5~24 Low Limit Level: 3.2~3.55	03/06
MO1 Fault Output Type	1112	R/W	U16	0: High Limit Level 1: Low Limit Level 2: None	03/06
MO2 Fault Output Type	1113	R/W	U16	0: High Limit Level 1: Low Limit Level 2: None	03/06

Description	Address	Attribute	Type	Data Range	Function Code
Home Page Display	1116	R/W	U16	0: Mass Total+Mass Flow 1: Volume Total+Volume Flow 2: Density+Temperature 3: Density+Mass Flow	03/06
Baud Rate	1132	R/W	U16	1: 2400 2: 4800 3: 9600 4: 14400 5: 19200 6: 38400	03/06
Parity Bit	1133	R/W	U16	0: None 1: Odd 2: Even	03/06
Stop Bit	1134	R/W	U16	0: 1bit 1: 2bit	03/06
Secondary Loop Selection	1166	R/W	U16	1: Current 3: Frequency	03/06
Software Version（U16）	1199	R/W	U16	-	03/06
Language	1358	R/W	U16	0: Chinese 1: English	03/06
Gas Volume Flow Unit	2600	R/W	U16	176: NL/s 175: NL/min 122: NL/h 183: Nm^3/s 182: Nm^3/min 121: Nm^3/h 186: Scf/s 123: Scf/min 185: Scf/h 184: Scf/d	03/06
Gas Volume Total Unit	2601	R/W	U16	167: NL 166: Nm^3 168: Scf	03/06
Hardware Version	9001	R/W	U16		03/06
Transmitter Version	9002	R/W	U16	0: Old Version MFT20 1: New Version MFT20	03/06
Filter Coefficient	9004	R/W	float	0~1.0	03/06
LCD Direction	9006	R/W	U16	0: Forward 1: Reverse	03/06
Flow Correction Coefficient	9008~9009	R/W	float	-10000000~10000000	03/06
Zero Limit	9010~9011	R/W	float	-10.0~10.0	03/06
Current Zero Value	9012~9013	RO	float	-	04
Alarm Output Signal Type	9014	R/W	U16	0: Real-time Value 1: Zero	03/06
Sensor Mass Flow High Limit	9015~9016	R/W	float	0~1388888.89	03/06

Description	Address	Attribute	Type	Data Range	Function Code
Sensor Mass Flow Low Limit	9017~9018	R/W	float	-1388888.89~1388888.89	03/06
Sensor Density High Limit	9019~9020	R/W	float	0~5000	03/06
Sensor Density Low Limit	9021~9022	R/W	float	0~5000	03/06
Sensor Temperature High Limit	9023~9024	R/W	float	0~1000	03/06
Sensor Temperature Low Limit	9025~9026	R/W	float	-500~1000	03/06
MO 4mA Signal Value	9027~9028	R/W	float	-	03/06
MO 20mA Signal Value	9029~9030	R/W	float	-	03/06
MO1 Calibration Coefficient K	9031~9032	R/W	float	-	03/06
MO2 Calibration Coefficient B	9033~9034	R/W	float	-	03/06
MO1 Calibration Coefficient K	9035~9036	R/W	float	-	03/06
MO2 Calibration Coefficient B	9037~9038	R/W	float	-	03/06
Frequency 2 Unit Per Pulse	9041~9042	R/W	float	0.0001~10000000	03/06
Frequency 2 Output Signal High Limit	9043~9044	R/W	float	0.0001~1388888.89	03/06
Frequency 2 Output Signal Type	9045	R/W	U16	0: Mass Flow 5: Volume Flow	03/06
Transmitter Serial Number	9100~9103	RO	U64	-	04
Sensor Serial Number	9104~9107	RO	U64	-	04
Perform MO Calibration	9199	WO	U16	1: MO1 Calibration 2: MO2 Calibration	06
MO 4mA Calibration Value	9200~9201	WO	float	3.75~4.25	06
MO 20mA Calibration Value	9202~9203	WO	float	19.75~20.25	06
Debug Reserved 1	9900	RO	U16		04
Debug Reserved 2	9901	RO	U16		04
Debug Reserved 3	9902	RO	U16		04
Debug Reserved 4	9903	RO	U16		04
Debug Reserved 5	9904	RO	U16		04

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