

**User Manual
D.I.I.O. Analogue Output
Module (8 Points)
DIIO-AO-A-8**

Specifications, Wiring Diagrams and Modbus Register Addresses

Revision: 1
Revision Date: Oct 2008
Publisher: DoZeener Controls
Document Code: DZC-DIO-08015EM-1

TABLE OF CONTENTS

TABLE OF CONTENTS 2

INTRODUCTION..... 3

DEVICE SCHEMATIC AND IO CONNECTIONS..... 4

 TOP CONNECTIONS: 4

 BOTTOM CONNECTIONS AND INDICATIONS 4

 WIRING DIAGRAMS..... 5

DEVICE SETUP (DIIO SYSTEM PROGRAMMER SETUP PARAMETERS)..... 7

 LOCKS AND DEFAULTS..... 9

 SCALING AND ALARM SETPOINTS..... 9

SPECIFICATIONS 10

MODBUS ADDRESSES 11

 STANDARD REGISTER SET 11

Read Only Registers 11

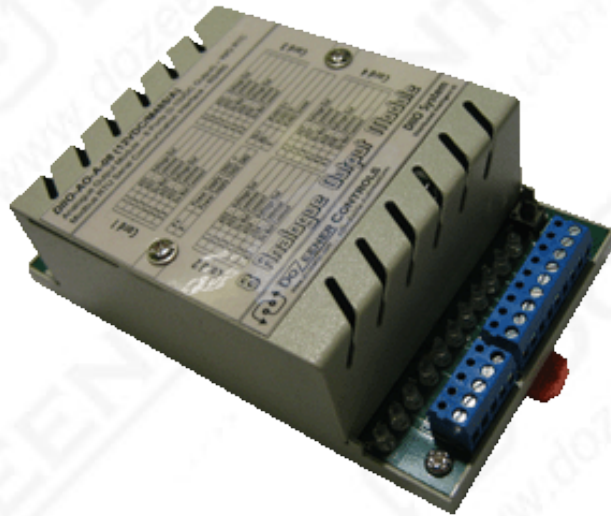
Read/Write Registers..... 12

 EXTENDED REGISTER SET..... 12

Read Only Registers..... 12

Read/Write Registers..... 15

INTRODUCTION



The DIIO-AO-A-08 is part of the D.I.I.O. (Distributed Intelligent I/O) family. These devices are built up with various cards:

- Power Supply Cards (24VDC or 12VDC amongst others)
- Input/Output Cards (Digital Input, Digital Output, Analogue Input, Analogue Output)
- Microprocessor Cards (Various CPUs depending on the function)
- Communications Cards (Modbus Non Isolated RS232 or RS485 and Isolated RS485)
- Auxiliary Power Supply Cards (Isolated 5V or +/- 15V)

These units are pre-assembled and programmed by the manufacturer (DoZeener Controls) according to the customer's specifications. There are also standard modules such as the DIIO-DI-A-8.

The D.I.I.O. family of products can either be used in a stand-alone system, having a network controller (Example: DIIO-Netcon1) to negotiate information across the system or the individual modules forming part of a third party system comprising of PLCs, BMS Controllers, monitoring systems etc.

When ordering this unit the jumper settings on the IO cards must be specified. Below is a breakdown of the part number of the DIIO-AO-A-08.

Part Number:	DIIO-AO-A-8 (12VDC/MI485/A)
Part Number Description:	Device Code (Power Supply/Comms Card/IO Card Configuration)
Power Supply Options:	12VDC: 12VDC Power Supply 24VDC: 24VDC Power Supply
Comms Card Options:	MI485: Isolated RS485 MN485: Non Isolated RS485 MN232: Non Isolated RS232
IO Card Options:	A: (Config. Type A: Non-Isolated 0-10VDC Analogue Outputs) B: (Config Type B: Non-Isolated 0-5VDC Analogue Outputs)

The IO Card Options are the jumper configurations on the IO cards. These can be changed by DoZeener Controls at manufacturing stage, but are not meant to be modified by the user. Opening the module casing will void the warranty of the product.

The digital input statuses are mapped into Modbus registers (Function 03). Appendix A shows a memory map of the Modbus registers.

Apart from the digital input statuses some statistics of the digital inputs are available. These are also shown in Appendix A.

This module as all the others in the DIIO family of products is configurable via the DIIO System Programmer. Please refer to the DIIO System Programmer Manual for more information (Document Code: DZC-DIO-08005EM-1).

DEVICE SCHEMATIC AND IO CONNECTIONS

TOP CONNECTIONS:

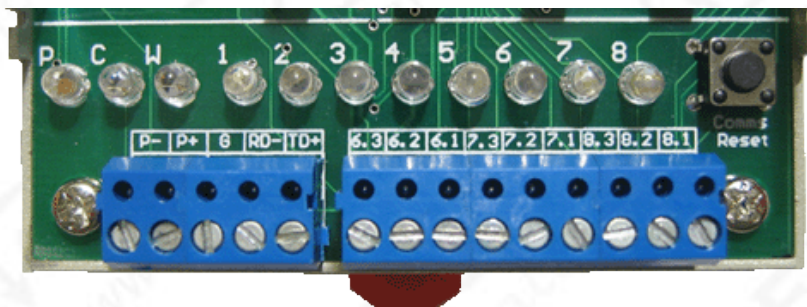


The Top Connections are for digital outputs 1 to 5

The Device Reset button resets the microcontroller. This is particularly useful when a new configuration has been downloaded to the device and needs to be restarted.

When new communication parameters such as baud rate, parity and Modbus address have been downloaded the device must be reset so that it acquires and starts using the new settings.

BOTTOM CONNECTIONS AND INDICATIONS



The bottom connections are for the power supply, communications and inputs 6 to 8.

Also on this side are indications for the following

- P:** Power Supply ON
- C:** Communication activity. Flashes when responding to a request.
- W:** Watchdog. Indicates the unit is healthy
- 1-8:** Input Statuses 1 to 8

The Comms Reset button should be used to reset the unit to default communication setting. When the unit is powered up while holding the button in the depressed position the following default settings are loaded:

Baud Rate: 9600

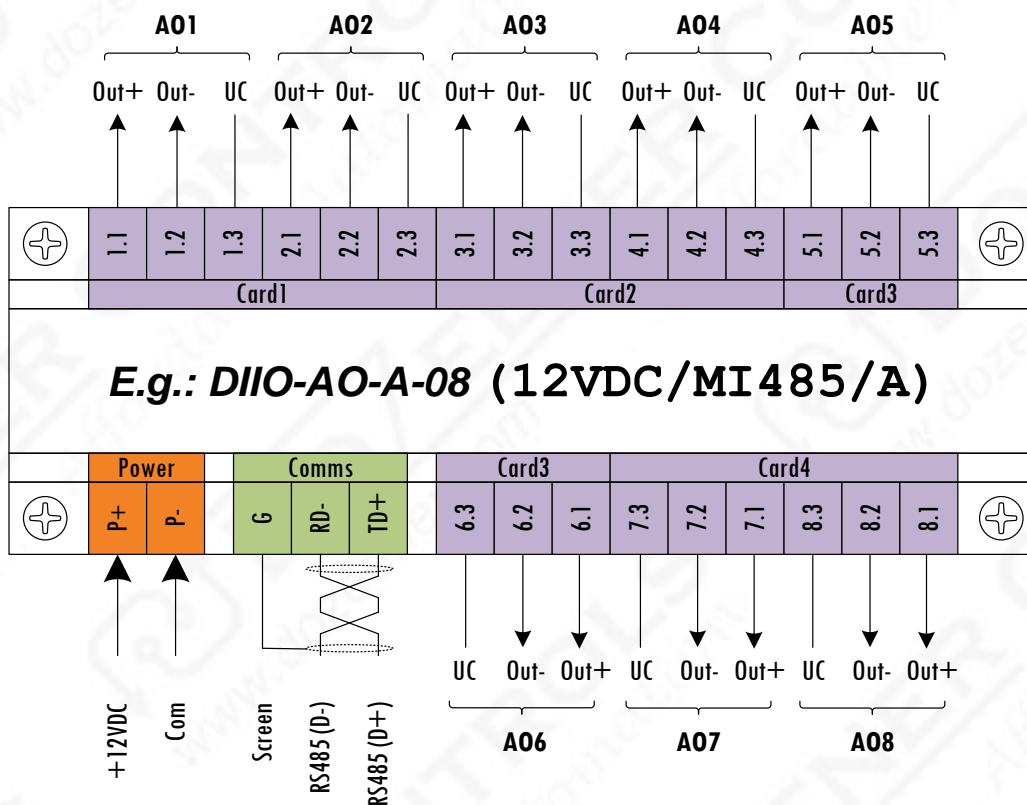
Parity: None

Modbus Address: 1

Stop bits is set to 1 and data bits to 8. These are not configurable

WIRING DIAGRAMS

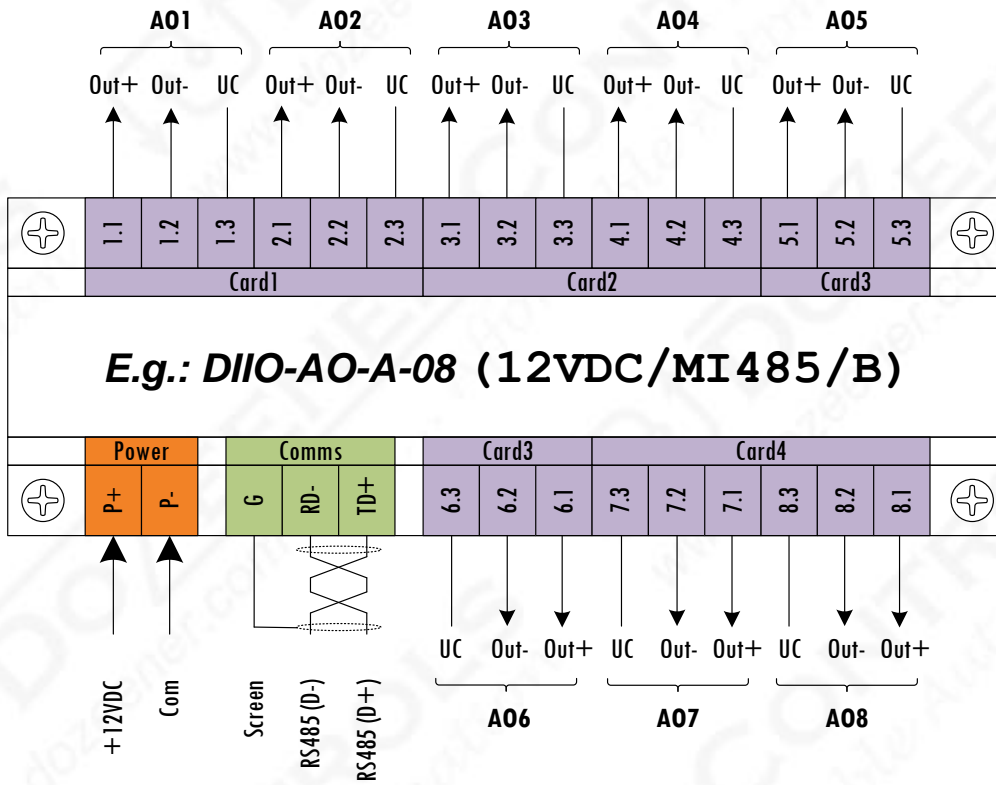
Option A: 0-10VDC Analogue Output



E.g.: DIIO-AO-A-08 (12VDC/MI485/A)

UC = Not Connected

Option B: 0-5VDC Analogue Output



E.g.: DIIO-AO-A-08 (12VDC/MI485/B)

UC = Not Connected

DEVICE SETUP (DIIO SYSTEM PROGRAMMER SETUP PARAMETERS)

The following parameters can be setup for the DIIO-AO-A-08:

The following table shows the parameters as displayed in the DIIO System Programmer:

DIIO-AO-A-08: 8 Analogue Outputs, No RTC				
Device Parameters				
No	Description	Range (From)	Range (To)	Default Value
1	Lock for Register 11 - Control for AO1 (0 = Unlocked \ 1 = Locked)	0	1	0
2	Lock for Register 12 - Control for AO2 (0 = Unlocked \ 1 = Locked)	0	1	0
3	Lock for Register 13 - Control for AO3 (0 = Unlocked \ 1 = Locked)	0	1	0
4	Lock for Register 14 - Control for AO4 (0 = Unlocked \ 1 = Locked)	0	1	0
5	Lock for Register 15 - Control for AO5 (0 = Unlocked \ 1 = Locked)	0	1	0
6	Lock for Register 16 - Control for AO6 (0 = Unlocked \ 1 = Locked)	0	1	0
7	Lock for Register 17 - Control for AO7 (0 = Unlocked \ 1 = Locked)	0	1	0
8	Lock for Register 18 - Control for AO8 (0 = Unlocked \ 1 = Locked)	0	1	0
9	Default for Register 11 - Control for AO1	-16300	16300	0
10	Default for Register 12 - Control for AO2	-16300	16300	0
11	Default for Register 13 - Control for AO3	-16300	16300	0
12	Default for Register 14 - Control for AO4	-16300	16300	0
13	Default for Register 15 - Control for AO5	-16300	16300	0
14	Default for Register 16 - Control for AO6	-16300	16300	0
15	Default for Register 17 - Control for AO7	-16300	16300	0
16	Default for Register 18 - Control for AO8	-16300	16300	0
17	Analogue Output 1 - Raw Value - Low	0	4096	0
18	Analogue Output 1 - Raw Value - High	0	4096	1024
19	Analogue Output 1 - EU Value - Low	-16300	16300	0
20	Analogue Output 1 - EU Value - High	-16300	16300	5000
21	Analogue Output 1 - EU Alarm Limit - Low Low	-16300	16300	500
22	Analogue Output 1 - EU Alarm Limit - Low	-16300	16300	1000
23	Analogue Output 1 - EU Alarm Limit - High	-16300	16300	4000
24	Analogue Output 1 - EU Alarm Limit - High High	-16300	16300	4500
25	Analogue Output 2 - Raw Value - Low	0	1024	0
26	Analogue Output 2 - Raw Value - High	0	1024	1024
27	Analogue Output 2 - EU Value - Low	-16300	16300	0
28	Analogue Output 2 - EU Value - High	-16300	16300	5000
29	Analogue Output 2 - EU Alarm Limit - Low Low	-16300	16300	500
30	Analogue Output 2 - EU Alarm Limit - Low	-16300	16300	1000
31	Analogue Output 2 - EU Alarm Limit - High	-16300	16300	4000
32	Analogue Output 2 - EU Alarm Limit - High High	-16300	16300	4500
33	Analogue Output 3 - Raw Value - Low	0	1024	0
34	Analogue Output 3 - Raw Value - High	0	1024	1024

DIIO-AO-A-08: 8 Analogue Outputs, No RTC

Device Parameters

No	Description	Range (From)	Range (To)	Default Value
35	Analogue Output 3 - EU Value - Low	-16300	16300	0
36	Analogue Output 3 - EU Value - High	-16300	16300	5000
37	Analogue Output 3 - EU Alarm Limit - Low Low	-16300	16300	500
38	Analogue Output 3 - EU Alarm Limit - Low	-16300	16300	1000
39	Analogue Output 3 - EU Alarm Limit - High	-16300	16300	4000
40	Analogue Output 3 - EU Alarm Limit - High High	-16300	16300	4500
41	Analogue Output 4 - Raw Value - Low	0	1024	0
42	Analogue Output 4 - Raw Value - High	0	1024	1024
43	Analogue Output 4 - EU Value - Low	-16300	16300	0
44	Analogue Output 4 - EU Value - High	-16300	16300	5000
45	Analogue Output 4 - EU Alarm Limit - Low Low	-16300	16300	500
46	Analogue Output 4 - EU Alarm Limit - Low	-16300	16300	1000
47	Analogue Output 4 - EU Alarm Limit - High	-16300	16300	4000
48	Analogue Output 4 - EU Alarm Limit - High High	-16300	16300	4500
49	Analogue Output 5 - Raw Value - Low	0	1024	0
50	Analogue Output 5 - Raw Value - High	0	1024	1024
51	Analogue Output 5 - EU Value - Low	-16300	16300	0
52	Analogue Output 5 - EU Value - High	-16300	16300	5000
53	Analogue Output 5 - EU Alarm Limit - Low Low	-16300	16300	500
54	Analogue Output 5 - EU Alarm Limit - Low	-16300	16300	1000
55	Analogue Output 5 - EU Alarm Limit - High	-16300	16300	4000
56	Analogue Output 5 - EU Alarm Limit - High High	-16300	16300	4500
57	Analogue Output 6 - Raw Value - Low	0	1024	0
58	Analogue Output 6 - Raw Value - High	0	1024	1024
59	Analogue Output 6 - EU Value - Low	-16300	16300	0
60	Analogue Output 6 - EU Value - High	-16300	16300	5000
61	Analogue Output 6 - EU Alarm Limit - Low Low	-16300	16300	500
62	Analogue Output 6 - EU Alarm Limit - Low	-16300	16300	1000
63	Analogue Output 6 - EU Alarm Limit - High	-16300	16300	4000
64	Analogue Output 6 - EU Alarm Limit - High High	-16300	16300	4500
65	Analogue Output 7 - Raw Value - Low	0	1024	0
66	Analogue Output 7 - Raw Value - High	0	1024	1024
67	Analogue Output 7 - EU Value - Low	-16300	16300	0
68	Analogue Output 7 - EU Value - High	-16300	16300	5000
69	Analogue Output 7 - EU Alarm Limit - Low Low	-16300	16300	500
70	Analogue Output 7 - EU Alarm Limit - Low	-16300	16300	1000
71	Analogue Output 7 - EU Alarm Limit - High	-16300	16300	4000
72	Analogue Output 7 - EU Alarm Limit - High High	-16300	16300	4500
73	Analogue Output 8 - Raw Value - Low	0	1024	0
74	Analogue Output 8 - Raw Value - High	0	1024	1024
75	Analogue Output 8 - EU Value - Low	-16300	16300	0
76	Analogue Output 8 - EU Value - High	-16300	16300	5000
77	Analogue Output 8 - EU Alarm Limit - Low Low	-16300	16300	500
78	Analogue Output 8 - EU Alarm Limit - Low	-16300	16300	1000
79	Analogue Output 8 - EU Alarm Limit - High	-16300	16300	4000
80	Analogue Output 8 - EU Alarm Limit - High High	-16300	16300	4500

LOCKS AND DEFAULTS

As standard on all DIIO Devices, the writable registers can be locked so that they cannot be changed by the user or the network controller. When a lock is enabled the register will become read only. A default value can be assigned when a lock is enabled.

Items 1 to 8 are locks for control registers of Analogue Outputs 1 to 8. Items 9 to 16 are default values for the analogue output setpoints, if the locks are enabled. The analogue output control registers correspond to the EU values.

SCALING AND ALARM SETPOINTS

Items 17 to 80 are the scaling parameters and alarm setpoints.

Considering items 17 to 24 which are the scaling parameters and alarm setpoints of AO 1:

No	Description	Range (From)	Range (To)	Value
17	Analogue Output 1 - Raw Value - Low	0	4096	0
18	Analogue Output 1 - Raw Value - High	0	4096	1024
19	Analogue Output 1 - EU Value - Low	-16300	16300	0
20	Analogue Output 1 - EU Value - High	-16300	16300	5000
21	Analogue Output 1 - EU Alarm Limit - Low Low	-16300	16300	500
22	Analogue Output 1 - EU Alarm Limit - Low	-16300	16300	1000
23	Analogue Output 1 - EU Alarm Limit - High	-16300	16300	4000
24	Analogue Output 1 - EU Alarm Limit - High High	-16300	16300	4500

Items 17 and 18 are the maximum and minimum raw values of the physical input. This model of analogue output device has a 12 bit digital to analogue converter, therefore the maximum raw value is $2^{12} = 4096$.

Items 19 and 20 are the maximum and minimum EU values. If the 0-10V input represents a valve position from 0 – 100% the max and min EU values must be set to 100 and 0 consecutively, or 1000 to 0 and considering the unit values as one decimal point.

Example: If the physical output is a 0-10VDC representing a valve position 0 to 100%, the following values for the raw and EU values must be set:

Raw Value Low = 0

Raw Value High = 4096

EU Value Low = 0

EU Value High = 100

High High, High, Low and Low Low Alarm limits can be set for each analogue output. The values in items 21 to 24 determine when the alarms are set.

SPECIFICATIONS

- Electrical:** 0-5VDC or 0-10VDC Non Isolated Outputs, 12Bit (4096 Steps)
Power Supply 12VDC to 30VDC *
- Comms:** RS232 or RS485, Isolated or Non Isolated *
Modbus RTU Protocol, Baud: 9600-38400, Parity: None/Odd/Even/Mark/Space
Configurable Modbus Address via software
- Hardware:** Removable Plug-in Terminals. Wire Connection from 28 to 16 AWG (1.5mm²)
DIN Rail Mounted Metal Enclosure
Push Buttons for Communication Parameters Reset and Device Reset
Plug In Card Internal Configuration. Inputs paired in two channels per card.
Separate Comms Card, Power Supply and IO Cards.
- Software:** Communication parameters are configured via windows based software.

* Different Part Numbers have to be used for the various configurations

MODBUS ADDRESSES

STANDARD REGISTER SET

READ ONLY REGISTERS

Register Name	Modbus Address	Description	Type
ScaIAO01	40001	Analogue Output Scaled Value 1	Register
ScaIAO02	40002	Analogue Output Scaled Value 2	Register
ScaIAO03	40003	Analogue Output Scaled Value 3	Register
ScaIAO04	40004	Analogue Output Scaled Value 4	Register
ScaIAO05	40005	Analogue Output Scaled Value 5	Register
ScaIAO06	40006	Analogue Output Scaled Value 6	Register
ScaIAO07	40007	Analogue Output Scaled Value 7	Register
ScaIAO08	40008	Analogue Output Scaled Value 8	Register
LoAlmA01	40009:00	AO 1 - Current Alarm - Lo	Bit
HiAlmA01	40009:01	AO 1 - Current Alarm - Hi	Bit
HSAlmA01	40009:02	AO 1 - Current Alarm - Input Out of High Scale	Bit
LSAlmA01	40009:03	AO 1 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA02	40009:04	AO 2 - Current Alarm - Lo	Bit
HiAlmA02	40009:05	AO 2 - Current Alarm - Hi	Bit
HSAlmA02	40009:06	AO 2 - Current Alarm - Input Out of High Scale	Bit
LSAlmA02	40009:07	AO 2 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA03	40009:08	AO 3 - Current Alarm - Lo	Bit
HiAlmA03	40009:09	AO 3 - Current Alarm - Hi	Bit
HSAlmA03	40009:10	AO 3 - Current Alarm - Input Out of High Scale	Bit
LSAlmA03	40009:11	AO 3 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA04	40009:12	AO 4 - Current Alarm - Lo	Bit
HiAlmA04	40009:13	AO 4 - Current Alarm - Hi	Bit
HSAlmA04	40009:14	AO 4 - Current Alarm - Input Out of High Scale	Bit
LSAlmA04	40009:15	AO 4 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA05	40010:00	AO 5 - Current Alarm - Lo	Bit
HiAlmA05	40010:01	AO 5 - Current Alarm - Hi	Bit
HSAlmA05	40010:02	AO 5 - Current Alarm - Input Out of High Scale	Bit
LSAlmA05	40010:03	AO 5 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA06	40010:04	AO 6 - Current Alarm - Lo	Bit
HiAlmA06	40010:05	AO 6 - Current Alarm - Hi	Bit
HSAlmA06	40010:06	AO 6 - Current Alarm - Input Out of High Scale	Bit
LSAlmA06	40010:07	AO 6 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA07	40010:08	AO 7 - Current Alarm - Lo	Bit
HiAlmA07	40010:09	AO 7 - Current Alarm - Hi	Bit
HSAlmA07	40010:10	AO 7 - Current Alarm - Input Out of High Scale	Bit
LSAlmA07	40010:11	AO 7 - Current Alarm - Input Out of Low Scale	Bit
LoAlmA08	40010:12	AO 8 - Current Alarm - Lo	Bit
HiAlmA08	40010:13	AO 8 - Current Alarm - Hi	Bit
HSAlmA08	40010:14	AO 8 - Current Alarm - Input Out of High Scale	Bit
LSAlmA08	40010:15	AO 8 - Current Alarm - Input Out of Low Scale	Bit

READ/WRITE REGISTERS

Register Name	Modbus Address	Description	Type
CntAO01	40011	Analogue Output Control 1	Register
CntAO02	40012	Analogue Output Control 2	Register
CntAO03	40013	Analogue Output Control 3	Register
CntAO04	40014	Analogue Output Control 4	Register
CntAO05	40015	Analogue Output Control 5	Register
CntAO06	40016	Analogue Output Control 6	Register
CntAO07	40017	Analogue Output Control 7	Register
CntAO08	40018	Analogue Output Control 8	Register
Unused	40019	Unused	Register
Unused	40020	Unused	Register

EXTENDED REGISTER SET

READ ONLY REGISTERS

Register Name	Modbus Address	Description	Type
AlmLLAO2	40021:00	AO 2 - Current Alarm - Lo Lo	Bit
AlmLAO2	40021:01	AO 2 - Current Alarm - Lo	Bit
AlmHAO2	40021:02	AO 2 - Current Alarm - Hi	Bit
AlmHHAO2	40021:03	AO 2 - Current Alarm - Hi Hi	Bit
AlmHSAO2	40021:04	AO 2 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO2	40021:05	AO 2 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO2	40021:06	AO 2 - Current Alarm - Input Out of Scale	Bit
AlmGnAO2	40021:07	AO 2 - Current Alarm - General	Bit
AlmLLAO1	40021:08	AO 1 - Current Alarm - Lo Lo	Bit
AlmLAO1	40021:09	AO 1 - Current Alarm - Lo	Bit
AlmHAO1	40021:10	AO 1 - Current Alarm - Hi	Bit
AlmHHAO1	40021:11	AO 1 - Current Alarm - Hi Hi	Bit
AlmHSAO1	40021:12	AO 1 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO1	40021:13	AO 1 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO1	40021:14	AO 1 - Current Alarm - Input Out of Scale	Bit
AlmGnAO1	40021:15	AO 1 - Current Alarm - General	Bit
AlmLLAO4	40022:00	AO 4 - Current Alarm - Lo Lo	Bit
AlmLAO4	40022:01	AO 4 - Current Alarm - Lo	Bit
AlmHAO4	40022:02	AO 4 - Current Alarm - Hi	Bit
AlmHHAO4	40022:03	AO 4 - Current Alarm - Hi Hi	Bit
AlmHSAO4	40022:04	AO 4 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO4	40022:05	AO 4 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO4	40022:06	AO 4 - Current Alarm - Input Out of Scale	Bit
AlmGnAO4	40022:07	AO 4 - Current Alarm - General	Bit
AlmLLAO3	40022:08	AO 3 - Current Alarm - Lo Lo	Bit
AlmLAO3	40022:09	AO 3 - Current Alarm - Lo	Bit
AlmHAO3	40022:10	AO 3 - Current Alarm - Hi	Bit

Register Name	Modbus Address	Description	Type
AlmHHAO3	40022:11	AO 3 - Current Alarm - Hi Hi	Bit
AlmHSAO3	40022:12	AO 3 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO3	40022:13	AO 3 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO3	40022:14	AO 3 - Current Alarm - Input Out of Scale	Bit
AlmGnAO3	40022:15	AO 3 - Current Alarm - General	Bit
AlmLLAO6	40023:00	AO 6 - Current Alarm - Lo Lo	Bit
AlmLAO6	40023:01	AO 6 - Current Alarm - Lo	Bit
AlmHAO6	40023:02	AO 6 - Current Alarm - Hi	Bit
AlmHHAO6	40023:03	AO 6 - Current Alarm - Hi Hi	Bit
AlmHSAO6	40023:04	AO 6 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO6	40023:05	AO 6 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO6	40023:06	AO 6 - Current Alarm - Input Out of Scale	Bit
AlmGnAO6	40023:07	AO 6 - Current Alarm - General	Bit
AlmLLAO5	40023:08	AO 5 - Current Alarm - Lo Lo	Bit
AlmLAO5	40023:09	AO 5 - Current Alarm - Lo	Bit
AlmHAO5	40023:10	AO 5 - Current Alarm - Hi	Bit
AlmHHAO5	40023:11	AO 5 - Current Alarm - Hi Hi	Bit
AlmHSAO5	40023:12	AO 5 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO5	40023:13	AO 5 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO5	40023:14	AO 5 - Current Alarm - Input Out of Scale	Bit
AlmGnAO5	40023:15	AO 5 - Current Alarm - General	Bit
AlmLLAO8	40024:00	AO 8 - Current Alarm - Lo Lo	Bit
AlmLAO8	40024:01	AO 8 - Current Alarm - Lo	Bit
AlmHAO8	40024:02	AO 8 - Current Alarm - Hi	Bit
AlmHHAO8	40024:03	AO 8 - Current Alarm - Hi Hi	Bit
AlmHSAO8	40024:04	AO 8 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO8	40024:05	AO 8 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO8	40024:06	AO 8 - Current Alarm - Input Out of Scale	Bit
AlmGnAO8	40024:07	AO 8 - Current Alarm - General	Bit
AlmLLAO7	40024:08	AO 7 - Current Alarm - Lo Lo	Bit
AlmLAO7	40024:09	AO 7 - Current Alarm - Lo	Bit
AlmHAO7	40024:10	AO 7 - Current Alarm - Hi	Bit
AlmHHAO7	40024:11	AO 7 - Current Alarm - Hi Hi	Bit
AlmHSAO7	40024:12	AO 7 - Current Alarm - Input Out of High Scale	Bit
AlmLSAO7	40024:13	AO 7 - Current Alarm - Input Out of Low Scale	Bit
AlmOSAO7	40024:14	AO 7 - Current Alarm - Input Out of Scale	Bit
AlmGnAO7	40024:15	AO 7 - Current Alarm - General	Bit
OLmLLAO1	40025	Analogue Output 1 - Alarm Limit - Low Low	Register
OLmLAO1	40026	Analogue Output 1 - Alarm Limit - Low	Register
OLmHAO1	40027	Analogue Output 1 - Alarm Limit - High	Register
OLmHHAO1	40028	Analogue Output 1 - Alarm Limit - High High	Register
OCnLSAO1	40029	Analogue Output 1 - Output Control Low Scale	Register
OCnHSAO1	40030	Analogue Output 1 - Output Control High Scale	Register
OLSAO1	40031	Analogue Output 1 - Output Low Scale	Register
OHSAO1	40032	Analogue Output 1 - Output High Scale	Register
OLmLLAO2	40033	Analogue Output 2 - Alarm Limit - Low Low	Register
OLmLAO2	40034	Analogue Output 2 - Alarm Limit - Low	Register

Register Name	Modbus Address	Description	Type
OLmHAO2	40035	Analogue Output 2 - Alarm Limit - High	Register
OLmHHAO2	40036	Analogue Output 2 - Alarm Limit - High High	Register
OCnLSAO2	40037	Analogue Output 2 - Output Control Low Scale	Register
OCnHSAO2	40038	Analogue Output 2 - Output Control High Scale	Register
OLSAO2	40039	Analogue Output 2 - Output Low Scale	Register
OHSAO2	40040	Analogue Output 2 - Output High Scale	Register
OLmLLAO3	40041	Analogue Output 3 - Alarm Limit - Low Low	Register
OLmLAO3	40042	Analogue Output 3 - Alarm Limit - Low	Register
OLmHAO3	40043	Analogue Output 3 - Alarm Limit - High	Register
OLmHHAO3	40044	Analogue Output 3 - Alarm Limit - High High	Register
OCnLSAO3	40045	Analogue Output 3 - Output Control Low Scale	Register
OCnHSAO3	40046	Analogue Output 3 - Output Control High Scale	Register
OLSAO3	40047	Analogue Output 3 - Output Low Scale	Register
OHSAO3	40048	Analogue Output 3 - Output High Scale	Register
OLmLLAO4	40049	Analogue Output 4 - Alarm Limit - Low Low	Register
OLmLAO4	40050	Analogue Output 4 - Alarm Limit - Low	Register
OLmHAO4	40051	Analogue Output 4 - Alarm Limit - High	Register
OLmHHAO4	40052	Analogue Output 4 - Alarm Limit - High High	Register
OCnLSAO4	40053	Analogue Output 4 - Output Control Low Scale	Register
OCnHSAO4	40054	Analogue Output 4 - Output Control High Scale	Register
OLSAO4	40055	Analogue Output 4 - Output Low Scale	Register
OHSAO4	40056	Analogue Output 4 - Output High Scale	Register
OLmLLAO5	40057	Analogue Output 5 - Alarm Limit - Low Low	Register
OLmLAO5	40058	Analogue Output 5 - Alarm Limit - Low	Register
OLmHAO5	40059	Analogue Output 5 - Alarm Limit - High	Register
OLmHHAO5	40060	Analogue Output 5 - Alarm Limit - High High	Register
OCnLSAO5	40061	Analogue Output 5 - Output Control Low Scale	Register
OCnHSAO5	40062	Analogue Output 5 - Output Control High Scale	Register
OLSAO5	40063	Analogue Output 5 - Output Low Scale	Register
OHSAO5	40064	Analogue Output 5 - Output High Scale	Register
OLmLLAO6	40065	Analogue Output 6 - Alarm Limit - Low Low	Register
OLmLAO6	40066	Analogue Output 6 - Alarm Limit - Low	Register
OLmHAO6	40067	Analogue Output 6 - Alarm Limit - High	Register
OLmHHAO6	40068	Analogue Output 6 - Alarm Limit - High High	Register
OCnLSAO6	40069	Analogue Output 6 - Output Control Low Scale	Register
OCnHSAO6	40070	Analogue Output 6 - Output Control High Scale	Register
OLSAO6	40071	Analogue Output 6 - Output Low Scale	Register
OHSAO6	40072	Analogue Output 6 - Output High Scale	Register
OLmLLAO7	40073	Analogue Output 7 - Alarm Limit - Low Low	Register
OLmLAO7	40074	Analogue Output 7 - Alarm Limit - Low	Register
OLmHAO7	40075	Analogue Output 7 - Alarm Limit - High	Register
OLmHHAO7	40076	Analogue Output 7 - Alarm Limit - High High	Register
OCnLSAO7	40077	Analogue Output 7 - Output Control Low Scale	Register
OCnHSAO7	40078	Analogue Output 7 - Output Control High Scale	Register
OLSAO7	40079	Analogue Output 7 - Output Low Scale	Register
OHSAO7	40080	Analogue Output 7 - Output High Scale	Register
OLmLLAO8	40081	Analogue Output 8 - Alarm Limit - Low Low	Register
OLmLAO8	40082	Analogue Output 8 - Alarm Limit - Low	Register
OLmHAO8	40083	Analogue Output 8 - Alarm Limit - High	Register
OLmHHAO8	40084	Analogue Output 8 - Alarm Limit - High High	Register

Register Name	Modbus Address	Description	Type
OCnLSAO8	40085	Analogue Output 8 - Output Control Low Scale	Register
OCnHSAO8	40086	Analogue Output 8 - Output Control High Scale	Register
OLSAO8	40087	Analogue Output 8 - Output Low Scale	Register
OHSAO8	40088	Analogue Output 8 - Output High Scale	Register

READ/WRITE REGISTERS

Register Name	Modbus Address	Description	Type
None			
