SmartGen

MAKING CONTROL SMARTER

HMC9000A

DIESEL ENGINE CONTROLLER

COMMUNICATION PROTOCOL

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Table 1 Software Version

Date	Version	Content
2024-08-30	V1.0	Original release.
2024-10-15	V2.0	Add ECU data display.
2024-05-15	V2.9	1. Add the communication addresses and description for RPU module sensor 1/2 open warning, high/low shutdown, high/low warning and RPU over speed warning. 2. Add user-defined protocol description.
2024-11-28	V3.0	1. Update ECU upload data. 2. Add AIN8-2 data. 3. Add stern shaft speed sensor data. 4. Add SPN code parsing alarm bit in ECU warnings.
2025-05-06	V3.1	1. Add alarm data parsing. 2. Add master controller data. 3. Modify 05 function code data.
2025-09-15	V3.2	1. Add ECU version display. 2. Update the latest protocol template. 3. Add ECU data.

CONTENTS

1 RS485 COMMUNICATION PROTOCOL

Master controller is connected with the following modules: DOUT16 and RPU560. Protocol details are as follows:

1.1 FUNCTION CODE 03H MAPPING ALARM AND STATUS COIL OF DATA FIELD

Table 2 Alarm and Coil Status of Data Field

Modbus Address	PLC Address	Item	Description
0.0	40001.0	Common Alarm	"0" means no common alarm occurs "1" means there are common alarms (0000.0 means the Boolean value of bit 0 at address 0) The content listed below follows the same rule
0.1	40001.1	Common Shutdown Alarm	
0.2	40001.2	Common Warning Alarm	
0.3	40001.3	Common Trip and Stop Alarm	
0.4	40001.4	Common Open Alarm without Shutdown	
0.5	40001.5	Gearbox Forward	
0.6	40001.6	Gearbox Backward	
0.7	40001.7	Instrument Mode	
0.8	40001.8	In Local Mode	
0.9	40001.9	In Remote Mode	
0.10	40001.10	Override Mode	
0.11	40001.11	In Auto Mode	
0.12	40001.12	Gearbox Idle	
0.13	40001.13	Power Status	
0.14	40001.14	Genset Normal Running	
0.15	40001.15	Gearbox Interlock	
1.0	40002.0	Emergency Stop Alarm	
1.1	40002.1	Over Speed Shutdown	
1.2	40002.2	Under Speed Shutdown	
1.3	40002.3	Loss of Speed Signal Shutdown	
1.4	40002.4	Reserved	
1.5	40002.5	Reserved	
1.6	40002.6	Reserved	
1.7	40002.7	Reserved	
1.8	40002.8	Reserved	
1.9	40002.9	Reserved	
1.10	40002.10	Remote Emergency Stop Input	
1.11	40002.11	ECU Shutdown	
1.12	40002.12	ECU Comm. Failure Shutdown	

Modbus Address	PLC Address	Item	Description
1.13	40002.13	High Water Temp. Shutdown Input	
1.14	40002.14	Low Oil Pressure Shutdown Input	
1.15	40002.15	Reserved	
2.0	40003.0	AIN8 Sensor 1 High Shutdown	
2.1	40003.1	AIN8 Sensor 1 Low Shutdown	
2.2	40003.2	AIN8 Sensor 2 High Shutdown	
2.3	40003.3	AIN8 Sensor 2 Low Shutdown	
2.4	40003.4	AIN8 Sensor 3 High Shutdown	
2.5	40003.5	AIN8 Sensor 3 Low Shutdown	
2.6	40003.6	AIN8 Sensor 4 High Shutdown	
2.7	40003.7	AIN8 Sensor 4 Low Shutdown	
2.8	40003.8	AIN8 Sensor 5 High Shutdown	
2.9	40003.9	AIN8 Sensor 5 Low Shutdown	
2.10	40003.10	AIN8 Sensor 6 High Shutdown	
2.11	40003.11	AIN8 Sensor 6 Low Shutdown	
2.12	40003.12	AIN8 Sensor 7 High Shutdown	
2.13	40003.13	AIN8 Sensor 7 Low Shutdown	
2.14	40003.14	AIN8 Sensor 8 High Shutdown	
2.15	40003.15	AIN8 Sensor 8 Low Shutdown	
3.0	40004.0	Reserved	
3.1	40004.1	Reserved	
3.2	40004.2	Reserved	
3.3	40004.3	Reserved	
3.4	40004.4	Reserved	
3.5	40004.5	Reserved	
3.6	40004.6	Reserved	
3.7	40004.7	Reserved	
3.8	40004.8	Sensor 1 High Shutdown (RPU)	
3.9	40004.9	Sensor 1 Low Shutdown (RPU)	
3.10	40004.10	Sensor 2 High Shutdown (RPU)	
3.11	40004.11	Sensor 2 Low Shutdown (RPU)	
3.12	40004.12	Sensor 9 High Shutdown	
3.13	40004.13	Sensor 9 Low Shutdown	
3.14	40004.14	Sensor 10 High Shutdown	
3.15	40004.15	Sensor 10 Low Shutdown	
4.0	40005.0	Sensor 1 High Shutdown	
4.1	40005.1	Sensor 1 Low Shutdown	
4.2	40005.2	Sensor 2 High Shutdown	
4.3	40005.3	Sensor 2Low Shutdown	
4.4	40005.4	Sensor 3 High Shutdown	
4.5	40005.5	Sensor 3 Low Shutdown	
4.6	40005.6	Sensor 4 High Shutdown	
4.7	40005.7	Sensor 4 Low Shutdown	

Modbus Address	PLC Address	Item	Description
4.8	40005.8	Sensor 5 High Shutdown	
4.9	40005.9	Sensor 5 Low Shutdown	
4.10	40005.10	Sensor 6 High Shutdown	
4.11	40005.11	Sensor 6 Low Shutdown	
4.12	40005.12	Sensor 7 High Shutdown	
4.13	40005.13	Sensor 7 Low Shutdown	
4.14	40005.14	Sensor 8 High Shutdown	
4.15	40005.15	Sensor 8 Low Shutdown	
5.0	40006.0	Sensor 1 High Shutdown (EXP.1)	After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors 15-24 of AIN24.
5.1	40006.1	Sensor 1 Low Shutdown (EXP.1)	
5.2	40006.2	Sensor 2 High Shutdown (EXP.1)	
5.3	40006.3	Sensor 2Low Shutdown (EXP.1)	
5.4	40006.4	Sensor 3 High Shutdown (EXP.1)	
5.5	40006.5	Sensor 3 Low Shutdown (EXP.1)	
5.6	40006.6	Sensor 4 High Shutdown (EXP.1)	
5.7	40006.7	Sensor 4 Low Shutdown (EXP.1)	
5.8	40006.8	Sensor 5 High Shutdown (EXP.1)	
5.9	40006.9	Sensor 5 Low Shutdown (EXP.1)	
5.10	40006.10	Sensor 6 High Shutdown (EXP.1)	
5.11	40006.11	Sensor 6 Low Shutdown (EXP.1)	
5.12	40006.12	Sensor 7 High Shutdown (EXP.1)	
5.13	40006.13	Sensor 7 Low Shutdown (EXP.1)	
5.14	40006.14	Sensor 8 High Shutdown (EXP.1)	
5.15	40006.15	Sensor 8 Low Shutdown (EXP.1)	
6.0	40007.0	Sensor 9 High Shutdown (EXP.1)	
6.1	40007.1	Sensor 9 Low Shutdown (EXP.1)	
6.2	40007.2	Sensor 10 High Shutdown (EXP.1)	
6.3	40007.3	Sensor 10 Low Shutdown (EXP.1)	
6.4	40007.4	Sensor 11 High Shutdown (EXP.1)	
6.5	40007.5	Sensor 11 Low Shutdown (EXP.1)	
6.6	40007.6	Sensor 12 High Shutdown (EXP.1)	
6.7	40007.7	Sensor 12 Low Shutdown (EXP.1)	
6.8	40007.8	Sensor 13 High Shutdown (EXP.1)	
6.9	40007.9	Sensor 13 Low Shutdown (EXP.1)	
6.10	40007.10	Sensor 14 High Shutdown (EXP.1)	
6.11	40007.11	Sensor 14 Low Shutdown (EXP.1)	
6.12	40007.12	Sensor 15 High Shutdown (EXP.1)	
6.13	40007.13	Sensor 15 Low Shutdown (EXP.1)	
6.14	40007.14	Sensor 16 High Shutdown (EXP.1)	
6.15	40007.15	Sensor 16 Low Shutdown (EXP.1)	
7.0	40008.0	Sensor 1 High Shutdown (EXP. 2)	After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type
7.1	40008.1	Sensor 1 Low Shutdown (EXP. 2)	
7.2	40008.2	Sensor 2 High Shutdown (EXP. 2)	

Modbus Address	PLC Address	Item	Description
7.3	40008.3	Sensor 2Low Shutdown (EXP. 2)	sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors 15-24 of AIN24.
7.4	40008.4	Sensor 3 High Shutdown (EXP. 2)	
7.5	40008.5	Sensor 3 Low Shutdown (EXP. 2)	
7.6	40008.6	Sensor 4 High Shutdown (EXP. 2)	
7.7	40008.7	Sensor 4 Low Shutdown (EXP. 2)	
7.8	40008.8	Sensor5 High Shutdown (EXP. 2)	
7.9	40008.9	Sensor 5 Low Shutdown (EXP. 2)	
7.10	40008.10	Sensor 6 High Shutdown (EXP. 2)	
7.11	40008.11	Sensor 6 Low Shutdown (EXP. 2)	
7.12	40008.12	Sensor 7 High Shutdown (EXP. 2)	
7.13	40008.13	Sensor 7 Low Shutdown (EXP. 2)	
7.14	40008.14	Sensor 8 High Shutdown (EXP. 2)	
7.15	40008.15	Sensor 8 Low Shutdown (EXP. 2)	
8.0	40009.0	Sensor 9 High Shutdown (EXP. 2)	
8.1	40009.1	Sensor 9 Low Shutdown (EXP. 2)	
8.2	40009.2	Sensor 10 High Shutdown (EXP. 2)	
8.3	40009.3	Sensor 10 Low Shutdown (EXP. 2)	
8.4	40009.4	Sensor 11 High Shutdown (EXP. 2)	
8.5	40009.5	Sensor 11 Low Shutdown (EXP. 2)	
8.6	40009.6	Sensor 12 High Shutdown (EXP. 2)	
8.7	40009.7	Sensor 12 Low Shutdown (EXP. 2)	
8.8	40009.8	Sensor13 High Shutdown (EXP. 2)	
8.9	40009.9	Sensor 13 Low Shutdown (EXP. 2)	
8.10	40009.10	Sensor 14 High Shutdown (EXP. 2)	
8.11	40009.11	Sensor 14 Low Shutdown (EXP. 2)	
8.12	40009.12	Sensor 15 High Shutdown (EXP. 2)	
8.13	40009.13	Sensor 15 Low Shutdown (EXP. 2)	
8.14	40009.14	Sensor 16 High Shutdown (EXP. 2)	
8.15	40009.15	Sensor 16 Low Shutdown (EXP. 2)	
9.0	40010.0	Input 1 Shutdown	
9.1	40010.1	Input 2 Shutdown	
9.2	40010.2	Input 3 Shutdown	
9.3	40010.3	Input 4 Shutdown	
9.4	40010.4	Input 5 Shutdown	
9.5	40010.5	Input 6 Shutdown	
9.6	40010.6	Input 7 Shutdown	
9.7	40010.7	Input 8 Shutdown	
9.8	40010.8	Input 9 Shutdown	
9.9	40010.9	Input 10 Shutdown	
9.10	40010.10	Input 11 Shutdown	
9.11	40010.11	Input 12 Shutdown	
9.12	40010.12	Input 13 Shutdown	
9.13	40010.13	Input 14 Shutdown	

Modbus Address	PLC Address	Item	Description
9.14	40010.14	Input 15 Shutdown	
9.15	40010.15	Input 16 Shutdown	
10.0	40011.0	Input 17 Shutdown	
10.1	40011.1	Input 18 Shutdown	
10.2	40011.2	Gearbox Under Speed Shutdown	None
10.3	40011.3	Gearbox Over Speed Shutdown	None
10.4	40011.4	Exhaust Flap Fault Shutdown	
10.5	40011.5	Low Gearbox Working Oil Pressure Shutdown	
10.6	40011.6	Low Gearbox Oil Pressure Shutdown	
10.7	40011.7	Emergency Stop (RPU)	
10.8	40011.8	Input 1 Shutdown (RPU)	
10.9	40011.9	Input 2 Shutdown (RPU)	
10.10	40011.10	Input 3 Shutdown (RPU)	
10.11	40011.11	Input 4 Shutdown (RPU)	
10.12	40011.12	Input 5 Shutdown (RPU)	
10.13	40011.13	Over Speed Shutdown (RPU)	
10.14	40011.14	Louver Fault Shutdown	
10.15	40011.15	Reserved	
11.0	40012.0	Input 1 Shutdown (EXP.1)	
11.1	40012.1	Input 2 Shutdown (EXP.1)	
11.2	40012.2	Input 3 Shutdown (EXP.1)	
11.3	40012.3	Input 4 Shutdown (EXP.1)	
11.4	40012.4	Input 5 Shutdown (EXP.1)	
11.5	40012.5	Input 6 Shutdown (EXP.1)	
11.6	40012.6	Input 7 Shutdown (EXP.1)	
11.7	40012.7	Input 8 Shutdown (EXP.1)	
11.8	40012.8	Input 9 Shutdown (EXP.1)	
11.9	40012.9	Input 10 Shutdown (EXP.1)	
11.10	40012.10	Input 11 Shutdown (EXP.1)	
11.11	40012.11	Input 12 Shutdown (EXP.1)	
11.12	40012.12	Input 13 Shutdown (EXP.1)	
11.13	40012.13	Input 14 Shutdown (EXP.1)	
11.14	40012.14	Input 15 Shutdown (EXP.1)	
11.15	40012.15	Input 16 Shutdown (EXP.1)	
12.0	40013.0	Input 1 Shutdown (EXP.2)	
12.1	40013.1	Input 2 Shutdown (EXP.2)	
12.2	40013.2	Input 3 Shutdown (EXP.2)	
12.3	40013.3	Input 4 Shutdown (EXP.2)	
12.4	40013.4	Input 5 Shutdown (EXP.2)	
12.5	40013.5	Input 6 Shutdown (EXP.2)	
12.6	40013.6	Input 7 Shutdown (EXP.2)	
12.7	40013.7	Input 8 Shutdown (EXP.2)	
12.8	40013.8	Input 9 Shutdown (EXP.2)	

Modbus Address	PLC Address	Item	Description
12.9	40013.9	Input 10 Shutdown (EXP.2)	
12.10	40013.10	Input 11 Shutdown (EXP.2)	
12.11	40013.11	Input 12 Shutdown (EXP.2)	
12.12	40013.12	Input 13 Shutdown (EXP.2)	
12.13	40013.13	Input 14 Shutdown (EXP.2)	
12.14	40013.14	Input 15 Shutdown (EXP.2)	
12.15	40013.15	Input 16 Shutdown (EXP.2)	
13.0	40014.0	PLC Input 1 Indication	
13.1	40014.1	PLC Input 2 Indication	
13.2	40014.2	PLC Input 3 Indication	
13.3	40014.3	PLC Input 4 Indication	
13.4	40014.4	PLC Input 5 Indication	
13.5	40014.5	PLC Input 6 Indication	
13.6	40014.6	PLC Input 7 Indication	
13.7	40014.7	PLC Input 8 Indication	
13.8	40014.8	PLC Input 9 Indication	
13.9	40014.9	PLC Input 10 Indication	
13.10	40014.10	PLC Input 11 Indication	
13.11	40014.11	PLC Input 12 Indication	
13.12	40014.12	PLC Input 13 Indication	
13.13	40014.13	PLC Input 14 Indication	
13.14	40014.14	PLC Input 15 Indication	
13.15	40014.15	PLC Input 16 Indication	
14.0	40015.0	PLC Input 17 Indication	
14.1	40015.1	PLC Input 18 Indication	
14.2	40015.2	PLC Input 19 Indication	
14.3	40015.3	PLC Input 20 Indication	
14.4	40015.4	Reserved	
14.5	40015.5	Reserved	
14.6	40015.6	Reserved	
14.7	40015.7	Reserved	
14.8	40015.8	Reserved	
14.9	40015.9	Reserved	
14.10	40015.10	Reserved	
14.11	40015.11	Reserved	
14.12	40015.12	Reserved	
14.13	40015.13	Reserved	
14.14	40015.14	Reserved	
14.15	40015.15	Reserved	
15.0	40016.0	Reserved	
15.1	40016.1	Reserved	
15.2	40016.2	Reserved	
15.3	40016.3	Reserved	

Modbus Address	PLC Address	Item	Description
15.4	40016.4	Reserved	
15.5	40016.5	Reserved	
15.6	40016.6	Reserved	
15.7	40016.7	Reserved	
15.8	40016.8	Reserved	
15.9	40016.9	Reserved	
15.10	40016.10	Reserved	
15.11	40016.11	Reserved	
15.12	40016.12	Reserved	
15.13	40016.13	Reserved	
15.14	40016.14	Reserved	
15.15	40016.15	Reserved	
16.0	40017.0	Reserved	
16.1	40017.1	Reserved	
16.2	40017.2	Reserved	
16.3	40017.3	Reserved	
16.4	40017.4	Reserved	
16.5	40017.5	Reserved	
16.6	40017.6	Reserved	
16.7	40017.7	Reserved	
16.8	40017.8	Reserved	
16.9	40017.9	Reserved	
16.10	40017.10	Reserved	
16.11	40017.11	Reserved	
16.12	40017.12	Reserved	
16.13	40017.13	Reserved	
16.14	40017.14	Reserved	
16.15	40017.15	Reserved	
17.0	40018.0	Overvoltage Trip	None
17.1	40018.1	Undervoltage Trip	
17.2	40018.2	Loss of Phase Trip	
17.3	40018.3	Reverse Phase Sequence Trip	
17.4	40018.4	Over Frequency Trip	
17.5	40018.5	Under Frequency Trip	
17.6	40018.6	Overcurrent Trip	
17.7	40018.7	Reserved	
17.8	40018.8	Over Power Trip	
17.9	40018.9	Reserved	
17.10	40018.10	Reverse Power Trip	
17.11	40018.11	Reserved	
17.12	40018.12	Reserved	
17.13	40018.13	Reserved	
17.14	40018.14	Reserved	

Modbus Address	PLC Address	Item	Description
17.15	40018.15	Reserved	
18.0	40019.0	Overvoltage Warning	None
18.1	40019.1	Undervoltage Warning	
18.2	40019.2	Reserved	
18.3	40019.3	Reserved	
18.4	40019.4	Over Frequency Warning	
18.5	40019.5	Under Frequency Warning	
18.6	40019.6	Reserved	
18.7	40019.7	Overcurrent Warning	
18.8	40019.8	Reserved	
18.9	40019.9	Over Power Warning	
18.10	40019.10	Reserved	
18.11	40019.11	Reverse Power Warning	
18.12	40019.12	Reserved	
18.13	40019.13	Gearbox Under Speed Warning	
18.14	40019.14	Gearbox Over Speed Warning	
18.15	40019.15	Reserved	
19.0	40020.0	AIN8 Sensor 1 Open Circuit Warning	
19.1	40020.1	AIN8 Sensor 1 High Warning	
19.2	40020.2	AIN8 Sensor 1 Low Warning	
19.3	40020.3	Reserved	
19.4	40020.4	AIN8 Sensor 2 Open Circuit Warning	
19.5	40020.5	AIN8 Sensor 2 High Warning	
19.6	40020.6	AIN8 Sensor 2 Low Warning	
19.7	40020.7	Reserved	
19.8	40020.8	AIN8 Sensor 3 Open Circuit Warning	
19.9	40020.9	AIN8 Sensor 3 High Warning	
19.10	40020.10	AIN8 Sensor 3 Low Warning	
19.11	40020.11	Reserved	
19.12	40020.12	AIN8 Sensor 4 Open Circuit Warning	
19.13	40020.13	AIN8 Sensor 4 High Warning	
19.14	40020.14	AIN8 Sensor 4 Low Warning	
19.15	40020.15	Reserved	
20.0	40021.0	AIN8 Sensor 5 Open Circuit Warning	
20.1	40021.1	AIN8 Sensor 5 High Warning	
20.2	40021.2	AIN8 Sensor 5 Low Warning	
20.3	40021.3	Reserved	
20.4	40021.4	AIN8 Sensor 6 Open Circuit Warning	
20.5	40021.5	AIN8 Sensor 6 High Warning	
20.6	40021.6	AIN8 Sensor 6 Low Warning	
20.7	40021.7	Reserved	
20.8	40021.8	AIN8 Sensor 7 Open Circuit Warning	
20.9	40021.9	AIN8 Sensor 7 High Warning	

Modbus Address	PLC Address	Item	Description
20.10	40021.10	AIN8 Sensor 7 Low Warning	
20.11	40021.11	Reserved	
20.12	40021.12	AIN8 Sensor 8 Open Circuit Warning	
20.13	40021.13	AIN8 Sensor 8 High Warning	
20.14	40021.14	AIN8 Sensor 8 Low Warning	
20.15	40021.15	Reserved	
21.0	40022.0	Over Speed Warning	
21.1	40022.1	Under Speed Warning	
21.2	40022.2	Loss of Speed Signal Warning	
21.3	40022.3	Charging Alternator Failure Warning	
21.4	40022.4	Start Failure Warning	
21.5	40022.5	Stop Failure Warning	
21.6	40022.6	Main Power Over Voltage Warning	
21.7	40022.7	Backup Power Over Voltage Warning	
21.8	40022.8	Main Power Under Voltage Warning	
21.9	40022.9	Backup Power Under Voltage Warning	
21.10	40022.10	Close Failure Warning	
21.11	40022.11	Open Failure Warning	
21.12	40022.12	ECU Comm. Failure Warning	
21.13	40022.13	ECU Warning	
21.14	40022.14	Brake Actuator 1 Fault	
21.15	40022.15	HMP300 Comm. Failure Warning	
22.0	40023.0	RPU Comm. Failure Warning	
22.1	40023.1	Exp. Input 1 Comm. Failure Warning	
22.2	40023.2	Exp. Input 2 Comm. Failure Warning	
22.3	40023.3	Exp. Output 1 Comm. Failure Warning	
22.4	40023.4	Exp. Output 2 Comm. Failure Warning	
22.5	40023.5	Analog Input 1 Comm. Failure Warning	
22.6	40023.6	Analog Input 2 Comm. Failure Warning	
22.7	40023.7	Exp. LED Board 1 Comm. Failure Warning	
22.8	40023.8	Exp. LED Board 2 Comm. Failure Warning	
22.9	40023.9	Remote Module 1 Comm. Failure Warning	None
22.10	40023.10	Remote Module 2 Comm. Failure Warning	
22.11	40023.11	Reserved	
22.12	40023.12	Reserved	
22.13	40023.13	Reserved	
22.14	40023.14	AIN8 Comm. Failure Warning	
22.15	40023.15	High Oil Pressure Differential Warning	
23.0	40024.0	Sensor 1 Open Circuit Warning	
23.1	40024.1	Sensor 1 High Warning	
23.2	40024.2	Sensor 1 Low Warning	
23.3	40024.3	Reserved	
23.4	40024.4	Sensor 2 Open Circuit Warning	

Modbus Address	PLC Address	Item	Description
23.5	40024.5	Sensor 2 High Warning	
23.6	40024.6	Sensor 2 Low Warning	
23.7	40024.7	Reserved	
23.8	40024.8	Sensor 3 Open Circuit Warning	
23.9	40024.9	Sensor 3 High Warning	
23.10	40024.10	Sensor 3 Low Warning	
23.11	40024.11	Reserved	
23.12	40024.12	Sensor 4 Open Circuit Warning	
23.13	40024.13	Sensor 4 High Warning	
23.14	40024.14	Sensor 4 Low Warning	
23.15	40024.15	Reserved	
24.0	40025.0	Sensor 5 Open Circuit Warning	
24.1	40025.1	Sensor 5 High Warning	
24.2	40025.2	Sensor 5 Low Warning	
24.3	40025.3	Reserved	
24.4	40025.4	Sensor 6 Open Circuit Warning	
24.5	40025.5	Sensor 6 High Warning	
24.6	40025.6	Sensor 6 Low Warning	
24.7	40025.7	Reserved	
24.8	40025.8	Sensor 7 Open Circuit Warning	
24.9	40025.9	Sensor 7 High Warning	
24.10	40025.10	Sensor 7 Low Warning	
24.11	40025.11	Reserved	
24.12	40025.12	Sensor 8 Open Circuit Warning	
24.13	40025.13	Sensor 8 High Warning	
24.14	40025.14	Sensor 8 Low Warning	
24.15	40025.15	Reserved	
25.0	40026.0	Sensor 1 Open Circuit Warning (EXP.1)	After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors on channels 15-24 of AIN24.
25.1	40026.1	Sensor 1 High Warning (EXP.1)	
25.2	40026.2	Sensor 1 Low Warning (EXP.1)	
25.3	40026.3	Reserved	
25.4	40026.4	Sensor 2 Open Circuit Warning (EXP.1)	
25.5	40026.5	Sensor 2 High Warning (EXP.1)	
25.6	40026.6	Sensor 2 Low Warning (EXP.1)	
25.7	40026.7	Reserved	
25.8	40026.8	Sensor 3 Open Circuit Warning (EXP.1)	
25.9	40026.9	Sensor 3 High Warning (EXP.1)	
25.10	40026.10	Sensor 3 Low Warning (EXP.1)	
25.11	40026.11	Reserved	
25.12	40026.12	Sensor 4 Open Circuit Warning (EXP.1)	
25.13	40026.13	Sensor 4 High Warning (EXP.1)	
25.14	40026.14	Sensor 4 Low Warning (EXP.1)	
25.15	40026.15	Reserved	

Modbus Address	PLC Address	Item	Description
26.0	40027.0	Sensor 5 Open Circuit Warning (EXP.1)	
26.1	40027.1	Sensor 5 High Warning (EXP.1)	
26.2	40027.2	Sensor 5 Low Warning (EXP.1)	
26.3	40027.3	Reserved	
26.4	40027.4	Sensor 6 Open Circuit Warning (EXP.1)	
26.5	40027.5	Sensor 6 High Warning (EXP.1)	
26.6	40027.6	Sensor 6 Low Warning (EXP.1)	
26.7	40027.7	Reserved	
26.8	40027.8	Sensor 7 Open Circuit Warning (EXP.1)	
26.9	40027.9	Sensor 7 High Warning (EXP.1)	
26.10	40027.10	Sensor 7 Low Warning (EXP.1)	
26.11	40027.11	Reserved	
26.12	40027.12	Sensor 8 Open Circuit Warning (EXP.1)	
26.13	40027.13	Sensor 8 High Warning (EXP.1)	
26.14	40027.14	Sensor 8 Low Warning (EXP.1)	
26.15	40027.15	Reserved	
27.0	40028.0	Sensor 9 Open Circuit Warning (EXP.1)	
27.1	40028.1	Sensor 9 High Warning (EXP.1)	
27.2	40028.2	Sensor 9 Low Warning (EXP.1)	
27.3	40028.3	Reserved	
27.4	40028.4	Sensor 10 Open Circuit Warning (EXP.1)	
27.5	40028.5	Sensor 10 High Warning (EXP.1)	
27.6	40028.6	Sensor 10 Low Warning (EXP.1)	
27.7	40028.7	Reserved	
27.8	40028.8	Sensor 11 Open Circuit Warning (EXP.1)	
27.9	40028.9	Sensor 11 High Warning(EXP.1)	
27.10	40028.10	Sensor 11 Low Warning (EXP.1)	
27.11	40028.11	Reserved	
27.12	40028.12	Sensor 12 Open Circuit Warning (EXP.1)	
27.13	40028.13	Sensor 12 High Warning (EXP.1)	
27.14	40028.14	Sensor 12 Low Warning (EXP.1)	
27.15	40028.15	Reserved	
28.0	40029.0	Sensor 13 Open Circuit Warning (EXP.1)	
28.1	40029.1	Sensor 13 High Warning (EXP.1)	
28.2	40029.2	Sensor 13 Low Warning (EXP.1)	
28.3	40029.3	Reserved	
28.4	40029.4	Sensor 14 Open Circuit Warning (EXP.1)	
28.5	40029.5	Sensor 14 High Warning (EXP.1)	
28.6	40029.6	Sensor 14 Low Warning (EXP.1)	
28.7	40029.7	Reserved	
28.8	40029.8	Sensor 15 Open Circuit Warning (EXP.1)	
28.9	40029.9	Sensor 15 High Warning (EXP.1)	
28.10	40029.10	Sensor 15 Low Warning (EXP.1)	

Modbus Address	PLC Address	Item	Description
28.11	40029.11	Reserved	
28.12	40029.12	Sensor 16 Open Circuit Warning (EXP.1)	
28.13	40029.13	Sensor 16 High Warning (EXP.1)	
28.14	40029.14	Sensor 16 Low Warning (EXP.1)	
28.15	40029.15	Reserved	
29.0	40030.0	Sensor 1 Open Circuit Warning (EXP.2)	After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors on channels 15-24 of AIN24.
29.1	40030.1	Sensor 1 High Warning (EXP.2)	
29.2	40030.2	Sensor 1 Low Warning (EXP.2)	
29.3	40030.3	Reserved	
29.4	40030.4	Sensor 2 Open Circuit Warning (EXP.2)	
29.5	40030.5	Sensor 2 High Warning (EXP.2)	
29.6	40030.6	Sensor 2 Low Warning (EXP.2)	
29.7	40030.7	Reserved	
29.8	40030.8	Sensor 3 Open Circuit Warning (EXP.2)	
29.9	40030.9	Sensor 3 High Warning (EXP.2)	
29.10	40030.10	Sensor 3 Low Warning (EXP.2)	
29.11	40030.11	Reserved	
29.12	40030.12	Sensor 4 Open Circuit Warning (EXP.2)	
29.13	40030.13	Sensor 4 High Warning (EXP.2)	
29.14	40030.14	Sensor 4 Low Warning (EXP.2)	
29.15	40030.15	Reserved	
30.0	40031.0	Sensor 5 Open Circuit Warning (EXP.2)	
30.1	40031.1	Sensor 5 High Warning (EXP.2)	
30.2	40031.2	Sensor 5 Low Warning (EXP.2)	
30.3	40031.3	Reserved	
30.4	40031.4	Sensor 6 Open Circuit Warning (EXP.2)	
30.5	40031.5	Sensor 6 High Warning (EXP.2)	
30.6	40031.6	Sensor 6 Low Warning (EXP.2)	
30.7	40031.7	Reserved	
30.8	40031.8	Sensor 7 Open Circuit Warning (EXP.2)	
30.9	40031.9	Sensor 7 High Warning (EXP.2)	
30.10	40031.10	Sensor 7 Low Warning (EXP.2)	
30.11	40031.11	Reserved	
30.12	40031.12	Sensor 8 Open Circuit Warning (EXP.2)	
30.13	40031.13	Sensor 8 High Warning (EXP.2)	
30.14	40031.14	Sensor 8 Low Warning (EXP.2)	
30.15	40031.15	Reserved	
31.0	40032.0	Sensor 9 Open Circuit Warning (EXP.2)	
31.1	40032.1	Sensor 9 High Warning (EXP.2)	
31.2	40032.2	Sensor 9 Low Warning (EXP.2)	
31.3	40032.3	Reserved	
31.4	40032.4	Sensor 10 Open Circuit Warning (EXP.2)	
31.5	40032.5	Sensor 10 High Warning (EXP.2)	

Modbus Address	PLC Address	Item	Description
31.6	40032.6	Sensor 10 Low Warning (EXP.2)	
31.7	40032.7	Reserved	
31.8	40032.8	Sensor 11 Open Circuit Warning (EXP.2)	
31.9	40032.9	Sensor 11 High Warning (EXP.2)	
31.10	40032.10	Sensor 11 Low Warning (EXP.2)	
31.11	40032.11	Reserved	
31.12	40032.12	Sensor 12 Open Circuit Warning (EXP.2)	
31.13	40032.13	Sensor 12 High Warning (EXP.2)	
31.14	40032.14	Sensor 12 Low Warning (EXP.2)	
31.15	40032.15	Reserved	
32.0	40033.0	Sensor 13 Open Circuit Warning (EXP.2)	
32.1	40033.1	Sensor 13 High Warning (EXP.2)	
32.2	40033.2	Sensor 13 Low Warning (EXP.2)	
32.3	40033.3	Reserved	
32.4	40033.4	Sensor 14 Open Circuit Warning (EXP.2)	
32.5	40033.5	Sensor 14 High Warning (EXP.2)	
32.6	40033.6	Sensor 14 Low Warning (EXP.2)	
32.7	40033.7	Reserved	
32.8	40033.8	Sensor 15 Open Circuit Warning (EXP.2)	
32.9	40033.9	Sensor 15 High Warning (EXP.2)	
32.10	40033.10	Sensor 15 Low Warning (EXP.2)	
32.11	40033.11	Reserved	
32.12	40033.12	Sensor 16 Open Circuit Warning (EXP.2)	
32.13	40033.13	Sensor 16 High Warning (EXP.2)	
32.14	40033.14	Sensor 16 Low Warning (EXP.2)	
32.15	40033.15	Reserved	
33.0	40034.0	Input 1 Warning	
33.1	40034.1	Input 2 Warning	
33.2	40034.2	Input 3 Warning	
33.3	40034.3	Input 4 Warning	
33.4	40034.4	Input 5 Warning	
33.5	40034.5	Input 6 Warning	
33.6	40034.6	Input 7 Warning	
33.7	40034.7	Input 8 Warning	
33.8	40034.8	Input 9 Warning	
33.9	40034.9	Input 10 Warning	
33.10	40034.10	Input 11 Warning	
33.11	40034.11	Input 12 Warning	
33.12	40034.12	Input 13 Warning	
33.13	40034.13	Input 14 Warning	
33.14	40034.14	Input 15 Warning	
33.15	40034.15	Input 16 Warning	
34.0	40035.0	Input 17 Warning	

Modbus Address	PLC Address	Item	Description
34.1	40035.1	Input 18 Warning	
34.2	40035.2	Speed Broken Wire Warning	
34.3	40035.3	Class II Warning (CATEGORY2_WARN)	
34.4	40035.4	Power Supply Fault	
34.5	40035.5	Exhaust Flap Open Failure	
34.6	40035.6	Exhaust Flap Fault	
34.7	40035.7	Over Speed Warning (RPU)	
34.8	40035.8	Input 1 Warning (RPU)	None
34.9	40035.9	Input 2 Warning (RPU)	
34.10	40035.10	Input 3 Warning (RPU)	
34.11	40035.11	Input 4 Warning (RPU)	
34.12	40035.12	Input 5 Warning (RPU)	
34.13	40035.13	Gearbox Interlock Warning (GEARBOX_LOCK_WARN)	
34.14	40035.14	Louver Open Failure	
34.15	40035.15	Reserved	
35.0	40036.0	Input 1 Warning (EXP.1)	
35.1	40036.1	Input 2 Warning (EXP.1)	
35.2	40036.2	Input 3 Warning (EXP.1)	
35.3	40036.3	Input 4 Warning (EXP.1)	
35.4	40036.4	Input 5 Warning (EXP.1)	
35.5	40036.5	Input 6 Warning (EXP.1)	
35.6	40036.6	Input 7 Warning (EXP.1)	
35.7	40036.7	Input 8 Warning (EXP.1)	
35.8	40036.8	Input 9 Warning (EXP.1)	
35.9	40036.9	Input 10 Warning (EXP.1)	
35.10	40036.10	Input 11 Warning (EXP.1)	
35.11	40036.11	Input 12 Warning (EXP.1)	
35.12	40036.12	Input 13 Warning (EXP.1)	
35.13	40036.13	Input 14 Warning (EXP.1)	
35.14	40036.14	Input 15 Warning (EXP.1)	
35.15	40036.15	Input 16 Warning (EXP.1)	
36.0	40037.0	Input 1 Warning (EXP.2)	
36.1	40037.1	Input 2 Warning (EXP.2)	
36.2	40037.2	Input 3 Warning (EXP.2)	
36.3	40037.3	Input 4 Warning (EXP.2)	
36.4	40037.4	Input 5 Warning (EXP.2)	
36.5	40037.5	Input 6 Warning (EXP.2)	
36.6	40037.6	Input 7 Warning (EXP.2)	
36.7	40037.7	Input 8 Warning (EXP.2)	
36.8	40037.8	Input 9 Warning (EXP.2)	
36.9	40037.9	Input 10 Warning (EXP.2)	
36.10	40037.10	Input 11 Warning (EXP.2)	

Modbus Address	PLC Address	Item	Description
36.11	40037.11	Input 12 Warning (EXP.2)	
36.12	40037.12	Input 13 Warning (EXP.2)	
36.13	40037.13	Input 14 Warning (EXP.2)	
36.14	40037.14	Input 15 Warning (EXP.2)	
36.15	40037.15	Input 16 Warning (EXP.2)	
37.0	40038.0	Input 1 Broken Wire Warning	
37.1	40038.1	Input 2 Broken Wire Warning	
37.2	40038.2	Input 3 Broken Wire Warning	
37.3	40038.3	Input 4 Broken Wire Warning	
37.4	40038.4	Input 5 Broken Wire Warning	
37.5	40038.5	Input 6 Broken Wire Warning	
37.6	40038.6	Output 1 Broken Wire Warning	
37.7	40038.7	Output 2 Broken Wire Warning	
37.8	40038.8	Output 3 Broken Wire Warning	
37.9	40038.9	Fuel Output Broken Wire Warning	
37.10	40038.10	Input 1 Broken Wire Warning (RPU)	
37.11	40038.11	Input 2 Broken Wire Warning (RPU)	
37.12	40038.12	Input 3 Broken Wire Warning (RPU)	
37.13	40038.13	Input 4 Broken Wire Warning (RPU)	
37.14	40038.14	Input 5 Broken Wire Warning (RPU)	
37.15	40038.15	Fuel Output Broken Wire Warning (RPU)	
38.0	40039.0	Stop Output Broken Wire Warning (RPU)	
38.1	40039.1	Speed Broken Wire Warning (RPU)	
38.2	40039.2	Emergency Stop Broken Wire Warning (RPU)	
38.3	40039.3	High Coolant Temp. (ECU)	None
38.4	40039.4	High Oil Temp. (ECU)	
38.5	40039.5	Low Oil Pressure (ECU)	
38.6	40039.6	Over Speed (ECU)	
38.7	40039.7	Reserved	
38.8	40039.8	ANI16-C1 Comm. Failure	
38.9	40039.9	ANI16-C2 Comm. Failure	
38.10	40039.10	ANI16-PT1 Comm. Failure	
38.11	40039.11	ANI16-PT2 Comm. Failure	
38.12	40039.12	ANI16-K1 Comm. Failure	
38.13	40039.13	ANI16- K2 Comm. Failure	
38.14	40039.14	ANI16-M01 Comm. Failure	
38.15	40039.15	ANI16-M02 Comm. Failure	
39.0	40040.0	Sensor 1 Open Circuit Warning (RPU)	
39.1	40040.1	Sensor 1 High Warning (RPU)	
39.2	40040.2	Sensor 1 Low Warning (RPU)	
39.3	40040.3	Sensor 2 Open Circuit Warning (RPU)	
39.4	40040.4	Sensor 2 High Warning (RPU)	
39.5	40040.5	Sensor 2 Low Warning (RPU)	

Modbus Address	PLC Address	Item	Description
39.6	40040.6	Reserved	
39.7	40040.7	AIN8-2 Comm. Failure Warning	
39.8	40040.8	Sensor 9 Open Circuit Warning	
39.9	40040.9	Sensor 9 High Warning	
39.10	40040.10	Sensor 9 Low Warning	
39.11	40040.11	Stern Shaft Sensor Open Circuit Warning	
39.12	40040.12	Sensor 10 Open Circuit Warning	
39.13	40040.13	Sensor 10 High Warning	
39.14	40040.14	Sensor 10 Low Warning	
39.15	40040.15	Gearbox Direction Error Alarm	
40.0	40041.0	Input 1 Indication	
40.1	40041.1	Input 2 Indication	
40.2	40041.2	Input 3 Indication	
40.3	40041.3	Input 4 Indication	
40.4	40041.4	Input 5 Indication	
40.5	40041.5	Input 6 Indication	
40.6	40041.6	Input 7 Indication	
40.7	40041.7	Input 8 Indication	
40.8	40041.8	Input 9 Indication	
40.9	40041.9	Input 10 Indication	
40.10	40041.10	Input 11 Indication	
40.11	40041.11	Input 12 Indication	
40.12	40041.12	Input 13 Indication	
40.13	40041.13	Input 14 Indication	
40.14	40041.14	Input 15 Indication	
40.15	40041.15	Input 16 Indication	
41.0	40042.0	Input 17 Indication	
41.1	40042.1	Input 18 Indication	
41.2	40042.2	Reserved	
41.3	40042.3	Reserved	
41.4	40042.4	Reserved	
41.5	40042.5	Gearbox Forward Command	
41.6	40042.6	Gearbox Backward Command	
41.7	40042.7	Gearbox Idling Command	
41.8	40042.8	Input 1 Indication (RPU)	
41.9	40042.9	Input 2 Indication (RPU)	
41.10	40042.10	Input 3 Indication (RPU)	
41.11	40042.11	Input 4 Indication (RPU)	
41.12	40042.12	Input 5 Indication (RPU)	
41.13	40042.13	Reserved	
41.14	40042.14	Reserved	
41.15	40042.15	Class II Alarm Indication	
42.0	40043.0	Input 1 Indication (EXP.1)	

Modbus Address	PLC Address	Item	Description
42.1	40043.1	Input 2 Indication (EXP.1)	
42.2	40043.2	Input 3 Indication (EXP.1)	
42.3	40043.3	Input 4 Indication (EXP.1)	
42.4	40043.4	Input 5 Indication (EXP.1)	
42.5	40043.5	Input 6 Indication (EXP.1)	
42.6	40043.6	Input 7 Indication (EXP.1)	
42.7	40043.7	Input 8 Indication (EXP.1)	
42.8	40043.8	Input 9 Indication (EXP.1)	
42.9	40043.9	Input 10 Indication (EXP.1)	
42.10	40043.10	Input 11 Indication (EXP.1)	
42.11	40043.11	Input 12 Indication (EXP.1)	
42.12	40043.12	Input 13 Indication (EXP.1)	
42.13	40043.13	Input 14 Indication (EXP.1)	
42.14	40043.14	Input 15 Indication (EXP.1)	
42.15	40043.15	Input 16 Indication (EXP.1)	
43.0	40044.0	Input 1 Indication (EXP.2)	
43.1	40044.1	Input 2 Indication (EXP.2)	
43.2	40044.2	Input 3 Indication (EXP.2)	
43.3	40044.3	Input 4 Indication (EXP.2)	
43.4	40044.4	Input 5 Indication (EXP.2)	
43.5	40044.5	Input 6 Indication (EXP.2)	
43.6	40044.6	Input 7 Indication (EXP.2)	
43.7	40044.7	Input 8 Indication (EXP.2)	
43.8	40044.8	Input 9 Indication (EXP.2)	
43.9	40044.9	Input 10 Indication (EXP.2)	
43.10	40044.10	Input 11 Indication (EXP.2)	
43.11	40044.11	Input 12 Indication (EXP.2)	
43.12	40044.12	Input 13 Indication (EXP.2)	
43.13	40044.13	Input 14 Indication (EXP.2)	
43.14	40044.14	Input 15 Indication (EXP.2)	
43.15	40044.15	Input 16 Indication (EXP.2)	
44.0	40045.0	Input 1 Active	
44.1	40045.1	Input 2 Active	
44.2	40045.2	Input 3 Active	
44.3	40045.3	Input 4 Active	
44.4	40045.4	Input 5 Active	
44.5	40045.5	Input 6 Active	
44.6	40045.6	Input 7 Active	
44.7	40045.7	Input 8 Active	
44.8	40045.8	Input 9 Active	
44.9	40045.9	Input 10 Active	
44.10	40045.10	Input 11 Active	
44.11	40045.11	Input 12 Active	

Modbus Address	PLC Address	Item	Description
44.12	40045.12	Input 13 Active	
44.13	40045.13	Input 14 Active	
44.14	40045.14	Input 15 Active	
44.15	40045.15	Input 16 Active	
45.0	40046.0	Input 17 Active	
45.1	40046.1	Input 18 Active	
45.2	40046.2	Reserved	
45.3	40046.3	Reserved	
45.4	40046.4	Reserved	
45.5	40046.5	Reserved	
45.6	40046.6	Reserved	
45.7	40046.7	Reserved	
45.8	40046.8	Input 1 Active (RPU)	
45.9	40046.9	Input 2 Active (RPU)	
45.10	40046.10	Input 3 Active (RPU)	
45.11	40046.11	Input 4 Active (RPU)	
45.12	40046.12	Input 5 Active (RPU)	
45.13	40046.13	Reserved	
45.14	40046.14	Reserved	
45.15	40046.15	Reserved	
46.0	40047.0	Input 1 Active (EXP.1)	
46.1	40047.1	Input 2 Active (EXP.1)	
46.2	40047.2	Input 3 Active (EXP.1)	
46.3	40047.3	Input 4 Active (EXP.1)	
46.4	40047.4	Input 5 Active (EXP.1)	
46.5	40047.5	Input 6 Active (EXP.1)	
46.6	40047.6	Input 7 Active (EXP.1)	
46.7	40047.7	Input 8 Active (EXP.1)	
46.8	40047.8	Input 9 Active (EXP.1)	
46.9	40047.9	Input 10 Active (EXP.1)	
46.10	40047.10	Input 11 Active (EXP.1)	
46.11	40047.11	Input 12 Active (EXP.1)	
46.12	40047.12	Input 13 Active (EXP.1)	
46.13	40047.13	Input 14 Active (EXP.1)	
46.14	40047.14	Input 15 Active (EXP.1)	
46.15	40047.15	Input 16 Active (EXP.1)	
47.0	40048.0	Input 1 Active (EXP.2)	
47.1	40048.1	Input 2 Active (EXP.2)	
47.2	40048.2	Input 3 Active (EXP.2)	
47.3	40048.3	Input 4 Active (EXP.2)	
47.4	40048.4	Input 5 Active (EXP.2)	
47.5	40048.5	Input 6 Active (EXP.2)	
47.6	40048.6	Input 7 Active (EXP.2)	

Modbus Address	PLC Address	Item	Description
47.7	40048.7	Input 8 Active (EXP.2)	
47.8	40048.8	Input 9 Active (EXP.2)	
47.9	40048.9	Input 10 Active (EXP.2)	
47.10	40048.10	Input 11 Active (EXP.2)	
47.11	40048.11	Input 12 Active (EXP.2)	
47.12	40048.12	Input 13 Active (EXP.2)	
47.13	40048.13	Input 14 Active (EXP.2)	
47.14	40048.14	Input 15 Active (EXP.2)	
47.15	40048.15	Input 16 Active (EXP.2)	
48.0	40049.0	Sensor 1 High Shutdown (AIN_C1)	
48.1	40049.1	Sensor 1 Low Shutdown (AIN_C1)	
48.2	40049.2	Sensor 2 High Shutdown (AIN_C1)	
48.3	40049.3	Sensor 2 Low Shutdown (AIN_C1)	
48.4	40049.4	Sensor 3 High Shutdown (AIN_C1)	
48.5	40049.5	Sensor 3 Low Shutdown (AIN_C1)	
48.6	40049.6	Sensor 4 High Shutdown (AIN_C1)	
48.7	40049.7	Sensor 4 Low Shutdown (AIN_C1)	
48.8	40049.8	Sensor 5 High Shutdown (AIN_C1)	
48.9	40049.9	Sensor 5 Low Shutdown (AIN_C1)	
48.10	40049.10	Sensor 6 High Shutdown (AIN_C1)	
48.11	40049.11	Sensor 6 Low Shutdown (AIN_C1)	
48.12	40049.12	Sensor 7 High Shutdown (AIN_C1)	
48.13	40049.13	Sensor 7 Low Shutdown (AIN_C1)	
48.14	40049.14	Sensor 8 High Shutdown (AIN_C1)	
48.15	40049.15	Sensor 8 Low Shutdown (AIN_C1)	
49.0	40050.0	Sensor 9 High Shutdown (AIN_C1)	
49.1	40050.1	Sensor 9 Low Shutdown (AIN_C1)	
49.2	40050.2	Sensor 10 High Shutdown (AIN_C1)	
49.3	40050.3	Sensor 10 Low Shutdown (AIN_C1)	
49.4	40050.4	Sensor 11 High Shutdown (AIN_C1)	
49.5	40050.5	Sensor 11 Low Shutdown (AIN_C1)	
49.6	40050.6	Sensor 12 High Shutdown (AIN_C1)	
49.7	40050.7	Sensor 12 Low Shutdown (AIN_C1)	
49.8	40050.8	Sensor 13 High Shutdown (AIN_C1)	
49.9	40050.9	Sensor 13 Low Shutdown (AIN_C1)	
49.10	40050.10	Sensor 14 High Shutdown (AIN_C1)	
49.11	40050.11	Sensor 14 Low Shutdown (AIN_C1)	
49.12	40050.12	Sensor 15 High Shutdown (AIN_C1)	
49.13	40050.13	Sensor 15 Low Shutdown (AIN_C1)	
49.14	40050.14	Sensor 16 High Shutdown (AIN_C1)	
49.15	40050.15	Sensor 16 Low Shutdown (AIN_C1)	
50.0	40051.0	Sensor 1 High Shutdown (AIN_C2)	
50.1	40051.1	Sensor 1 Low Shutdown (AIN_C2)	

Modbus Address	PLC Address	Item	Description
50.2	40051.2	Sensor 2 High Shutdown (AIN_C2)	
50.3	40051.3	Sensor 2 Low Shutdown (AIN_C2)	
50.4	40051.4	Sensor 3 High Shutdown (AIN_C2)	
50.5	40051.5	Sensor 3 Low Shutdown (AIN_C2)	
50.6	40051.6	Sensor 4 High Shutdown (AIN_C2)	
50.7	40051.7	Sensor 4 Low Shutdown (AIN_C2)	
50.8	40051.8	Sensor 5 High Shutdown (AIN_C2)	
50.9	40051.9	Sensor 5 Low Shutdown (AIN_C2)	
50.10	40051.10	Sensor 6 High Shutdown (AIN_C2)	
50.11	40051.11	Sensor 6 Low Shutdown (AIN_C2)	
50.12	40051.12	Sensor 7 High Shutdown (AIN_C2)	
50.13	40051.13	Sensor 7 Low Shutdown (AIN_C2)	
50.14	40051.14	Sensor 8 High Shutdown (AIN_C2)	
50.15	40051.15	Sensor 8 Low Shutdown (AIN_C2)	
51.0	40052.0	Sensor 9 High Shutdown (AIN_C2)	
51.1	40052.1	Sensor 9 Low Shutdown (AIN_C2)	
51.2	40052.2	Sensor 10 High Shutdown (AIN_C2)	
51.3	40052.3	Sensor 10 Low Shutdown (AIN_C2)	
51.4	40052.4	Sensor 11 High Shutdown (AIN_C2)	
51.5	40052.5	Sensor 11 Low Shutdown (AIN_C2)	
51.6	40052.6	Sensor 12 High Shutdown (AIN_C2)	
51.7	40052.7	Sensor 12 Low Shutdown (AIN_C2)	
51.8	40052.8	Sensor 13 High Shutdown (AIN_C2)	
51.9	40052.9	Sensor 13 Low Shutdown (AIN_C2)	
51.10	40052.10	Sensor 14 High Shutdown (AIN_C2)	
51.11	40052.11	Sensor 14 Low Shutdown (AIN_C2)	
51.12	40052.12	Sensor 15 High Shutdown (AIN_C2)	
51.13	40052.13	Sensor 15 Low Shutdown (AIN_C2)	
51.14	40052.14	Sensor 16 High Shutdown (AIN_C2)	
51.15	40052.15	Sensor 16 Low Shutdown (AIN_C2)	
52.0	40053.0	Sensor 1 High Shutdown (AIN_PT1)	After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors on channels 15-24
52.1	40053.1	Sensor 1 Low Shutdown (AIN_PT1)	
52.2	40053.2	Sensor 2 High Shutdown (AIN_PT1)	
52.3	40053.3	Sensor 2 Low Shutdown (AIN_PT1)	
52.4	40053.4	Sensor 3 High Shutdown (AIN_PT1)	
52.5	40053.5	Sensor 3 Low Shutdown (AIN_PT1)	
52.6	40053.6	Sensor 4 High Shutdown (AIN_PT1)	
52.7	40053.7	Sensor 4 Low Shutdown (AIN_PT1)	
52.8	40053.8	Sensor 5 High Shutdown (AIN_PT1)	
52.9	40053.9	Sensor 5 Low Shutdown (AIN_PT1)	
52.10	40053.10	Sensor 6 High Shutdown (AIN_PT1)	
52.11	40053.11	Sensor 6 Low Shutdown (AIN_PT1)	
52.12	40053.12	Sensor 7 High Shutdown (AIN_PT1)	

Modbus Address	PLC Address	Item	Description
52.13	40053.13	Sensor 7 Low Shutdown (AIN_PT1)	of AIN24.
52.14	40053.14	Sensor 8 High Shutdown (AIN_PT1)	
52.15	40053.15	Sensor 8 Low Shutdown (AIN_PT1)	
53.0	40054.0	Sensor 9 High Shutdown (AIN_PT1)	
53.1	40054.1	Sensor 9 Low Shutdown (AIN_PT1)	
53.2	40054.2	Sensor 10 High Shutdown (AIN_PT1)	
53.3	40054.3	Sensor 10 Low Shutdown (AIN_PT1)	
53.4	40054.4	Sensor 11 High Shutdown (AIN_PT1)	
53.5	40054.5	Sensor 11 Low Shutdown (AIN_PT1)	
53.6	40054.6	Sensor 12 High Shutdown (AIN_PT1)	
53.7	40054.7	Sensor 12 Low Shutdown (AIN_PT1)	
53.8	40054.8	Sensor 13 High Shutdown (AIN_PT1)	
53.9	40054.9	Sensor 13 Low Shutdown (AIN_PT1)	
53.10	40054.10	Sensor 14 High Shutdown (AIN_PT1)	
53.11	40054.11	Sensor 14 Low Shutdown (AIN_PT1)	
53.12	40054.12	Sensor 15 High Shutdown (AIN_PT1)	
53.13	40054.13	Sensor 15 Low Shutdown (AIN_PT1)	
53.14	40054.14	Sensor 16 High Shutdown (AIN_PT1)	
53.15	40054.15	Sensor 16 Low Shutdown (AIN_PT1)	
54.0	40055.0	Sensor 1 High Shutdown (AIN_PT2)	After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors on channels 15-24 of AIN24.
54.1	40055.1	Sensor 1 Low Shutdown (AIN_PT2)	
54.2	40055.2	Sensor 2 High Shutdown (AIN_PT2)	
54.3	40055.3	Sensor 2 Low Shutdown (AIN_PT2)	
54.4	40055.4	Sensor 3 High Shutdown (AIN_PT2)	
54.5	40055.5	Sensor 3 Low Shutdown (AIN_PT2)	
54.6	40055.6	Sensor 4 High Shutdown (AIN_PT2)	
54.7	40055.7	Sensor 4 Low Shutdown (AIN_PT2)	
54.8	40055.8	Sensor 5 High Shutdown (AIN_PT2)	
54.9	40055.9	Sensor 5 Low Shutdown (AIN_PT2)	
54.10	40055.10	Sensor 6 High Shutdown (AIN_PT2)	
54.11	40055.11	Sensor 6 Low Shutdown (AIN_PT2)	
54.12	40055.12	Sensor 7 High Shutdown (AIN_PT2)	
54.13	40055.13	Sensor 7 Low Shutdown (AIN_PT2)	
54.14	40055.14	Sensor 8 High Shutdown (AIN_PT2)	
54.15	40055.15	Sensor 8 Low Shutdown (AIN_PT2)	
55.0	40056.0	Sensor 9 High Shutdown (AIN_PT2)	
55.1	40056.1	Sensor 9 Low Shutdown (AIN_PT2)	
55.2	40056.2	Sensor 10 High Shutdown (AIN_PT2)	
55.3	40056.3	Sensor 10 Low Shutdown (AIN_PT2)	
55.4	40056.4	Sensor 11 High Shutdown (AIN_PT2)	
55.5	40056.5	Sensor 11 Low Shutdown (AIN_PT2)	
55.6	40056.6	Sensor 12 High Shutdown (AIN_PT2)	
55.7	40056.7	Sensor 12 Low Shutdown (AIN_PT2)	

Modbus Address	PLC Address	Item	Description
55.8	40056.8	Sensor 13 High Shutdown (AIN_PT2)	
55.9	40056.9	Sensor 13 Low Shutdown (AIN_PT2)	
55.10	40056.10	Sensor 14 High Shutdown (AIN_PT2)	
55.11	40056.11	Sensor 14 Low Shutdown (AIN_PT2)	
55.12	40056.12	Sensor 15 High Shutdown (AIN_PT2)	
55.13	40056.13	Sensor 15 Low Shutdown (AIN_PT2)	
55.14	40056.14	Sensor 16 High Shutdown (AIN_PT2)	
55.15	40056.15	Sensor 16 Low Shutdown (AIN_PT2)	
56.0	40057.0	Sensor 1 High Shutdown (AIN16M02)	None
56.1	40057.1	Sensor 1 Low Shutdown (AIN16M02)	
56.2	40057.2	Sensor 2 High Shutdown (AIN16M02)	
56.3	40057.3	Sensor 2 Low Shutdown (AIN16M02)	
56.4	40057.4	Sensor 3 High Shutdown (AIN16M02)	
56.5	40057.5	Sensor 3 Low Shutdown (AIN16M02)	
56.6	40057.6	Sensor 4 High Shutdown (AIN16M02)	
56.7	40057.7	Sensor 4 Low Shutdown (AIN16M02)	
56.8	40057.8	Sensor 5 High Shutdown (AIN16M02)	
56.9	40057.9	Sensor 5 Low Shutdown (AIN16M02)	
56.10	40057.10	Sensor 6 High Shutdown (AIN16M02)	
56.11	40057.11	Sensor 6 Low Shutdown (AIN16M02)	
56.12	40057.12	Sensor 7 High Shutdown (AIN16M02)	
56.13	40057.13	Sensor 7 Low Shutdown (AIN16M02)	
56.14	40057.14	Sensor 8 High Shutdown (AIN16M02)	
56.15	40057.15	Sensor 8 Low Shutdown (AIN16M02)	
57.0	40058.0	Sensor 9 High Shutdown (AIN16M02)	
57.1	40058.1	Sensor 9 Low Shutdown (AIN16M02)	
57.2	40058.2	Sensor 10 High Shutdown (AIN16M02)	
57.3	40058.3	Sensor 10 Low Shutdown ((AIN16M02)	
57.4	40058.4	Sensor 11 High Shutdown (AIN16M02)	
57.5	40058.5	Sensor 11 Low Shutdown (AIN16M02)	
57.6	40058.6	Sensor 12 High Shutdown (AIN16M02)	
57.7	40058.7	Sensor 12 Low Shutdown (AIN16M02)	
57.8	40058.8	Sensor 13 High Shutdown (AIN16M02)	
57.9	40058.9	Sensor 13 Low Shutdown (AIN16M02)	
57.10	40058.10	Sensor 14 High Shutdown (AIN16M02)	
57.11	40058.11	Sensor 14 Low Shutdown (AIN16M02)	
57.12	40058.12	Sensor 15 High Shutdown (AIN16M02)	
57.13	40058.13	Sensor 15 Low Shutdown (AIN16M02)	
57.14	40058.14	Sensor 16 High Shutdown (AIN16M02)	
57.15	40058.15	Sensor 16 Low Shutdown (AIN16M02)	
58	40059	Reserved	
59	40060	Reserved	
60.0	40061.0	Sensor 1 High Shutdown (AIN8-2)	

Modbus Address	PLC Address	Item	Description
60.1	40061.1	Sensor 1 Low Shutdown (AIN8-2)	
60.2	40061.2	Sensor 2 High Shutdown (AIN8-2)	
60.3	40061.3	Sensor 2 Low Shutdown (AIN8-2)	
60.4	40061.4	Sensor 3 High Shutdown (AIN8-2)	
60.5	40061.5	Sensor 3 Low Shutdown (AIN8-2)	
60.6	40061.6	Sensor 4 High Shutdown (AIN8-2)	
60.7	40061.7	Sensor 4 Low Shutdown (AIN8-2)	
60.8	40061.8	Sensor 5 High Shutdown (AIN8-2)	
60.9	40061.9	Sensor 5 Low Shutdown (AIN8-2)	
60.10	40061.10	Sensor 6 High Shutdown (AIN8-2)	
60.11	40061.11	Sensor 6 Low Shutdown (AIN8-2)	
60.12	40061.12	Sensor 7 High Shutdown (AIN8-2)	
60.13	40061.13	Sensor 7 Low Shutdown (AIN8-2)	
60.14	40061.14	Sensor 8 High Shutdown (AIN8-2)	
60.15	40061.15	Sensor 8 Low Shutdown (AIN8-2)	
61.0	40062.0	Sensor 1 High Shutdown (AIN_M1)	
61.1	40062.1	Sensor 1 Low Shutdown (AIN_M1)	
61.2	40062.2	Sensor 2 High Shutdown (AIN_M1)	
61.3	40062.3	Sensor 2 Low Shutdown (AIN_M1)	
61.4	40062.4	Sensor 3 High Shutdown (AIN_M1)	
61.5	40062.5	Sensor 3 Low Shutdown (AIN_M1)	
61.6	40062.6	Sensor 4 High Shutdown (AIN_M1)	
61.7	40062.7	Sensor 4 Low Shutdown (AIN_M1)	
61.8	40062.8	Sensor 5 High Shutdown (AIN_M1)	
61.9	40062.9	Sensor 5 Low Shutdown (AIN_M1)	
61.10	40062.10	Sensor 6 High Shutdown (AIN_M1)	
61.11	40062.11	Sensor 6 Low Shutdown (AIN_M1)	
61.12	40062.12	Sensor 7 High Shutdown (AIN_M1)	
61.13	40062.13	Sensor 7 Low Shutdown (AIN_M1)	
61.14	40062.14	Sensor 8 High Shutdown (AIN_M1)	
61.15	40062.15	Sensor 8 Low Shutdown (AIN_M1)	
62.0	40063.0	Sensor 9 High Shutdown (AIN_M1)	
62.1	40063.1	Sensor 9 Low Shutdown (AIN_M1)	
62.2	40063.2	Sensor 10 High Shutdown (AIN_M1)	
62.3	40063.3	Sensor 10 Low Shutdown (AIN_M1)	
62.4	40063.4	Sensor 11 High Shutdown (AIN_M1)	
62.5	40063.5	Sensor 11 Low Shutdown (AIN_M1)	
62.6	40063.6	Sensor 12 High Shutdown (AIN_M1)	
62.7	40063.7	Sensor 12 Low Shutdown (AIN_M1)	
62.8	40063.8	Sensor 13 High Shutdown (AIN_M1)	
62.9	40063.9	Sensor 13 Low Shutdown (AIN_M1)	
62.10	40063.10	Sensor 14 High Shutdown (AIN_M1)	
62.11	40063.11	Sensor 14 Low Shutdown (AIN_M1)	

Modbus Address	PLC Address	Item	Description
62.12	40063.12	Sensor 15 High Shutdown (AIN_M1)	
62.13	40063.13	Sensor 15 Low Shutdown (AIN_M1)	
62.14	40063.14	Sensor 16 High Shutdown (AIN_M1)	
62.15	40063.15	Sensor 16 Low Shutdown (AIN_M1)	
63.0	40064.0	Sensor 1 High Shutdown (AIN_M2)	
63.1	40064.1	Sensor 1 Low Shutdown (AIN_M2)	
63.2	40064.2	Sensor 2 High Shutdown (AIN_M2)	
63.3	40064.3	Sensor 2 Low Shutdown (AIN_M2)	
63.4	40064.4	Sensor 3 High Shutdown (AIN_M2)	
63.5	40064.5	Sensor 3 Low Shutdown (AIN_M2)	
63.6	40064.6	Sensor 4 High Shutdown (AIN_M2)	
63.7	40064.7	Sensor 4 Low Shutdown (AIN_M2)	
63.8	40064.8	Sensor 5 High Shutdown (AIN_M2)	
63.9	40064.9	Sensor 5 Low Shutdown (AIN_M2)	
63.10	40064.10	Sensor 6 High Shutdown (AIN_M2)	
63.11	40064.11	Sensor 6 Low Shutdown (AIN_M2)	
63.12	40064.12	Sensor 7 High Shutdown (AIN_M2)	
63.13	40064.13	Sensor 7 Low Shutdown (AIN_M2)	
63.14	40064.14	Sensor 8 High Shutdown (AIN_M2)	
63.15	40064.15	Sensor 8 Low Shutdown (AIN_M2)	
64.0	40065.0	Sensor 9 High Shutdown (AIN_M2)	
64.1	40065.1	Sensor 9 Low Shutdown (AIN_M2)	
64.2	40065.2	Sensor 10 High Shutdown (AIN_M2)	
64.3	40065.3	Sensor 10 Low Shutdown (AIN_M2)	
64.4	40065.4	Sensor 11 High Shutdown (AIN_M2)	
64.5	40065.5	Sensor 11 Low Shutdown (AIN_M2)	
64.6	40065.6	Sensor 12 High Shutdown (AIN_M2)	
64.7	40065.7	Sensor 12 Low Shutdown (AIN_M2)	
64.8	40065.8	Sensor 13 High Shutdown (AIN_M2)	
64.9	40065.9	Sensor 13 Low Shutdown (AIN_M2)	
64.10	40065.10	Sensor 14 High Shutdown (AIN_M2)	
64.11	40065.11	Sensor 14 Low Shutdown (AIN_M2)	
64.12	40065.12	Sensor 15 High Shutdown (AIN_M2)	
64.13	40065.13	Sensor 15 Low Shutdown (AIN_M2)	
64.14	40065.14	Sensor 16 High Shutdown (AIN_M2)	
64.15	40065.15	Sensor 16 Low Shutdown (AIN_M2)	
65.0	40066.0	Over Speed 1 Shutdown (AIN16-M01)	
65.1	40066.1	Over Speed 2 Shutdown (AIN16-M01)	
65.2	40066.2	Over Speed 3 Shutdown (AIN16-M01)	
65.3	40066.3	Under Speed 1 Shutdown (AIN16-M01)	
65.4	40066.4	Under Speed 2 Shutdown (AIN16-M01)	
65.5	40066.5	Under Speed 3 Shutdown (AIN16-M01)	
65.6	40066.6	Over Speed 1 Shutdown (AIN16-M02)	

Modbus Address	PLC Address	Item	Description
65.7	40066.7	Over Speed 2 Shutdown (AIN16-M02)	
65.8	40066.8	Over Speed 3 Shutdown (AIN16-M02)	
65.9	40066.9	Under Speed 1 Shutdown (AIN16-M02)	
65.10	40066.10	Under Speed 2 Shutdown (AIN16-M02)	
65.11	40066.11	Under Speed 3 Shutdown (AIN16-M02)	
65.12	40066.12	Reserved	
65.13	40066.13	Reserved	
65.14	40066.14	Reserved	
65.15	40066.15	Reserved	
66.0	40067.0	PLC Shutdown 1	
66.1	40067.1	PLC Shutdown 2	
66.2	40067.2	PLC Shutdown 3	
66.3	40067.3	PLC Shutdown 4	
66.4	40067.4	PLC Shutdown 5	
66.5	40067.5	PLC Shutdown 6	
66.6	40067.6	PLC Shutdown 7	
66.7	40067.7	PLC Shutdown 8	
66.8	40067.8	PLC Shutdown 9	
66.9	40067.9	PLC Shutdown 10	
66.10	40067.10	PLC Shutdown 11	
66.11	40067.11	PLC Shutdown 12	
66.12	40067.12	PLC Shutdown 13	
66.13	40067.13	PLC Shutdown 14	
66.14	40067.14	PLC Shutdown 15	
66.15	40067.15	PLC Shutdown 16	
67.0	40068.0	PLC Shutdown 17	
67.1	40068.1	PLC Shutdown 18	
67.2	40068.2	PLC Shutdown 19	
67.3	40068.3	PLC Shutdown 20	
67.4	40068.4	Reserved	
67.5	40068.5	Reserved	
67.6	40068.6	Reserved	
67.7	40068.7	Reserved	
67.8	40068.8	Reserved	
67.9	40068.9	Reserved	
67.10	40068.10	Reserved	
67.11	40068.11	Reserved	
67.12	40068.12	Reserved	
67.13	40068.13	Reserved	
67.14	40068.14	Reserved	
67.15	40068.15	Reserved	
68.0	40069.0	Sensor 1 Open Circuit Warning (AIN16_C1)	
68.1	40069.1	Sensor 1 High Warning (AIN16_C1)	

Modbus Address	PLC Address	Item	Description
68.2	40069.2	Sensor 1 Low Warning (AIN16_C1)	
68.3	40069.3	Reserved	
68.4	40069.4	Sensor 2 Open Circuit Warning (AIN16_C1)	
68.5	40069.5	Sensor 2 High Warning (AIN16_C1)	
68.6	40069.6	Sensor 2 Low Warning (AIN16_C1)	
68.7	40069.7	Reserved	
68.8	40069.8	Sensor 3 Open Circuit Warning (AIN16_C1)	
68.9	40069.9	Sensor 3 High Warning (AIN16_C1)	
68.10	40069.10	Sensor 3 Low Warning (AIN16_C1)	
68.11	40069.11	Reserved	
68.12	40069.12	Sensor 4 Open Circuit Warning (AIN16_C1)	
68.13	40069.13	Sensor 4 High Warning (AIN16_C1)	
68.14	40069.14	Sensor 4 Low Warning (AIN16_C1)	
68.15	40069.15	Reserved	
69.0	40070.0	Sensor 5 Open Circuit Warning (AIN16_C1)	
69.1	40070.1	Sensor 5 High Warning (AIN16_C1)	
69.2	40070.2	Sensor 5 Low Warning (AIN16_C1)	
69.3	40070.3	Reserved	
69.4	40070.4	Sensor 6 Open Circuit Warning (AIN16_C1)	
69.5	40070.5	Sensor 6 High Warning (AIN16_C1)	
69.6	40070.6	Sensor 6 Low Warning (AIN16_C1)	
69.7	40070.7	Reserved	
69.8	40070.8	Sensor 7 Open Circuit Warning (AIN16_C1)	
69.9	40070.9	Sensor 7 High Warning (AIN16_C1)	
69.10	40070.10	Sensor 7 Low Warning (AIN16_C1)	
69.11	40070.11	Reserved	
69.12	40070.12	Sensor 8 Open Circuit Warning (AIN16_C1)	
69.13	40070.13	Sensor 8 High Warning (AIN16_C1)	
69.14	40070.14	Sensor 8 Low Warning (AIN16_C1)	
69.15	40070.15	Reserved	
70.0	40071.0	Sensor 9 Open Circuit Warning (AIN16_C1)	
70.1	40071.1	Sensor 9 High Warning (AIN16_C1)	
70.2	40071.2	Sensor 9 Low Warning (AIN16_C1)	
70.3	40071.3	Reserved	
70.4	40071.4	Sensor 10 Open Circuit Warning (AIN16_C1)	
70.5	40071.5	Sensor 10 High Warning (AIN16_C1)	
70.6	40071.6	Sensor 10 Low Warning (AIN16_C1)	
70.7	40071.7	Reserved	
70.8	40071.8	Sensor 11 Open Circuit Warning (AIN16_C1)	
70.9	40071.9	Sensor 11 High Warning (AIN16_C1)	
70.10	40071.10	Sensor 11 Low Warning (AIN16_C1)	
70.11	40071.11	Reserved	
70.12	40071.12	Sensor 12 Open Circuit Warning (AIN16_C1)	

Modbus Address	PLC Address	Item	Description
70.13	40071.13	Sensor 12 High Warning (AIN16_C1)	
70.14	40071.14	Sensor 12 Low Warning (AIN16_C1)	
70.15	40071.15	Reserved	
71.0	40072.0	Sensor 13 Open Circuit Warning (AIN16_C1)	
71.1	40072.1	Sensor 13 High Warning (AIN16_C1)	
71.2	40072.2	Sensor 13 Low Warning (AIN16_C1)	
71.3	40072.3	Reserved	
71.4	40072.4	Sensor 14 Open Circuit Warning (AIN16_C1)	
71.5	40072.5	Sensor 14 High Warning (AIN16_C1)	
71.6	40072.6	Sensor 14 Low Warning (AIN16_C1)	
71.7	40072.7	Reserved	
71.8	40072.8	Sensor 15 Open Circuit Warning (AIN16_C1)	
71.9	40072.9	Sensor 15 High Warning (AIN16_C1)	
71.10	40072.10	Sensor 15 Low Warning (AIN16_C1)	
71.11	40072.11	Reserved	
71.12	40072.12	Sensor 16 Open Circuit Warning (AIN16_C1)	
71.13	40072.13	Sensor 16 High Warning (AIN16_C1)	
71.14	40072.14	Sensor 16 Low Warning (AIN16_C1)	
71.15	40072.15	Reserved	
72.0	40073.0	Sensor 1 Open Circuit Warning (AIN16_C2)	
72.1	40073.1	Sensor 1 High Warning (AIN16_C2)	
72.2	40073.2	Sensor 1 Low Warning (AIN16_C2)	
72.3	40073.3	Reserved	
72.4	40073.4	Sensor 2 Open Circuit Warning (AIN16_C2)	
72.5	40073.5	Sensor 2 High Warning (AIN16_C2)	
72.6	40073.6	Sensor 2 Low Warning (AIN16_C2)	
72.7	40073.7	Reserved	
72.8	40073.8	Sensor 3 Open Circuit Warning (AIN16_C2)	
72.9	40073.9	Sensor 3 High Warning (AIN16_C2)	
72.10	40073.10	Sensor 3 Low Warning (AIN16_C2)	
72.11	40073.11	Reserved	
72.12	40073.12	Sensor 4 Open Circuit Warning (AIN16_C2)	
72.13	40073.13	Sensor 4 High Warning (AIN16_C2)	
72.14	40073.14	Sensor 4 Low Warning (AIN16_C2)	
72.15	40073.15	Reserved	
73.0	40074.0	Sensor 5 Open Circuit Warning (AIN16_C2)	
73.1	40074.1	Sensor 5 High Warning (AIN16_C2)	
73.2	40074.2	Sensor 5 Low Warning (AIN16_C2)	
73.3	40074.3	Reserved	
73.4	40074.4	Sensor 6 Open Circuit Warning (AIN16_C2)	
73.5	40074.5	Sensor 6 High Warning (AIN16_C2)	
73.6	40074.6	Sensor 6 Low Warning (AIN16_C2)	
73.7	40074.7	Reserved	

Modbus Address	PLC Address	Item	Description
73.8	40074.8	Sensor 7 Open Circuit Warning (AIN16_C2)	
73.9	40074.9	Sensor 7 High Warning (AIN16_C2)	
73.10	40074.10	Sensor 7 Low Warning (AIN16_C2)	
73.11	40074.11	Reserved	
73.12	40074.12	Sensor 8 Open Circuit Warning (AIN16_C2)	
73.13	40074.13	Sensor 8 High Warning (AIN16_C2)	
73.14	40074.14	Sensor 8 Low Warning (AIN16_C2)	
73.15	40074.15	Reserved	
74.0	40075.0	Sensor 9 Open Circuit Warning (AIN16_C2)	
74.1	40075.1	Sensor 9 High Warning (AIN16_C2)	
74.2	40075.2	Sensor 9 Low Warning (AIN16_C2)	
74.3	40075.3	Reserved	
74.4	40075.4	Sensor 10 Open Circuit Warning (AIN16_C2)	
74.5	40075.5	Sensor 10 High Warning (AIN16_C2)	
74.6	40075.6	Sensor 10 Low Warning (AIN16_C2)	
74.7	40075.7	Reserved	
74.8	40075.8	Sensor 11 Open Circuit Warning (AIN16_C2)	
74.9	40075.9	Sensor 11 High Warning (AIN16_C2)	
74.10	40075.10	Sensor 11 Low Warning (AIN16_C2)	
74.11	40075.11	Reserved	
74.12	40075.12	Sensor 12 Open Circuit Warning (AIN16_C2)	
74.13	40075.13	Sensor 12 High Warning (AIN16_C2)	
74.14	40075.14	Sensor 12 Low Warning (AIN16_C2)	
74.15	40075.15	Reserved	
75.0	40076.0	Sensor 13 Open Circuit Warning (AIN16_C2)	
75.1	40076.1	Sensor 13 High Warning (AIN16_C2)	
75.2	40076.2	Sensor 13 Low Warning (AIN16_C2)	
75.3	40076.3	Reserved	
75.4	40076.4	Sensor 14 Open Circuit Warning (AIN16_C2)	
75.5	40076.5	Sensor 14 High Warning (AIN16_C2)	
75.6	40076.6	Sensor 14 Low Warning (AIN16_C2)	
75.7	40076.7	Reserved	
75.8	40076.8	Sensor 15 Open Circuit Warning (AIN16_C2)	
75.9	40076.9	Sensor 15 High Warning (AIN16_C2)	
75.10	40076.10	Sensor 15 Low Warning (AIN16_C2)	
75.11	40076.11	Reserved	
75.12	40076.12	Sensor 16 Open Circuit Warning (AIN16_C2)	
75.13	40076.13	Sensor 16 High Warning (AIN16_C2)	
75.14	40076.14	Sensor 16 Low Warning (AIN16_C2)	
75.15	40076.15	Reserved	
76.0	40077.0	Sensor 1 Open Circuit Warning (AIN16_PT1)	
76.1	40077.1	Sensor 1 High Warning (AIN16_PT1)	
76.2	40077.2	Sensor 1 Low Warning (AIN16_PT1)	

Modbus Address	PLC Address	Item	Description
76.3	40077.3	Reserved	
76.4	40077.4	Sensor 2 Open Circuit Warning (AIN16_PT1)	
76.5	40077.5	Sensor 2 High Warning (AIN16_PT1)	
76.6	40077.6	Sensor 2 Low Warning (AIN16_PT1)	
76.7	40077.7	Reserved	
76.8	40077.8	Sensor 3 Open Circuit Warning (AIN16_PT1)	
76.9	40077.9	Sensor 3 High Warning (AIN16_PT1)	
76.10	40077.10	Sensor 3 Low Warning (AIN16_PT1)	
76.11	40077.11	Reserved	
76.12	40077.12	Sensor 4 Open Circuit Warning (AIN16_PT1)	
76.13	40077.13	Sensor 4 High Warning (AIN16_PT1)	
76.14	40077.14	Sensor 4 Low Warning (AIN16_PT1)	
76.15	40077.15	Reserved	
77.0	40078.0	Sensor 5 Open Circuit Warning (AIN16_PT1)	
77.1	40078.1	Sensor 5 High Warning (AIN16_PT1)	
77.2	40078.2	Sensor 5 Low Warning (AIN16_PT1)	
77.3	40078.3	Reserved	
77.4	40078.4	Sensor 6 Open Circuit Warning (AIN16_PT1)	
77.5	40078.5	Sensor 6 High Warning (AIN16_PT1)	
77.6	40078.6	Sensor 6 Low Warning (AIN16_PT1)	
77.7	40078.7	Reserved	
77.8	40078.8	Sensor 7 Open Circuit Warning (AIN16_PT1)	
77.9	40078.9	Sensor 7 High Warning (AIN16_PT1)	
77.10	40078.10	Sensor 7 Low Warning (AIN16_PT1)	
77.11	40078.11	Reserved	
77.12	40078.12	Sensor 8 Open Circuit Warning (AIN16_PT1)	
77.13	40078.13	Sensor 8 High Warning (AIN16_PT1)	
77.14	40078.14	Sensor 8 Low Warning (AIN16_PT1)	
77.15	40078.15	Reserved	
78.0	40079.0	Sensor 9 Open Circuit Warning (AIN16_PT1)	
78.1	40079.1	Sensor 9 High Warning (AIN16_PT1)	
78.2	40079.2	Sensor 9 Low Warning (AIN16_PT1)	
78.3	40079.3	Reserved	
78.4	40079.4	Sensor 10 Open Circuit Warning (AIN16_PT1)	
78.5	40079.5	Sensor 10 High Warning (AIN16_PT1)	
78.6	40079.6	Sensor 10 Low Warning (AIN16_PT1)	
78.7	40079.7	Reserved	
78.8	40079.8	Sensor 11 Open Circuit Warning (AIN16_PT1)	
78.9	40079.9	Sensor 11 High Warning (AIN16_PT1)	
78.10	40079.10	Sensor 11 Low Warning (AIN16_PT1)	
78.11	40079.11	Reserved	
78.12	40079.12	Sensor 12 Open Circuit Warning (AIN16_PT1)	
78.13	40079.13	Sensor 12 High Warning (AIN16_PT1)	

Modbus Address	PLC Address	Item	Description
78.14	40079.14	Sensor 12 Low Warning (AIN16_PT1)	
78.15	40079.15	Reserved	
79.0	40080.0	Sensor 13 Open Circuit Warning (AIN16_PT1)	
79.1	40080.1	Sensor 13 High Warning (AIN16_PT1)	
79.2	40080.2	Sensor 13 Low Warning (AIN16_PT1)	
79.3	40080.3	Reserved	
79.4	40080.4	Sensor 14 Open Circuit Warning (AIN16_PT1)	
79.5	40080.5	Sensor 14 High Warning (AIN16_PT1)	
79.6	40080.6	Sensor 14 Low Warning (AIN16_PT1)	
79.7	40080.7	Reserved	
79.8	40080.8	Sensor 15 Open Circuit Warning (AIN16_PT1)	
79.9	40080.9	Sensor 15 High Warning (AIN16_PT1)	
79.10	40080.10	Sensor 15 Low Warning (AIN16_PT1)	
79.11	40080.11	Reserved	
79.12	40080.12	Sensor 16 Open Circuit Warning (AIN16_PT1)	
79.13	40080.13	Sensor 16 High Warning (AIN16_PT1)	
79.14	40080.14	Sensor 16 Low Warning (AIN16_PT1)	
79.15	40080.15	Reserved	
80.0	40081.0	Sensor 1 Open Circuit Warning (AIN16_PT2)	
80.1	40081.1	Sensor 1 High Warning (AIN16_PT2)	
80.2	40081.2	Sensor 1 Low Warning (AIN16_PT2)	
80.3	40081.3	Reserved	
80.4	40081.4	Sensor 2 Open Circuit Warning (AIN16_PT2)	
80.5	40081.5	Sensor 2 High Warning (AIN16_PT2)	
80.6	40081.6	Sensor 2 Low Warning (AIN16_PT2)	
80.7	40081.7	Reserved	
80.8	40081.8	Sensor 3 Open Circuit Warning (AIN16_PT2)	
80.9	40081.9	Sensor 3 High Warning (AIN16_PT2)	
80.10	40081.10	Sensor 3 Low Warning (AIN16_PT2)	
80.11	40081.11	Reserved	
80.12	40081.12	Sensor 4 Open Circuit Warning (AIN16_PT2)	
80.13	40081.13	Sensor 4 High Warning (AIN16_PT2)	
80.14	40081.14	Sensor 4 Low Warning (AIN16_PT2)	
80.15	40081.15	Reserved	
81.0	40082.0	Sensor 5 Open Circuit Warning (AIN16_PT2)	
81.1	40082.1	Sensor 5 High Warning (AIN16_PT2)	
81.2	40082.2	Sensor 5 Low Warning (AIN16_PT2)	
81.3	40082.3	Reserved	
81.4	40082.4	Sensor 6 Open Circuit Warning (AIN16_PT2)	
81.5	40082.5	Sensor 6 High Warning (AIN16_PT2)	
81.6	40082.6	Sensor 6 Low Warning (AIN16_PT2)	
81.7	40082.7	Reserved	
81.8	40082.8	Sensor 7 Open Circuit Warning (AIN16_PT2)	

Modbus Address	PLC Address	Item	Description
81.9	40082.9	Sensor 7 High Warning (AIN16_PT2)	
81.10	40082.10	Sensor 7 Low Warning (AIN16_PT2)	
81.11	40082.11	Reserved	
81.12	40082.12	Sensor 8 Open Circuit Warning (AIN16_PT2)	
81.13	40082.13	Sensor 8 High Warning (AIN16_PT2)	
81.14	40082.14	Sensor 8 Low Warning (AIN16_PT2)	
81.15	40082.15	Reserved	
82.0	40083.0	Sensor 9 Open Circuit Warning (AIN16_PT2)	
82.1	40083.1	Sensor 9 High Warning (AIN16_PT2)	
82.2	40083.2	Sensor 9 Low Warning (AIN16_PT2)	
82.3	40083.3	Reserved	
82.4	40083.4	Sensor 10 Open Circuit Warning (AIN16_PT2)	
82.5	40083.5	Sensor 10 High Warning (AIN16_PT2)	
82.6	40083.6	Sensor 10 Low Warning (AIN16_PT2)	
82.7	40083.7	Reserved	
82.8	40083.8	Sensor 11 Open Circuit Warning (AIN16_PT2)	
82.9	40083.9	Sensor 11 High Warning (AIN16_PT2)	
82.10	40083.10	Sensor 11 Low Warning (AIN16_PT2)	
82.11	40083.11	Reserved	
82.12	40083.12	Sensor 12 Open Circuit Warning (AIN16_PT2)	
82.13	40083.13	Sensor 12 High Warning (AIN16_PT2)	
82.14	40083.14	Sensor 12 Low Warning (AIN16_PT2)	
82.15	40083.15	Reserved	
83.0	40084.0	Sensor 13 Open Circuit Warning (AIN16_PT2)	
83.1	40084.1	Sensor 13 High Warning (AIN16_PT2)	
83.2	40084.2	Sensor 13 Low Warning (AIN16_PT2)	
83.3	40084.3	Reserved	
83.4	40084.4	Sensor 14 Open Circuit Warning (AIN16_PT2)	
83.5	40084.5	Sensor 14 High Warning (AIN16_PT2)	
83.6	40084.6	Sensor 14 Low Warning (AIN16_PT2)	
83.7	40084.7	Reserved	
83.8	40084.8	Sensor 15 Open Circuit Warning (AIN16_PT2)	
83.9	40084.9	Sensor 15 High Warning (AIN16_PT2)	
83.10	40084.10	Sensor 15 Low Warning (AIN16_PT2)	
83.11	40084.11	Reserved	
83.12	40084.12	Sensor 16 Open Circuit Warning (AIN16_PT2)	
83.13	40084.13	Sensor 16 High Warning (AIN16_PT2)	
83.14	40084.14	Sensor 16 Low Warning (AIN16_PT2)	
83.15	40084.15	Reserved	
84.0	40085.0	Sensor 1 Open Circuit Warning (AIN8-2)	
84.1	40085.1	Sensor 1 High Warning (AIN8-2)	
84.2	40085.2	Sensor 1 Low Warning (AIN8-2)	
84.3	40085.3	Reserved	

Modbus Address	PLC Address	Item	Description
84.4	40085.4	Sensor 2 Open Circuit Warning (AIN8-2)	
84.5	40085.5	Sensor 2 High Warning (AIN8-2)	
84.6	40085.6	Sensor 2 Low Warning (AIN8-2)	
84.7	40085.7	Reserved	
84.8	40085.8	Sensor 3 Open Circuit Warning (AIN8-2)	
84.9	40085.9	Sensor 3 High Warning (AIN8-2)	
84.10	40085.10	Sensor 3 Low Warning (AIN8-2)	
84.11	40085.11	Reserved	
84.12	40085.12	Sensor 4 Open Circuit Warning (AIN8-2)	
84.13	40085.13	Sensor 4 High Warning (AIN8-2)	
84.14	40085.14	Sensor 4 Low Warning (AIN8-2)	
84.15	40085.15	Reserved	
85.0	40086.0	Sensor 5 Open Circuit Warning (AIN8-2)	
85.1	40086.1	Sensor 5 High Warning (AIN8-2)	
85.2	40086.2	Sensor 5 Low Warning (AIN8-2)	
85.3	40086.3	Reserved	
85.4	40086.4	Sensor 6 Open Circuit Warning (AIN8-2)	
85.5	40086.5	Sensor 6 High Warning (AIN8-2)	
85.6	40086.6	Sensor 6 Low Warning (AIN8-2)	
85.7	40086.7	Reserved	
85.8	40086.8	Sensor 7 Open Circuit Warning (AIN8-2)	
85.9	40086.9	Sensor 7 High Warning (AIN8-2)	
85.10	40086.10	Sensor 7 Low Warning (AIN8-2)	
85.11	40086.11	Reserved	
85.12	40086.12	Sensor 8 Open Circuit Warning (AIN8-2)	
85.13	40086.13	Sensor 8 High Warning (AIN8-2)	
85.14	40086.14	Sensor 8 Low Warning (AIN8-2)	
85.15	40086.15	Reserved	
86.0	40087.0	Sensor 9 Open Circuit Warning (AIN16M02)	None
86.1	40087.1	Sensor 9 High Warning (AIN16M02)	
86.2	40087.2	Sensor 9 Low Warning (AIN16M02)	
86.3	40087.3	Reserved	
86.4	40087.4	Sensor 10 Open Circuit Warning (AIN16M02)	
86.5	40087.5	Sensor 10 High Warning (AIN16M02)	
86.6	40087.6	Sensor 10 Low Warning (AIN16M02)	
86.7	40087.7	Reserved	
86.8	40087.8	Sensor 11 Open Circuit Warning (AIN16M02)	
86.9	40087.9	Sensor 11 High Warning (AIN16M02)	
86.10	40087.10	Sensor 11 Low Warning (AIN16M02)	
86.11	40087.11	Reserved	
86.12	40087.12	Sensor 12 Open Circuit Warning (AIN16M02)	
86.13	40087.13	Sensor 12 High Warning (AIN16M02)	
86.14	40087.14	Sensor 12 Low Warning (AIN16M02)	

Modbus Address	PLC Address	Item	Description
86.15	40087.15	Reserved	
87.0	40088.0	Sensor 13 Open Circuit Warning (AIN16M02)	
87.1	40088.1	Sensor 13 High Warning (AIN16M02)	
87.2	40088.2	Sensor 13 Low Warning (AIN16M02)	
87.3	40088.3	Reserved	
87.4	40088.4	Sensor 14 Open Circuit Warning (AIN16M02)	
87.5	40088.5	Sensor 14 High Warning (AIN16M02)	
87.6	40088.6	Sensor 14 Low Warning (AIN16M02)	
87.7	40088.7	Reserved	
87.8	40088.8	Sensor 15 Open Circuit Warning (AIN16M02)	
87.9	40088.9	Sensor 15 High Warning (AIN16M02)	
87.10	40088.10	Sensor 15 Low Warning (AIN16M02)	
87.11	40088.11	Reserved	
87.12	40088.12	Sensor 16 Open Circuit Warning (AIN16M02)	
87.13	40088.13	Sensor 16 High Warning (AIN16M02)	
87.14	40088.14	Sensor 16 Low Warning (AIN16M02)	
87.15	40088.15	Reserved	
88.0	40089.0	Sensor 1 Open Circuit Warning (AIN16_K2)	
88.1	40089.1	Sensor 1 High Warning (AIN16_K2)	
88.2	40089.2	Sensor 1 Low Warning (AIN16_K2)	
88.3	40089.3	Reserved	
88.4	40089.4	Sensor 2 Open Circuit Warning (AIN16_K2)	
88.5	40089.5	Sensor 2 High Warning (AIN16_K2)	
88.6	40089.6	Sensor 2 Low Warning (AIN16_K2)	
88.7	40089.7	Reserved	
88.8	40089.8	Sensor 3 Open Circuit Warning (AIN16_K2)	
88.9	40089.9	Sensor 3 High Warning (AIN16_K2)	
88.10	40089.10	Sensor 3 Low Warning (AIN16_K2)	
88.11	40089.11	Reserved	
88.12	40089.12	Sensor 4 Open Circuit Warning (AIN16_K2)	
88.13	40089.13	Sensor 4 High Warning (AIN16_K2)	
88.14	40089.14	Sensor 4 Low Warning (AIN16_K2)	
88.15	40089.15	Reserved	
89.0	40090.0	Sensor 5 Open Circuit Warning (AIN16_K2)	
89.1	40090.1	Sensor 5 High Warning (AIN16_K2)	
89.2	40090.2	Sensor 5 Low Warning (AIN16_K2)	
89.3	40090.3	Reserved	
89.4	40090.4	Sensor 6 Open Circuit Warning (AIN16_K2)	
89.5	40090.5	Sensor 6 High Warning (AIN16_K2)	
89.6	40090.6	Sensor 6 Low Warning (AIN16_K2)	
89.7	40090.7	Reserved	
89.8	40090.8	Sensor 7 Open Circuit Warning (AIN16_K2)	
89.9	40090.9	Sensor 7 High Warning (AIN16_K2)	

Modbus Address	PLC Address	Item	Description
89.10	40090.10	Sensor 7 Low Warning (AIN16_K2)	
89.11	40090.11	Reserved	
89.12	40090.12	Sensor 8 Open Circuit Warning (AIN16_K2)	
89.13	40090.13	Sensor 8 High Warning (AIN16_K2)	
89.14	40090.14	Sensor 8 Low Warning (AIN16_K2)	
89.15	40090.15	Reserved	
90.0	40091.0	Sensor 9 Open Circuit Warning (AIN16_K2)	
90.1	40091.1	Sensor 9 High Warning (AIN16_K2)	
90.2	40091.2	Sensor 9 Low Warning (AIN16_K2)	
90.3	40091.3	Reserved	
90.4	40091.4	Sensor 10 Open Circuit Warning (AIN16_K2)	
90.5	40091.5	Sensor 10 High Warning (AIN16_K2)	
90.6	40091.6	Sensor 10 Low Warning (AIN16_K2)	
90.7	40091.7	Reserved	
90.8	40091.8	Sensor 11 Open Circuit Warning (AIN16_K2)	
90.9	40091.9	Sensor 11 High Warning (AIN16_K2)	
90.10	40091.10	Sensor 11 Low Warning (AIN16_K2)	
90.11	40091.11	Reserved	
90.12	40091.12	Sensor 12 Open Circuit Warning (AIN16_K2)	
90.13	40091.13	Sensor 12 High Warning (AIN16_K2)	
90.14	40091.14	Sensor 12 Low Warning (AIN16_K2)	
90.15	40091.15	Reserved	
91.0	40092.0	Sensor 13 Open Circuit Warning (AIN16_K2)	
91.1	40092.1	Sensor 13 High Warning (AIN16_K2)	
91.2	40092.2	Sensor 13 Low Warning (AIN16_K2)	
91.3	40092.3	Reserved	
91.4	40092.4	Sensor 14 Open Circuit Warning (AIN16_K2)	
91.5	40092.5	Sensor 14 High Warning (AIN16_K2)	
91.6	40092.6	Sensor 14 Low Warning (AIN16_K2)	
91.7	40092.7	Reserved	
91.8	40092.8	Sensor 15 Open Circuit Warning (AIN16_K2)	
91.9	40092.9	Sensor 15 High Warning (AIN16_K2)	
91.10	40092.10	Sensor 15 Low Warning (AIN16_K2)	
91.11	40092.11	Reserved	
91.12	40092.12	Sensor 16 Open Circuit Warning (AIN16_K2)	
91.13	40092.13	Sensor 16 High Warning (AIN16_K2)	
91.14	40092.14	Sensor 16 Low Warning (AIN16_ K2)	
91.15	40092.15	Reserved	
92	40093	Reserved	
93.0	40094.0	Sensor 1 Open Circuit Warning (AIN16_M1)	
93.1	40094.1	Sensor 1 High Warning (AIN16_M1)	
93.2	40094.2	Sensor 1 Low Warning (AIN16_M1)	
93.3	40094.3	Reserved	

Modbus Address	PLC Address	Item	Description
93.4	40094.4	Sensor 2 Open Circuit Warning (AIN16_M1)	
93.5	40094.5	Sensor 2 High Warning (AIN16_M1)	
93.6	40094.6	Sensor 2 Low Warning (AIN16_M1)	
93.7	40094.7	Reserved	
93.8	40094.8	Sensor 3 Open Circuit Warning (AIN16_M1)	
93.9	40094.9	Sensor 3 High Warning (AIN16_M1)	
93.10	40094.10	Sensor 3 Low Warning (AIN16_M1)	
93.11	40094.11	Reserved	
93.12	40094.12	Sensor 4 Open Circuit Warning (AIN16_M1)	
93.13	40094.13	Sensor 4 High Warning (AIN16_M1)	
93.14	40094.14	Sensor 4 Low Warning (AIN16_M1)	
93.15	40094.15	Reserved	
94.0	40095.0	Sensor 5 Open Circuit Warning (AIN16_M1)	
94.1	40095.1	Sensor 5 High Warning (AIN16_M1)	
94.2	40095.2	Sensor 5 Low Warning (AIN16_M1)	
94.3	40095.3	Reserved	
94.4	40095.4	Sensor 6 Open Circuit Warning (AIN16_M1)	
94.5	40095.5	Sensor 6 High Warning (AIN16_M1)	
94.6	40095.6	Sensor 6 Low Warning (AIN16_M1)	
94.7	40095.7	Reserved	
94.8	40095.8	Sensor 7 Open Circuit Warning (AIN16_M1)	
94.9	40095.9	Sensor 7 High Warning (AIN16_M1)	
94.10	40095.10	Sensor 7 Low Warning (AIN16_M1)	
94.11	40095.11	Reserved	
94.12	40095.12	Sensor 8 Open Circuit Warning (AIN16_M1)	
94.13	40095.13	Sensor 8 High Warning (AIN16_M1)	
94.14	40095.14	Sensor 8 Low Warning (AIN16_M1)	
94.15	40095.15	Reserved	
95.0	40096.0	Sensor 9 Open Circuit Warning (AIN16_M1)	
95.1	40096.1	Sensor 9 High Warning (AIN16_M1)	
95.2	40096.2	Sensor 9 Low Warning (AIN16_M1)	
95.3	40096.3	Reserved	
95.4	40096.4	Sensor 10 Open Circuit Warning (AIN16_M1)	None
95.5	40096.5	Sensor 10 High Warning (AIN16_M1)	
95.6	40096.6	Sensor 10 Low Warning (AIN16_M1)	
95.7	40096.7	Reserved	
95.8	40096.8	Sensor 11 Open Circuit Warning (AIN16_M1)	
95.9	40096.9	Sensor 11 High Warning (AIN16_M1)	
95.10	40096.10	Sensor 11 Low Warning (AIN16_M1)	
95.11	40096.11	Reserved	
95.12	40096.12	Sensor 12 Open Circuit Warning (AIN16_M1)	
95.13	40096.13	Sensor 12 High Warning (AIN16_M1)	
95.14	40096.14	Sensor 12 Low Warning (AIN16_M1)	

Modbus Address	PLC Address	Item	Description
95.15	40096.15	Reserved	
96.0	40097.0	PLC Warning 1	
96.1	40097.1	PLC Warning 2	
96.2	40097.2	PLC Warning 3	
96.3	40097.3	PLC Warning 4	
96.4	40097.4	PLC Warning 5	
96.5	40097.5	PLC Warning 6	
96.6	40097.6	PLC Warning 7	
96.7	40097.7	PLC Warning 8	
96.8	40097.8	PLC Warning 9	
96.9	40097.9	PLC Warning 10	
96.10	40097.10	PLC Warning 11	
96.11	40097.11	PLC Warning 12	
96.12	40097.12	PLC Warning 13	
96.13	40097.13	PLC Warning 14	
96.14	40097.14	PLC Warning 15	
96.15	40097.15	PLC Warning 16	
97.0	40098.0	Sensor 1 Open Circuit Warning (AIN16_M2)	
97.1	40098.1	Sensor 1 High Warning (AIN16_M2)	
97.2	40098.2	Sensor 1 Low Warning (AIN16_M2)	
97.3	40098.3	Reserved	
97.4	40098.4	Sensor 2 Open Circuit Warning (AIN16_M2)	
97.5	40098.5	Sensor 2 High Warning (AIN16_M2)	
97.6	40098.6	Sensor 2 Low Warning (AIN16_M2)	
97.7	40098.7	Reserved	
97.8	40098.8	Sensor 3 Open Circuit Warning (AIN16_M2)	
97.9	40098.9	Sensor 3 High Warning (AIN16_M2)	
97.10	40098.10	Sensor 3 Low Warning (AIN16_M2)	
97.11	40098.11	Reserved	
97.12	40098.12	Sensor 4 Open Circuit Warning (AIN16_M2)	
97.13	40098.13	Sensor 4 High Warning (AIN16_M2)	
97.14	40098.14	Sensor 4 Low Warning (AIN16_M2)	
97.15	40098.15	Reserved	
98.0	40099.0	Sensor 5 Open Circuit Warning (AIN16_M2)	
98.1	40099.1	Sensor 5 High Warning (AIN16_M2)	
98.2	40099.2	Sensor 5 Low Warning (AIN16_M2)	
98.3	40099.3	Reserved	
98.4	40099.4	Sensor 6 Open Circuit Warning (AIN16_M2)	
98.5	40099.5	Sensor 6 High Warning (AIN16_M2)	
98.6	40099.6	Sensor 6 Low Warning (AIN16_M2)	
98.7	40099.7	Reserved	
98.8	40099.8	Sensor 7 Open Circuit Warning (AIN16_M2)	
98.9	40099.9	Sensor 7 High Warning (AIN16_M2)	

Modbus Address	PLC Address	Item	Description
98.10	40099.10	Sensor 7 Low Warning (AIN16_M2)	
98.11	40099.11	Reserved	
98.12	40099.12	Sensor 8 Open Circuit Warning (AIN16_M2)	
98.13	40099.13	Sensor 8 High Warning (AIN16_M2)	
98.14	40099.14	Sensor 8 Low Warning (AIN16_M2)	
98.15	40099.15	Reserved	
99.0	40100.0	Sensor 9 Open Circuit Warning (AIN16_M2)	
99.1	40100.1	Sensor 9 High Warning (AIN16_M2)	
99.2	40100.2	Sensor 9 Low Warning (AIN16_M2)	
99.3	40100.3	Reserved	
99.4	40100.4	Sensor 10 Open Circuit Warning (AIN16_M2)	
99.5	40100.5	Sensor 10 High Warning (AIN16_M2)	
99.6	40100.6	Sensor 10 Low Warning (AIN16_M2)	
99.7	40100.7	Reserved	
99.8	40100.8	Sensor 11 Open Circuit Warning (AIN16_M2)	
99.9	40100.9	Sensor 11 High Warning (AIN16_M2)	
99.10	40100.10	Sensor 11 Low Warning (AIN16_M2)	
99.11	40100.11	Reserved	
99.12	40100.12	Sensor 12 Open Circuit Warning (AIN16_M2)	
99.13	40100.13	Sensor 12 High Warning (AIN16_M2)	
99.14	40100.14	Sensor 12 Low Warning (AIN16_M2)	
99.15	40100.15	Reserved	
100.0	40101.0	PLC Warning 17	
100.1	40101.1	PLC Warning 18	
100.2	40101.2	PLC Warning 19	
100.3	40101.3	PLC Warning 20	
100.4	40101.4	Coolant Level (SPN=111)	
100.5	40101.5	Engine Oil Level (SPN=98)	
100.6	40101.6	Fuel Pressure (SPN=94)	
100.7	40101.7	Exhaust Temp. (SPN=1184)	
100.8	40101.8	Seawater Pressure (SPN=520193)	
100.9	40101.9	Cooling Water Pressure (SPN=20)	
100.10	40101.10	Lubricating Oil Pressure (SPN=100)	
100.11	40101.11	High-Pressure Fuel Pipe Leakage (SPN=520750)	
100.12	40101.12	Reserved	
100.13	40101.13	Reserved	
100.14	40101.14	Reserved	
100.15	40101.15	Reserved	
101.0	40102.0	Over Speed 1 Warning (AIN16-M01)	
101.1	40102.1	Over Speed 2 Warning (AIN16-M01)	
101.2	40102.2	Over Speed 3 Warning (AIN16-M01)	
101.3	40102.3	Under Speed 1 Warning (AIN16-M01)	
101.4	40102.4	Under Speed 2 Warning (AIN16-M01)	

Modbus Address	PLC Address	Item	Description
101.5	40102.5	Under Speed 3 Warning (AIN16-M01)	
101.6	40102.6	Over Speed 1 Warning (AIN16-M02)	
101.7	40102.7	Over Speed 2 Warning (AIN16-M02)	
101.8	40102.8	Over Speed 3 Warning (AIN16-M02)	
101.9	40102.9	Under Speed 1 Warning (AIN16-M02)	
101.10	40102.10	Under Speed 2 Warning (AIN16-M02)	
101.11	40102.11	Under Speed 3 Warning (AIN16-M02)	
101.12	40102.12	Reserved	
101.13	40102.13	Reserved	
101.14	40102.14	Reserved	
101.15	40102.15	Reserved	

EXAMPLE:

If "Sensor 14 Open Circuit Warning (EXP.2)" and "Input 6 Warning" need to be read, check the table above and find their coil addresses are 32.4 and 33.5, so it needs to read two data addresses.

Assuming the slave (controller) address is 01, the master/host (could be PC) request command is as following:

Table 3 Master (PC) Request Frame

Slave Address	Function Code	Start Address (0001)		Request Data Length (2)		CRC 16	
		MSB	LSB	MSB	LSB	LSB	MSB
01	**03**	**00**	**20**	**00**	**02**	**C5**	**C1**

The slave response is as following:

Table 4 Slave (Controller) Response Frame

Slave Address	Function Code	Data Length (Bytes)	Data				CRC 16	
			Data of Address 0001 MSB	Data of Address 0001 LSB	Data of Address 0002 MSB	Data of Address 0002 LSB	LSB	MSB
01	**03**	**04**	**00**	**10**	**00**	**20**	**FA**	**2E**

Table 5 Data Analysis

Address	Data Received (Hex)	Convert to Binary	Meaning
32	0010H	0000 0000 0001 0000 (Mapping to 32.15, 32.14, ..., 32.1, 32.0 respectively)	Data of Bit4 is 1, which means "Sensor 14 Open Circuit Warning (EXP.2)" is active
33	0020H	0000 0000 0010 0000 (Mapping to 33.15, 33.14, ..., 33.1, 33.0 respectively)	Data of Bit5 is 1, which means "Input 6 Warning" is active.

1.2 FUNCTION CODE 03H MAPPING PARAMETERS OF DATA FIELD

Table 6 Master Controller Parameters of Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
256	40257	Input 1 Status					Bit0
		Input 2 Status					Bit1
		Input 3 Status					Bit2
		Input 4 Status					Bit3
		Input 5 Status					Bit4
		Input 6 Status					Bit5
		Input 7 Status					Bit6
		Input 8 Status					Bit7
		Input 9 Status					Bit8
		Input 10 Status					Bit9
		Input 11 Status					Bit10
		Input 12 Status					Bit11
		Input 13 Status					Bit12
		Input 14 Status					Bit13
		Input 15 Status					Bit14
		Input 16 Status					Bit15
257	40258	Input 17 Status					Bit0
		Input 18 Status					Bit1
		Fault Shutdown					Bit2
		Closed Status					Bit3
		Exhaust Flap Open					Bit4
		Turning Gear Interlock					Bit5
		Exhaust Flap Set Sign					Bit6
		Common Warning LED Status					Bit7
		Common Shutdown LED Status					Bit8
		Normal Running LED Status					Bit9
		Exhaust Flap Closed					Bit10
		Louver Open Interlock Set Sign					Bit11
		Emergency Mode					Bit12
		Reserved					Bit13
		Reserved					Bit14
		Reserved					Bit15
258	40259	Output 1 Status					Bit0
		Output 2 Status					Bit1
		Output 3 Status					Bit2
		Output 4 Status					Bit3

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Output 5 Status					Bit4
		Output 6 Status					Bit5
		Output 7 Status					Bit6
		Output 8 Status					Bit7
		Output 9 Status					Bit8
		Output 10 Status					Bit9
		Output 11 Status					Bit10
		Output 12 Status					Bit11
		Output 13 Status					Bit12
		Output 14 Status					Bit13
		Fuel Output Status					Bit14
		Crank Output Status					Bit15
259	40260	Reserved					Bit0
		Reserved					Bit1
		Reserved					Bit2
		Reserved					Bit3
		Reserved					Bit4
		Reserved					Bit5
		Reserved					Bit6
		Reserved					Bit7
		High Water Temp. Alarm (ECU)					Bit8
		High Oil Temp. Alarm (ECU)					Bit9
		Low Oil Pressure Alarm (ECU)					Bit10
		Over Speed Alarm (ECU)					Bit11
		Low Coolant Level Alarm (ECU)					Bit12
		Water in Fuel (ECU)					Bit13
		High Exhaust Outlet Temp. Alarm (ECU)					Bit14
		Reserved					Bit15
260	40261	Reserved					2Byte
261	40262	Speed			r/min	16-bit Unsigned	2Byte
262	40263	Sensor 1 Data	-32768~+32767			16-bit Signed	2Byte
263	40264	Sensor 2 Data	-32768~+32767			16-bit Signed	2Byte
264	40265	Sensor 3 Data	-32768~+32767			16-bit Signed	2Byte
265	40266	Sensor 4 Data	-32768~+32767			16-bit Signed	2Byte
266	40267	Sensor 5 Data	0~65535			16-bit Unsigned	2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
267	40268	Sensor 6 Data	0~65535			16-bit Unsigned	2Byte
268	40269	Sensor 7 Data	0~65535			16-bit Unsigned	2Byte
269	40270	Sensor 8 Data	0~65535			16-bit Unsigned	2Byte
270	40271	Power 1 Voltage	0~65535	0.1	V	16-bit Unsigned	2Byte
271	40272	Power 2 Voltage	0~65535	0.1	V	16-bit Unsigned	2Byte
272	40273	Charger Voltage	0~65535	0.1	V	16-bit Unsigned	2Byte
273	40274	Engine Status				Engine Status	2Byte
274	40275	Status Delay	0~65535	1	s		2Byte
275	40276	GOV PCT				None	
276	40277	Sensor 9 Data	-32768~+32767			16-bit Signed	2Byte
277	40278	Total Running Time: hour	0~65535				2Byte
278	40279	Total Running Time: minute	0~65535				2Byte
279	40280	Total Running Time: second	0~65535				2Byte
280	40281	Total Start Times	0~65535				2Byte
281	40282	Sensor 10 Data	0~65535			16-bit Unsigned	2Byte
282	40283	Reserved					2Byte
283	40284	ECU Sensor Data 1	-32768~+32767		%	Coolant Level The data will not be displayed if the engine type is 4 or 5.	
284	40285	ECU Sensor Data 2	-32768~+32767		°C	Engine Oil Temp.	
285	40286	ECU Sensor Data 3	-32768~+32767		kPa	Coolant Pressure (Hot Cooling Water Temp.) If the genset type is 13	
286	40287	ECU Sensor Data 4	-32768~+32767		kPa	Fuel Pressure	

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
287	40288	ECU Sensor Data 5	-32768~+32767		°C	Fuel Temp.	
288	40289	ECU Sensor Data 6	-32768~+32767		°C	Air Inlet Temp. (Compressed Air Temp.) If the genset type is 13	
289	40290	ECU Sensor Data 7	-32768~+32767		°C	Exhaust Outlet Temp.	
290	40291	ECU Sensor Data 8	-32768~+32767		kPa	Turbo Pressure	
291	40292	Fuel Consumption	-32768~+32767		L/h	The data will not be displayed if the engine type is 4 or 5.	2Byte
292	40293	Total Fuel Consumption (L)			L		4Byte
293	40294	Total Fuel Consumption (H)					
294	40295	Controller Model					2Byte
295	40296	Controller Software Version					2Byte
296	40297	Controller Hardware Version		0.1			2Byte
297	40298	Release (Year)					2Byte
298	40299	Release (Month)					2Byte
299	40300	Release (Day)					2Byte
300	40301	Reserved					2Byte
301	40302	Total Event Logs				None	2Byte
302	40303	Controller Date: Year	0~100	1	Year		2Byte
303	40304	Controller Date: Month	1~12	1	Month		2Byte
304	40305	Controller Date: Day	1~31	1	Day		2Byte
305	40306	Controller Date: Week	0~6	1	Week		2Byte
306	40307	Controller Time: Hour	0~23	1	h		2Byte
307	40308	Controller Time: minute	0~59	1	min		2Byte
308	40309	Controller Time: Second	0~59	1	sec		2Byte
309	40310	Load PCT %	0~65535				2Byte
310	40311	Stern Shaft Speed	-32768~+32767		r/min		2Byte
311	40312	Stern Shaft Sensor Input Current Value	0~65535				2Byte
312	40313	Lubricating Oil Pressure Difference					2Byte
313	40314	Sensor 9 Voltage	0~65535		V		2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
314	40315	Sensor 10 Voltage	0~65535		V		2Byte
315	40316	Sensor 1 Current	0~65535		mA		2Byte
316	40317	Sensor 2 Current	0~65535		mA		2Byte
317	40318	Sensor 3 Current	0~65535		mA		2Byte
318	40319	Sensor 4 Current	0~65535		mA		2Byte
319	40320	Sensor 5 Resistance	0~65535		Ω		2Byte
320	40321	Sensor 6 Resistance	0~65535		Ω		2Byte
321	40322	Sensor 7 Resistance	0~65535		Ω		2Byte
322	40323	Sensor 8 Resistance	0~65535		Ω		2Byte
323	40324	Remote Start Status					2Byte
324	40325	Remote Start Delay	0~65535	1	s		2Byte
325	40326	Reserved					
326	40327	Reserved					
327	40328	Left Exhaust Temp.	-32768~+32767		°C	16-bit Signed	
328	40329	Right Exhaust Temp.	-32768~+32767		°C	16-bit Signed	
329	40330	Cold Cooling Water Temp.	-32768~+32767		°C	16-bit Signed	
330	40331	Cold Cooling Water Pressure	-32768~+32767		kPa	16-bit Signed	
331	40332	Reserved					
332	40333	Reserved					
333	40334	Seawater Pressure	0~65535		kPa		
334	40335	Torque Percentage (Displayed)	-32768~+32767		%		
335	40336	Common Rail Fuel Pressure		0.1	MPa		
336	40337	Reserved					
337	40338	Reserved					
338	40339	Reserved					
339	40340	Reserved					
340	40341	Reserved					
341	40342	Reserved					
342	40343	Reserved					
343	40344	Reserved					
344	40345	RPU Speed	0~65535		r/min	Magnetic pickup speed of ECU	
345	40346	Maintenance Time	0~65535				
346	40347	Torque Percentage (Not Displayed)					
347	40348	CRC Code		1		After CRC check, sum each	
348	40349						

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
						configuration structure	
349	40350	ECU Temp.					
350	40351	RPU560 Sensor 1 Type					
351	40352	RPU560 Sensor 2 Type					
352	40353	PC Version					
353	40354	Monitoring Controller Version					
354	40355	Left Exhaust Temp. 1	-32768~+32767	1	°C		
355	40356	Left Exhaust Temp. 2	-32768~+32767	1	°C		
356	40357	Right Exhaust Temp. 1	-32768~+32767	1	°C		
357	40358	Right Exhaust Temp. 2	-32768~+32767	1	°C		
358	40359	Air Inlet Temp.	-32768~+32767	1	°C		
359	40360	Crankcase Pressure	-32768~+32767	1	kPa		
360	40361	Cold Cooling Water Temp.	-32768~+32767	1	°C		
361	40362	Hot Cooling Water Pressure	0~65535	1	kPa		
362	40363	Cold Cooling Water Pressure	0~65535	1	kPa		
363	40364	Seawater Pressure	0~65535	1	kPa		
364	40365	Air Inlet Pressure	0~65535	1	kPa		
365	40366	Fuel Filter Outlet Pressure	0~65535	1	kPa		
366	40367	Lubricating Oil Filter Inlet Pressure	0~65535	1	kPa		
367	40368	Lubricating Oil Filter Pressure Difference	0~65535	1	kPa		
368	40369	ECU Version 1					
369	40370	ECU Version 2					
370	40371	ECU Version 3					
371	40372	ECU Version 4					
372	40373	ECU Version 5					
373	40374	ECU Version 6					
374	40375	ECU Version 7					
375	40376	ECU Version 8					
376	40377	ECU Version 9					
377	40378	ECU Version 10					
378	40379	ECU Version 11					
379	40380	ECU Version 12					
380~	40381~	Reserved					

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
405	40405						

Table 7 Analog Expansion Board Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
512	40513	Sensor 1 Data (EXP.1)	0~65535			After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors 15-24 of AIN24.	2Byte
513	40514	Sensor 2 Data (EXP.1)	0~65535				2Byte
514	40515	Sensor 3 Data (EXP.1)	0~65535				2Byte
515	40516	Sensor 4 Data (EXP.1)	0~65535				2Byte
516	40517	Sensor 5 Data (EXP.1)	0~65535				2Byte
517	40518	Sensor 6 Data (EXP.1)	0~65535				2Byte
518	40519	Sensor 7 Data (EXP.1)	0~65535				2Byte
519	40520	Sensor 8 Data (EXP.1)	0~65535				2Byte
520	40521	Sensor 9 Data (EXP.1)	0~65535				2Byte
521	40522	Sensor 10 Data (EXP.1)	0~65535				2Byte
522	40523	Sensor 11 Data (EXP.1)	0~65535				2Byte
523	40524	Sensor 12 Data (EXP.1)	0~65535				2Byte
524	40525	Sensor 13 Data (EXP.1)	0~65535				2Byte
525	40526	Sensor 14 Data (EXP.1)	0~65535				2Byte
526	40527	Sensor 15 Data (EXP.1)	0~65535				2Byte
527	40528	Sensor 16 Data (EXP.1)	0~65535				2Byte
528	40529	Sensor 1 Current/ Resistance (EXP.1)	0~65535				2Byte
529	40530	Sensor 2 Current/ Resistance (EXP.1)	0~65535				2Byte
530	40531	Sensor 3 Current/ Resistance (EXP.1)	0~65535				2Byte
531	40532	Sensor 4 Current/ Resistance (EXP.1)	0~65535				2Byte
532	40533	Sensor 5 Current/ Resistance (EXP.1)	0~65535				2Byte
533	40534	Sensor 6 Current/ Resistance (EXP.1)	0~65535				2Byte
534	40535	Sensor 7 Current/ Resistance (EXP.1)	0~65535				2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
535	40536	Sensor 8 Current/ Resistance (EXP.1)	0~65535				2Byte
536	40537	Sensor 9 Current/ Resistance (EXP.1)	0~65535				2Byte
537	40538	Sensor 10 Current/ Resistance (EXP.1)	0~65535				2Byte
538	40539	Sensor 11 Current/ Resistance (EXP.1)	0~65535				2Byte
539	40540	Sensor 12 Current/ Resistance (EXP.1)	0~65535				2Byte
540	40541	Sensor 13 Current/ Resistance (EXP.1)	0~65535				2Byte
541	40542	Sensor 14 Current/ Resistance (EXP.1)	0~65535				2Byte
542	40543	Sensor 15 Current/ Resistance (EXP.1)	0~65535				2Byte
543	40544	Sensor 16 Current/ Resistance (EXP.1)	0~65535				2Byte
544-560	40545-40561	Sensor 1-16 Data (EXP.2)	0~65535				2Byte
561-577	40562-40578	Sensor 1-16 Current/ Resistance (EXP.2)	0~65535				2Byte
578	40579	Reserved					2Byte

Table 8 AIN8 Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
640	40641	Sensor 1 Data	-32768~+32767			AIN8 Module 1	2Byte
641	40642	Sensor 2 Data	-32768~+32767				2Byte
642	40643	Sensor 3 Data	-32768~+32767				2Byte
643	40644	Sensor 4 Data	-32768~+32767				2Byte
644	40645	Sensor 5 Data	-32768~+32767				2Byte
645	40646	Sensor 6 Data	-32768~+32767				2Byte
646	40647	Sensor 7 Data	-32768~+32767				2Byte
647	40648	Sensor 8 Data	-32768~+32767				2Byte
648	40649	Sensor 1 Resistance Data	0~65535				2Byte
649	40650	Sensor 2 Resistance Data	0~65535				2Byte
650	40651	Sensor 3 Resistance Data	0~65535				2Byte
651	40652	Sensor 4	0~65535				2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Resistance Data					
652	40653	Sensor 5 Resistance Data	0~65535				2Byte
653	40654	Sensor 6 Resistance Data	0~65535				2Byte
654	40655	Sensor 7 Resistance Data	0~65535				2Byte
655	40656	Sensor 8 Resistance Data	0~65535				2Byte
656	40657	Sensor 1 Data	-32768~+32767			AIN8 Module 2	2Byte
657	40658	Sensor 2 Data	-32768~+32767				2Byte
658	40659	Sensor 3 Data	-32768~+32767				2Byte
659	40660	Sensor 4 Data	-32768~+32767				2Byte
660	40661	Sensor 5 Data	-32768~+32767				
661	40662	Sensor 6 Data	-32768~+32767				
662	40663	Sensor 7 Data	-32768~+32767				
663	40664	Sensor 8 Data	-32768~+32767				
664	40665	Sensor 1 Resistance Data	0~65535				
665	40666	Sensor 2 Resistance Data	0~65535				
666	40667	Sensor 3 Resistance Data	0~65535				
667	40668	Sensor 4 Resistance Data	0~65535				
668	40669	Sensor 5 Resistance Data	0~65535				
669	40670	Sensor 6 Resistance Data	0~65535				
670	40671	Sensor 7 Resistance Data	0~65535				
671	40672	Sensor 8 Resistance Data	0~65535				

Table 9 RPU Module Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
768	40769	Power 1 Voltage (RPU)	0~65535	0.1	V		2Byte
769	40770	Power 2 Voltage (RPU)	0~65535	0.1	V		2Byte
770	40771	Speed (RPU)	0~65535		r/min		2Byte
771	40772	Emergency Stop					Bit0

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Status (RPU)					
		Input 1 Status (RPU)					Bit1
		Input 2 Status (RPU)					Bit2
		Input 3 Status (RPU)					Bit3
		Input 4 Status (RPU)					Bit4
		Input 5 Status (RPU)					Bit5
		Reserved					Bit6~ Bit15
772	40773	Output 1 Status (RPU)					Bit0
		Output 2 Status (RPU)					Bit1
		Output 3 Status (RPU)					Bit2
		Output 4 Status (RPU)					Bit3
		Output 5 Status (RPU)					Bit4
		Power Status				1: Power1; 0: Power2	Bit5
		Reserved					Bit6
		Mode Type					Bit7
		Reserved					Bit8~ Bit15
773	40774	Controller Model				None	2Byte
774	40775	Controller Software Version					2Byte
775	40776	Controller Hardware Version					2Byte
776	40777	Release (Year)					2Byte
777	40778	Release (Month)					2Byte
778	40779	Release (Day)					2Byte
779	40780	Sensor 1 Data	-32768~+32767				2Byte
780	40781	Sensor 2 Data	-32768~+32767				2Byte
781	40782	Sensor 1 Resistance/ Current/Voltage	0~65535			None	2Byte
782	40783	Sensor 2 Resistance/ Current/Voltage	0~65535				2Byte
783	40784	Reserved					
784	40785	Reserved					
785	40786	Reserved					

Table 10 DOUT Expansion Board Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1024	41025	Output 1 Status				None	Bit0
		Output 2 Status					Bit1
		Output 3 Status					Bit2
		Output 4 Status					Bit3
		Output 5 Status					Bit4
		Output 6 Status					Bit5
		Output 7 Status					Bit6
		Output 8 Status					Bit7
		Output 9 Status					Bit8
		Output 10 Status					Bit9
		Output 11 Status					Bit10
		Output 12 Status					Bit11
		Output 13 Status					Bit12
		Output 14 Status					Bit13
		Output 15 Status					Bit14
		Output 16 Status					Bit15
1025	41028	EXP. Output 2 Status					2Byte
1026	41027	Reserved					2Byte

Table 11 DIN Expansion Module Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1280	41281	Input 1 Status					Bit0
		Input 2 Status					Bit1
		Input 3 Status					Bit2
		Input 4Status					Bit3
		Input 5 Status					Bit4
		Input 6 Status					Bit5
		Input 7 Status					Bit6
		Input 8 Status					Bit7
		Input 9 Status					Bit8
		Input 10 Status					Bit9
		Input 11 Status					Bit10
		Input 12 Status					Bit11
		Input 13 Status					Bit12
		Input 14 Status					Bit13
		Input 15 Status					Bit14
		Input 16 Status					Bit15
1281	41282	EXP. Input 2 Status					2Byte
1282	41283	Reserved					
1283	41284	Reserved					

Table 12 HMC300 Module Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1312	41313	Common Alarm				1 for active	Bit0
		Common Warning Alarm				1 for active	Bit1
		Common Trip Alarm				1 for active	Bit2
		Reserved					Bit3
		Reserved					Bit4
		Reserved					Bit5
		Reserved					Bit6
		Reserved					Bit7
		Reserved					Bit8
		Reserved					Bit9
		Reserved					Bit10
		Reserved					Bit11
		Reserved					Bit12
		Reserved					Bit13
		Reserved					Bit14
		Reserved					Bit15
1313	41314	Gen. Over Voltage Trip Alarm					Bit0
		Gen. Under Voltage Trip Alarm					Bit1
		Gen. Loss of Phase Trip Alarm					Bit2
		Gen. Reverse Phase Sequence Trip Alarm					Bit3
		Gen. Over Frequency Trip Alarm					Bit4
		Gen. Under Frequency Trip Alarm					Bit5
		Gen. Over Current Trip Alarm					Bit6
		Reserved					Bit7
		Gen. Over Power Trip Alarm					Bit8
		Reserved					Bit9
		Gen. Reverse Power Trip Alarm					Bit10
		Reserved					Bit11
		Reserved					Bit12
		Reserved					Bit13
		Reserved					Bit14

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Reserved					Bit15
1314	41315	Gen. Over Voltage Warning					Bit0
		Gen. Under Voltage Warning					Bit1
		Reserved					Bit2
		Reserved					Bit3
		Gen. Over Frequency Warning					Bit4
		Gen. Under Frequency Warning					Bit5
		Reserved					Bit6
		Gen. Over Current Warning					Bit7
		Reserved					Bit8
		Gen. Over Power Warning					Bit9
		Reserved					Bit10
		Gen. Reverse Power Warning					Bit11
		Reserved					Bit12
		Reserved					Bit13
		Reserved					Bit14
		Reserved					Bit15
1315	41316	Reserved					
1316	41317	Reserved					
1317	41318	Reserved					
1318	41319	Reserved					
1319	41320	Output 1 Status				1 for active	Bit0
		Output 2 Status				1 for active	Bit1
		Output 3 Status				1 for active	Bit2
		Output 4 Status				1 for active	Bit3
		Reserved					Bit4
		Reserved					Bit5
		Reserved					Bit6
		Reserved					Bit7
		Reserved					Bit8
		Reserved					Bit9
		Reserved					Bit10
		Reserved					Bit11
		Reserved					Bit12
		Reserved					Bit13
		Reserved					Bit14

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Reserved					Bit15
1320	41321	Reserved					Bit0
		Reserved					Bit1
		Reserved					Bit2
		Reserved					Bit3
		Reserved					Bit4
		Reserved					Bit5
		Reserved					Bit6
		Reserved					Bit7
		Voltage A THD				1 for active	Bit8
		Voltage B THD				1 for active	Bit9
		Voltage C THD				1 for active	Bit10
		Current A THD				1 for active	Bit11
		Current B THD				1 for active	Bit12
		Current C THD				1 for active	Bit13
		Reserved					Bit14
		Reserved					Bit15
1321	41322	Gen. UAB	-32768~+32767	1	V	16-bit Signed	2Byte
1322	41323	Gen. UBC	-32768~+32767	1	V	16-bit Signed	2Byte
1323	41324	Gen. UCA	-32768~+32767	1	V	16-bit Signed	2Byte
1324	41325	Gen. UA	-32768~+32767	1	V	16-bit Signed	2Byte
1325	41326	Gen. UB	-32768~+32767	1	V	16-bit Signed	2Byte
1326	41327	Gen. UC	-32768~+32767	1	V	16-bit Signed	2Byte
1327	41328	Gen. UA Phase	-32768~+32767	1	°	16-bit Signed	2Byte
1328	41329	Gen. UB Phase	-32768~+32767	1	°	16-bit Signed	2Byte
1329	41330	Gen. UC Phase	-32768~+32767	1	°	16-bit Signed	2Byte
1330	41331	Gen. Frequency	-32768~+32767	0.1	Hz	16-bit Signed	2Byte
1331	41332	Reserved					
1332	41333	Reserved					
1333	41334	Reserved					
1334	41335	Phase A Current	0~65535	0.1	A	16-bit Unsigned	2Byte
1335	41336	Phase B Current	0~65535	0.1	A	16-bit Unsigned	2Byte
1336	41337	Phase C Current	0~65535	0.1	A	16-bit Unsigned	2Byte
1337	41338	Reserved					
1338	41339	Reserved					
1339	41340	Reserved					
1340	41341	Reserved					
1341	41342	Reserved					
1342	41343	Reserved					
1343	41344	Reserved					

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1344	41345	Reserved					
1345	41346	Reserved					
1346	41347	Reserved					
1347 1348	41348 41349	Phase A Active Power		0.1	kW	32-bit Signed	4Bytes
1349 1350	41350 41351	Phase B Active Power		0.1	kW	32-bit Signed	4Bytes
1351 1352	41352 41353	Phase C Active Power		0.1	kW	32-bit Signed	4Bytes
1353 1354	41354 41355	Total Active Power		0.1	kW	32-bit Signed	4Bytes
1355 1356	41356 41357	Phase A Reactive Power		0.1	kvar	32-bit Signed	4Bytes
1357 1358	41358 41359	Phase B Reactive Power		0.1	kvar	32-bit Signed	4Bytes
1359 1360	41360 41361	Phase C Reactive Power		0.1	kvar	32-bit Signed	4Bytes
1361 1362	41362 41363	Total Reactive Power		0.1	kvar	32-bit Signed	4Bytes
1363 1364	41364 41365	Phase A Apparent Power	None	0.1	kVA	32-bit Signed	4Bytes
1365 1366	41366 41367	Phase B Apparent Power		0.1	kVA	32-bit Signed	4Bytes
1367 1368	41368 41369	Phase C Apparent Power		0.1	kVA	32-bit Signed	4Bytes
1369 1370	41370 41371	Total Apparent Power		0.1	kVA	32-bit Signed	4Bytes
1371	41372	Phase A Power Factor	-32768~+32767	0.01		16-bit Signed	2Bytes
1372	41373	Phase B Power Factor	-32768~+32767	0.01		16-bit Signed	2Bytes
1373	41374	Phase C Power Factor	-32768~+32767	0.01		16-bit Signed	2Bytes
1374	41375	Average Power Factor	-32768~+32767	0.01		16-bit Signed	2Bytes
1375	41376	Voltage Phase A THD		0.1		16-bit Unsigned	
1376	41377	Voltage Phase B THD		0.1		16-bit Unsigned	
1377	41378	Voltage Phase C THD		0.1		16-bit Unsigned	
1378	41379	Current Phase A THD		0.1		16-bit Unsigned	
1379	41380	Current Phase B THD		0.1		16-bit Unsigned	
1380	41381	Current Phase C THD		0.1		16-bit Unsigned	

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1381 1382	41382 41383	Electricity Energy (Active)		0.1	kWh	32-bit Signed	4Bytes
1383 1384	41384 41385	Electricity Energy (Reactive)		0.1	kvarh	32-bit Signed	4Bytes
1385	41386	Controller Model					2Bytes
1386	41387	Controller Software Version		0.1		16-bit Unsigned	2Bytes
1387	41388	Controller Hardware Version		0.1		16-bit Unsigned	2Bytes
1388	41389	Release (Year)				Only save the last two digits of the Year	2Bytes
1389	41390	Release (Month)				16-bit Unsigned	2Bytes
1390	41391	Release (Day)				16-bit Unsigned	2Bytes
1391	41392	Reserved					2Bytes
1392	41393	Reserved					
1393	41394	Reserved					
1394	41395	Reserved					
1395	41396	Reserved					
1396	41397	Reserved					
1397	41398	Reserved					
1398	41399	Reserved					
1399	41400	Reserved					
1400	41401	Reserved					
1401	41402	Reserved					
1402	41403	Reserved					
1403	41404	Reserved					
1404	41405	Reserved					
1405	41406	Reserved					
1406	41407	Reserved					

Table 13 AIN16_C Expansion Board Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1792	41793	Sensor 1 Data (AIN16_C1)	0~65535				2Byte
1793	41794	Sensor 2 Data (AIN16_C1)	0~65535				2Byte
1794	41795	Sensor 3 Data (AIN16_C1)	0~65535				2Byte
1795	41796	Sensor 4 Data (AIN16_C1)	0~65535				2Byte
1796	41797	Sensor 5 Data (AIN16_C1)	0~65535				2Byte
1797	41798	Sensor 6 Data (AIN16_C1)	0~65535				2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1798	41799	Sensor 7 Data (AIN16_C1)	0~65535				2Byte
1799	41800	Sensor 8 Data (AIN16_C1)	0~65535				2Byte
1800	41801	Sensor 9 Data (AIN16_C1)	0~65535				2Byte
1801	41802	Sensor 10 Data (AIN16_C1)	0~65535				2Byte
1802	41803	Sensor 11 Data (AIN16_C1)	0~65535				2Byte
1803	41804	Sensor 12 Data (AIN16_C1)	0~65535				2Byte
1804	41805	Sensor 13 Data (AIN16_C1)	0~65535				2Byte
1805	41806	Sensor 14 Data (AIN16_C1)	0~65535				2Byte
1806	41807	Sensor 15 Data (AIN16_C1)	0~65535				2Byte
1807	41808	Sensor 16 Data (AIN16_C1)	0~65535				2Byte
1808	41809	Speed 1	0~65535				2Byte
1809	41810	Speed 2	0~65535				2Byte
1810	41811	Speed 3	0~65535				2Byte
1811	41812	Reserved	0~65535				2Byte
1812	41813	Sensor 1 Current (AIN16_C1)	0~65535				2Byte
1813	41814	Sensor 2 Current (AIN16_C1)	0~65535				2Byte
1814	41815	Sensor 3 Current (AIN16_C1)	0~65535				2Byte
1815	41816	Sensor 4 Current (AIN16_C1)	0~65535				2Byte
1816	41817	Sensor 5 Current (AIN16_C1)	0~65535				2Byte
1817	41818	Sensor 6 Current (AIN16_C1)	0~65535				2Byte
1818	41819	Sensor 7 Current (AIN16_C1)	0~65535				2Byte
1819	41820	Sensor 8 Current (AIN16_C1)	0~65535				2Byte
1820	41821	Sensor 9 Current (AIN16_C1)	0~65535				2Byte
1821	41822	Sensor 10 Current (AIN16_C1)	0~65535				2Byte
1822	41823	Sensor 11 Current (AIN16_C1)	0~65535				2Byte
1823	41824	Sensor 12 Current (AIN16_C1)	0~65535				2Byte
1824	41825	Sensor 13 Current (AIN16_C1)	0~65535				2Byte
1825	41826	Sensor 14 Current (AIN16_C1)	0~65535				2Byte
1826	41827	Sensor 15 Current (AIN16_C1)	0~65535				2Byte
1827	41828	Sensor 16 Current (AIN16_C1)	0~65535				
1828	41829	Sensor 1 Data (AIN16_C2)	0~65535				
1829	41830	Sensor 2 Data (AIN16_C2)	0~65535				
1830	41831	Sensor 3 Data (AIN16_C2)	0~65535				
1831	41832	Sensor 4 Data (AIN16_C2)	0~65535				
1832	41833	Sensor 5 Data (AIN16_C2)	0~65535				
1833	41834	Sensor 6 Data (AIN16_C2)	0~65535				
1834	41835	Sensor 7 Data (AIN16_C2)	0~65535				
1835	41836	Sensor 8 Data (AIN16_C2)	0~65535				
1836	41837	Sensor 9 Data (AIN16_C2)	0~65535				
1837	41838	Sensor 10 Data (AIN16_C2)	0~65535				
1838	41839	Sensor 11 Data (AIN16_C2)	0~65535				
1839	41840	Sensor 12 Data (AIN16_C2)	0~65535				
1840	41841	Sensor 13 Data (AIN16_C2)	0~65535				

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
1841	41842	Sensor 14 Data (AIN16_C2)	0~65535				
1842	41843	Sensor 15 Data (AIN16_C2)	0~65535				
1843	41844	Sensor 16 Data (AIN16_C2)	0~65535				
1844	41845	Speed 1	0~65535				
1845	41846	Speed 2	0~65535				
1846	41847	Speed 3	0~65535				
1847	41848	Reserved	0~65535				
1848	41849	Sensor 1 Current (AIN16_C2)	0~65535				
1849	41850	Sensor 2 Current (AIN16_C2)	0~65535				
1850	41851	Sensor 3 Current (AIN16_C2)	0~65535				
1851	41852	Sensor 4 Current (AIN16_C2)	0~65535				
1852	41853	Sensor 5 Current (AIN16_C2)	0~65535				
1853	41854	Sensor 6 Current (AIN16_C2)	0~65535				
1854	41855	Sensor 7 Current (AIN16_C2)	0~65535				
1855	41856	Sensor 8 Current (AIN16_C2)	0~65535				
1856	41857	Sensor 9 Current (AIN16_C2)	0~65535				
1857	41858	Sensor 10 Current (AIN16_C2)	0~65535				
1858	41859	Sensor 11 Current (AIN16_C2)	0~65535				
1859	41860	Sensor 12 Current (AIN16_C2)	0~65535				
1860	41861	Sensor 13 Current (AIN16_C2)	0~65535				
1861	41862	Sensor 14 Current (AIN16_C2)	0~65535				
1862	41863	Sensor 15 Current (AIN16_C2)	0~65535				
1863	41864	Sensor 16 Current (AIN16_C2)	0~65535				

Table 14 AIN16_PT Expansion Board Data Field

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
2048	42049	Sensor 1 Data (AIN16_PT1)	-32768~+32767			After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of	2Byte
2049	42050	Sensor 2 Data (AIN16_PT1)	-32768~+32767				2Byte
2050	42051	Sensor 3 Data (AIN16_PT1)	-32768~+32767				2Byte
2051	42052	Sensor 4 Data (AIN16_PT1)	-32768~+32767				2Byte
2052	42053	Sensor 5 Data (AIN16_PT1)	-32768~+32767				2Byte
2053	42054	Sensor 6 Data (AIN16_PT1)	-32768~+32767				2Byte
2054	42055	Sensor 7 Data (AIN16_PT1)	-32768~+32767				2Byte
2055	42056	Sensor 8 Data (AIN16_PT1)	-32768~+32767				2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
2056	42057	Sensor 9 Data (AIN16_PT1)	-32768~+32767			sensors 1-10 on the analog expansion module 1 correspond to the sensors 15-24 of AIN24.	2Byte
2057	42058	Sensor 10 Data (AIN16_PT1)	-32768~+32767				2Byte
2058	42059	Sensor 11 Data (AIN16_PT1)	-32768~+32767				2Byte
2059	42060	Sensor 12 Data (AIN16_PT1)	-32768~+32767				2Byte
2060	42061	Sensor 13 Data (AIN16_PT1)	-32768~+32767				2Byte
2061	42062	Sensor 14 Data (AIN16_PT1)	-32768~+32767				2Byte
2062	42063	Sensor 15 Data (AIN16_PT1)	-32768~+32767				2Byte
2063	42064	Sensor 16 Data (AIN16_PT1)	-32768~+32767				2Byte
2064	42065	Reserved					2Byte
2065	42066	Reserved					2Byte
2066	42067	Reserved					2Byte
2067	42068	Reserved					2Byte
2068	42069	Sensor 1 Resistance (AIN16_PT1)	0~65535				2Byte
2069	42070	Sensor 2 Resistance (AIN16_PT1)	0~65535				2Byte
2070	42071	Sensor 3 Resistance (AIN16_PT1)	0~65535				2Byte
2071	42072	Sensor 4 Resistance (AIN16_PT1)	0~65535				2Byte
2072	42073	Sensor 5 Resistance (AIN16_PT1)	0~65535				2Byte
2073	42074	Sensor 6 Resistance (AIN16_PT1)	0~65535				2Byte
2074	42075	Sensor 7 Resistance (AIN16_PT1)	0~65535				2Byte
2075	42076	Sensor 8 Resistance (AIN16_PT1)	0~65535				2Byte
2076	42077	Sensor 9 Resistance (AIN16_PT1)	0~65535				2Byte
2077	42078	Sensor 10 Resistance (AIN16_PT1)	0~65535				2Byte
2078	42079	Sensor 11 Resistance (AIN16_PT1)	0~65535				2Byte
2079	42080	Sensor 12 Resistance	0~65535				2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		(AIN16_PT1)					
2080	42081	Sensor 13 Resistance (AIN16_PT1)	0~65535				2Byte
2081	42082	Sensor 14 Resistance (AIN16_PT1)	0~65535				2Byte
2082	42083	Sensor 15 Resistance (AIN16_PT1)	0~65535				2Byte
2083	42084	Sensor 16 Resistance (AIN16_PT1)	0~65535				
2084	42085	Sensor 1 Data (AIN16_PT2)	-32768~+32767			After AIN24 is enabled, sensors 1-14 of AIN16-PT correspond to the K-type sensors of channels 1-14 of AIN24, while sensors 15-16 of AIN16-PT are not used. The alarms and data addresses of sensors 1-10 on the analog expansion module 1 correspond to the sensors 15-24 of AIN24.	
2085	42086	Sensor 2 Data (AIN16_PT2)	-32768~+32767				
2086	42087	Sensor 3 Data (AIN16_PT2)	-32768~+32767				
2087	42088	Sensor 4 Data (AIN16_PT2)	-32768~+32767				
2088	42089	Sensor 5 Data (AIN16_PT2)	-32768~+32767				
2089	42090	Sensor 6 Data (AIN16_PT2)	-32768~+32767				
2090	42091	Sensor 7 Data (AIN16_PT2)	-32768~+32767				
2091	42092	Sensor 8 Data (AIN16_PT2)	-32768~+32767				
2092	42093	Sensor 9 Data (AIN16_PT2)	-32768~+32767				
2093	42094	Sensor 10 Data (AIN16_PT2)	-32768~+32767				
2094	42095	Sensor 11 Data (AIN16_PT2)	-32768~+32767				
2095	42096	Sensor 12 Data (AIN16_PT2)	-32768~+32767				
2096	42097	Sensor 13 Data (AIN16_PT2)	-32768~+32767				
2097	42098	Sensor 14 Data (AIN16_PT2)	-32768~+32767				
2098	42099	Sensor 15 Data (AIN16_PT2)	-32768~+32767				
2099	42100	Sensor 16 Data (AIN16_PT2)	-32768~+32767				
2100	42101	Reserved					
2101	42102	Reserved					

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
2102	42103	Reserved					
2103	42104	Reserved					
2104	42105	Sensor 1 Resistance (AIN16_PT2)	0~65535				
2105	42106	Sensor 2 Resistance (AIN16_PT2)	0~65535				
2106	42107	Sensor 3 Resistance (AIN16_PT2)	0~65535				
2107	42108	Sensor 4 Resistance (AIN16_PT2)	0~65535				
2108	42109	Sensor 5 Resistance (AIN16_PT2)	0~65535				
2109	42110	Sensor 6 Resistance (AIN16_PT2)	0~65535				
2110	42111	Sensor 7 Resistance (AIN16_PT2)	0~65535				
2111	42112	Sensor 8 Resistance (AIN16_PT2)	0~65535				
2112	42113	Sensor 9 Resistance (AIN16_PT2)	0~65535				
2113	42114	Sensor 10 Resistance (AIN16_PT2)	0~65535				
2114	42115	Sensor 11 Resistance (AIN16_PT2)	0~65535				
2115	42116	Sensor 12 Resistance (AIN16_PT2)	0~65535				
2116	42117	Sensor 13 Resistance (AIN16_PT2)	0~65535				
2117	42118	Sensor 14 Resistance (AIN16_PT2)	0~65535				
2118	42119	Sensor 15 Resistance (AIN16_PT2)	0~65535				
2119	42120	Sensor 16 Resistance (AIN16_PT2)	0~65535				

Table 15 AIN16_M02 Expansion Board Data Field (AIN16_M01 NEW)

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
2176	42177	AIN16M01 Sensor 1 Temp.	-32768~+32767				2Byte
2177	42178	AIN16M01 Sensor 2 Temp.	-32768~+32767				2Byte
2178	42179	AIN16M01 Sensor 3	-32768~+32767				2Byte

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Temp.					
2179	42180	AIN16M01 Sensor 4 Temp.	-32768~+32767				2Byte
2180	42181	AIN16M01 Sensor 5 Temp.	-32768~+32767				2Byte
2181	42182	AIN16M01 Sensor 6 Temp.	-32768~+32767				2Byte
2182	42183	AIN16M01 Sensor 7 Temp.	-32768~+32767				2Byte
2183	42184	AIN16M01 Sensor 8 Temp.	-32768~+32767				2Byte
2184	42185	AIN16M01 Sensor 9 Temp.	-32768~+32767				2Byte
2185	42186	AIN16M01 Sensor 10 Temp.	-32768~+32767				2Byte
2186	42187	AIN16M01 Sensor 11 Temp.	-32768~+32767			K-type	2Byte
2187	42188	AIN16M01 Sensor 12 Temp.	-32768~+32767			K-type	2Byte
2188	42189	Reserved					2Byte
2189	42190	Reserved					2Byte
2190	42191	Reserved					2Byte
2191	42192	4-20mA Output 1 mA Value	0~65535				2Byte
2192	42193	4-20mA Output 2 mA Value	0~65535				2Byte
2193	42194	4-20mA Output 3 mA Value	0~65535				2Byte
2194	42195	AIN16M01 Sensor 1 Resistance	0~65535				
2195	42196	AIN16M01 Sensor 2 Resistance	0~65535				
2196	42197	AIN16M01 Sensor 3 Resistance	0~65535				
2197	42198	AIN16M01 Sensor 4 Resistance	0~65535				
2198	42199	AIN16M01 Sensor 5 Resistance	0~65535				
2199	42200	AIN16M01 Sensor 6 Resistance	0~65535				
2200	42201	AIN16M01 Sensor 7 Resistance	0~65535				
2201	42202	AIN16M01 Sensor 8	0~65535				

Modbus Address	PLC Address	Item	Range (Decimal)	Ratio	Unit	Description	Remarks
		Resistance					
2202	42203	AIN16M01 Sensor 9 Resistance	0~65535				
2203	42204	AIN16M01 Sensor 10 Resistance	0~65535				
2204	42205	AIN16M01 Sensor 11 Resistance	0~65535				
2205	42206	AIN16M01 Sensor 12 Resistance	0~65535				

NOTE 1: Actual value = data received * ratio. Take the Frequency as the example: if the data received is 500 (1F4H), ratio is 0.1Hz, then the actual frequency value is 50.0Hz (500*0.1Hz).

NOTE 2: If there are 4 bytes in the data, the actual value = high order bits of data received * 65536 + low order bits of data received.

NOTE 3: If data received is 32766, it means there is no normal data, and "###" will be shown.

NOTE 4: Definition of signed number: Take the data received "8000H" as the example, convert it to binary number "1000 0000 0000 0000b". The MSB is 1, which means it is negative. The number minus 1 will get its 1's complement, then inverting it will get the absolute value of the negative number. Finally convert the absolute value to decimal number -32768.

EXAMPLE:

If "Total Fuel Consumption" (current value is 123456) needs to be read, check the table above and find its Modbus address is 292 and 293, so it needs to read two bytes addresses.

Assuming the slave address is 01, the master request command is as following:

Table 16 Master Request Command

Slave Address	Function Code	Start Address (292)		Request Data Length (2)		CRC 16	
		MSB	LSB	MSB	LSB	LSB	MSB
01	**03**	**01**	**24**	**00**	**02**	**85**	**FC**

The slave response command is as following:

Table 17 Slave Response Command

Slave Address	Function Code	Data Length (Bytes)	Data				CRC 16	
			Data of Address 292 MSB	Data of Address 292 LSB	Data of Address 293 MSB	Data of Address 293 LSB	LSB	MSB
01	**03**	**04**	**E2**	**40**	**00**	**01**	**0C**	**5F**

Fill the data received into the address respectively, as shown in the table below.

Table 18 Data Analysis

Address	Data Received (Hex)	Data Combined (Hex)	Total Fuel Consumption (Decimal)
292	E240H	0001E240H	123456
293	0001H		

2 APPENDIX TABLE 1 ENGINE STATUS

No.	Content	Range	Description
0	Standby		In this status, delay value does not display.
1	Pre-heat		
2	Fuel Output		In this status, delay value does not display.
3	Crank		
4	Start Interval		
5	Safety On Delay		
6	Start Idle		
7	High Speed Warming Up		
8	Waiting for Loading		In this status, delay value does not display.
9	Normal Running		In this status, delay value does not display.
10	High Speed Cooling		
11	Stop Idle		
12	ETS		
13	Waiting for Stopping		
14	Fail to Stop		In this status, delay value does not display.