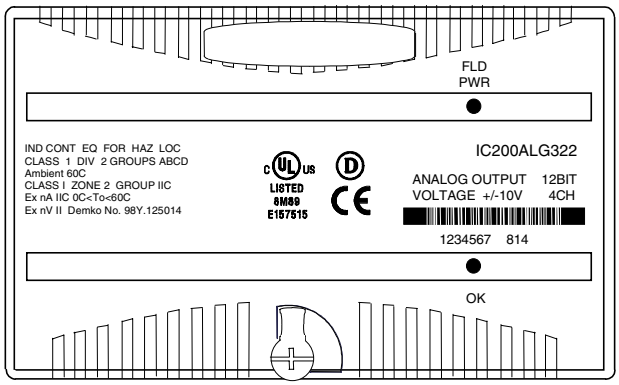
IC200ALG322
Analog Output Module, 12 Bit Voltage -10 to +10VDC 4 Channels

Analog output module IC200ALG322 provides four analog voltage outputs. The output range is -10 to +10VDC



An external 24V power supply is required for the outputs.

Intelligent processing for this module is performed by the CPU or Network Interface Unit. The module receives 4 words of analog output data.

LED Indicators

The green FLD PWR LED indicates the presence of user-side power for the analog field-side circuits.

The green OK LED is on when backplane power is present to the module.

Diagnostics

The module reports a Loss of User Side Power fault for field-side circuits.

Configuration Parameters

The module is easily set up with a jumper for the outputs to either hold their last states or default to 0V if backplane power or communications are interrupted or the PLC is stopped. External user power must remain uninterrupted.

Outputs remain in their default or last state until the module receives different output data from the backplane, or until field power is removed.

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Module Specifications

Module Characteristics	
Channels	4 single-ended, one group
Module ID	FFFF9040
Isolation: User input to logic (optical) and to frame ground Group to group Channel to channel	 250VAC continuous; 1500VAC for 1 minute Not applicable None
LED indicators	FLD PWR LED indicates field power is present OK LED indicates backplane power is present
Backplane current consumption	5V output: 50mA maximum
Thermal derating	None
Configuration parameters	Output default
Diagnostics	Loss of User Side Power
External Power Supply	
Recommended range	+18 to +30VDC (including ripple)
Current consumption at recommended range	160mA max.(including load current)
12V operation range	9.6 to 15VDC, 12VDC nominal (including ripple)
Current consumption at 12V range	210mA max.(including load current)
Output Characteristics	
Output voltage	+/-10.24VDC
Load characteristics: Resistive Capacitive	 5000 Ohms minimum 1.0µF maximum
Accuracy at 25 degrees C** Accuracy at 0 to 60 degrees C	+/- 0.3% typ. of full scale, +/- 0.5% max. of full scale +/-1% maximum of full scale
Resolution	5mV = 16 counts
Update rate per module	0.3ms maximum
Channel-to-channel crosstalk rejection	70dB minimum
Output default	Hold Last State (default), 0 (configurable)

* In the presence of severe RF interference, (IEC 1000-4-3, 10V/m), accuracy may be degraded to +/-1%.

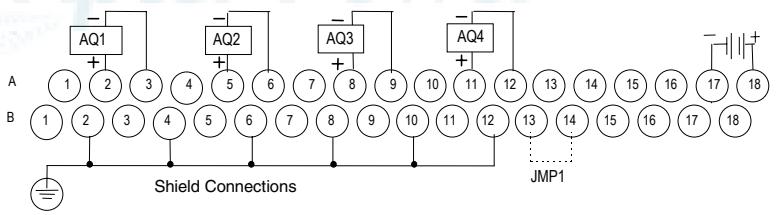
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Field Wiring

Terminal	Connection	Terminal	Connection
A1	No connection	B1	No connection
A2	V OUT 1	B2	Shield Termination Point
A3	RET 1	B3	No connection
A4	No connection	B4	Shield Termination Point
A5	V OUT 2	B5	No connection
A6	RET 2	B6	Shield Termination Point
A7	No connection	B7	No connection
A8	V OUT 3	B8	Shield Termination Point
A9	RET 3	B9	No connection
A10	No connection	B10	Shield Termination Point
A11	V OUT 4	B11	No connection
A12	RET 4	B12	Shield Termination Point
A13	No connection	B13	JMP 1A
A14	No connection	B14	JMP 1B
A15	No connection	B15	No connection
A16	No connection	B16	No connection
A17	Field Return	B17	No connection
A18	Field Power	B18	No connection

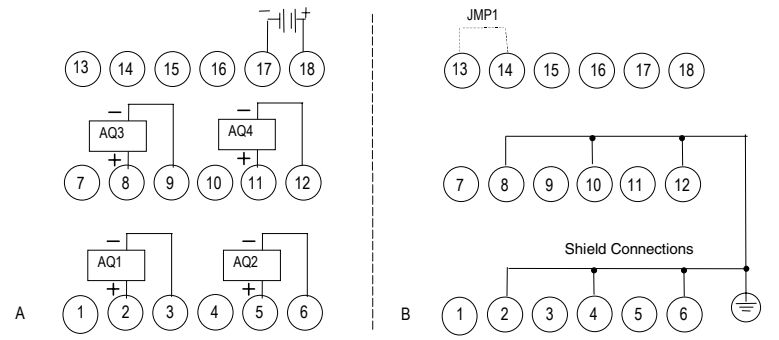
Wiring Connections for Carriers with Two Rows of Terminals

IC200CHS002, 005
IC200CHS012, 015



Wiring Connections for Carriers with Three Rows of Terminals

IC200CHS001, 022, 025
IC200CHS011



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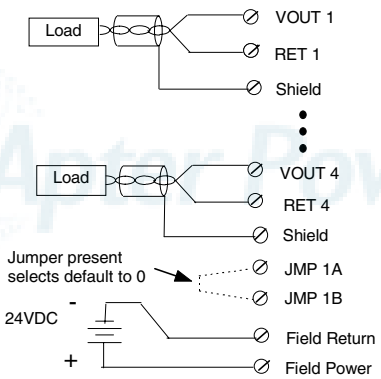
Jumper Selection

A jumper on the carrier can be used to select the output default mode.

If no jumper is installed on pins B13 and B14 outputs hold their last state (the last commanded value from the backplane) if backplane power or communications are interrupted or the PLC is stopped. With a jumper installed, if such conditions occur outputs default to 0 volts. This should only be changed with field power and backplane power removed.

Jumper	Selects
None	Hold Last State
JMP 1	Default to 0

Wiring Example



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Cable Shield Connections

Shielded twisted pair cable is recommended for all of the analog channel connections.
If the module is installed on a Terminal-style I/O Carrier (IC200CHS001, 002, or 005) or a Compact Terminal-style I/O Carrier (IC200CHS022, 025), the cable shield can be connected directly to the carrier per the Field Wiring Table. An Auxiliary I/O Terminal Strip (IC200TBM001, 002, or 005) can also be added to the Terminal-style I/O Carriers to aid in grounding shields. Be sure to ground the Auxiliary I/O Terminal Strip as well if you plan to use it for this purpose.
If the module is installed on a Connector-style I/O Carrier (IC200CHS003), the cable shield can be connected directly to an Interposing Terminal (IC200CHS011, 012, 015). Be sure to ground the Interposing Terminal. It is recommended to use a shielded interposing cable as well between the Interposing Terminal and the Connector Base. A custom shielded cable can be made using the Connector kit (IC200ACC302). In addition, a custom shield braid can be wrapped around standard Interposing Cables (IC200CBL105, 110, 120, 230). If this approach is used be sure to ground the braid.

All cable shield connections should be connected to earth ground and be kept as short as practical. The power cable does not need to be shielded.

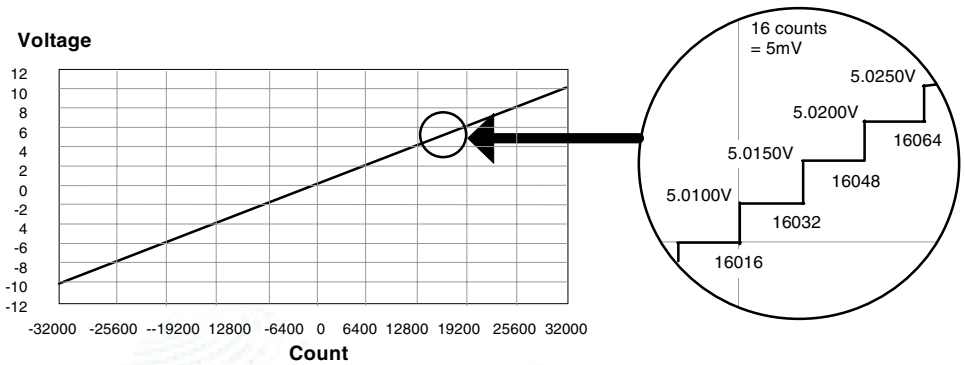
Apter Power

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Scaling

The graphs below show the relationship between the output voltage measured at the field terminals and the data that is output by the module.

Count vs Output Voltage



Voltage can be calculated using the following equation:

Vout = ((analog counts x 20.5) / 65535)

The count value must be a multiple of 16. If the module receives a count value that is not a multiple of 16, it rounds the value down to the closest multiple of 16. For example:

Count	Voltage
16032	5.0150V
16040	5.0150V
16048	5.0200V