

# IOM 200

CAN bus analogue interface

Data sheet

4921240366E



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Tomorrow



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# 1. General information

## 1.1 Applications

AGC-4 Mk II, AGC 150, ASC 150, and AGC 200 use CAN bus to communicate with the IOM 200 series.

Each IOM 220 has two analogue outputs that can be used for control. IOM 230 also has P and Q load sharing outputs.

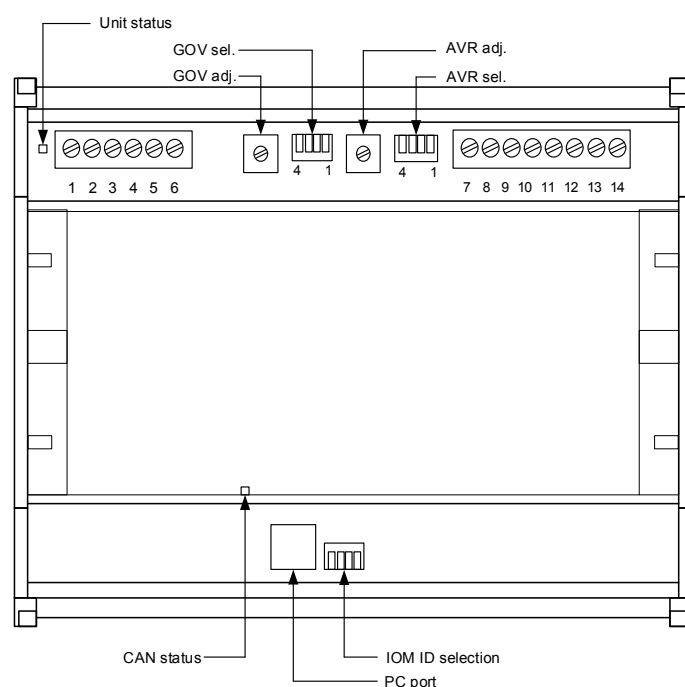
For each analogue output, the signal type (mA, or V DC) and the range can be selected using dip switches. The analogue output V DC signal levels can be adjusted using the potentiometer screws.

| Controller                    | Functions                      | Max. IOM 2xx | IOM ID | Terminals 7-8 | Terminals 9-10 | IOM 230 only Terminals 12-14 |
|-------------------------------|--------------------------------|--------------|--------|---------------|----------------|------------------------------|
| AGC-4 Mk II                   | General purpose<br>PID control | 3            | 0/1/2  | A01           | A02            | -                            |
| AGC 150, ASC 150, AGC 200     | General purpose<br>PID control | 2            | 1/2    | PID           | PID            | -                            |
| AGC-4 Mk II, AGC 150, AGC 200 | Genset regulation              | 1            | 0      | GOV           | AVR            | Q and P load sharing         |

## 1.2 Overview

### IOM 220

- CANbus interface with automatic address selection
- Analogue output/governor interface
  - 0-20 mA
  - $\pm 25$  mA
  - 0-10 V DC (adjustable)
  - $\pm 12$  V DC (adjustable)
- Analogue output/AVR interface
  - 0-20 mA
  - $\pm 25$  mA
  - 0-10 V DC (adjustable)
  - $\pm 12$  V DC (adjustable)
- TTL interface to PC
  - Uses option J5 (RS232 to TTL converter cable)
  - Only for downloading firmware updates
- LEDs for unit status and CAN status
  - 2-coloured LEDs
  - Green: System OK; Red: Fail

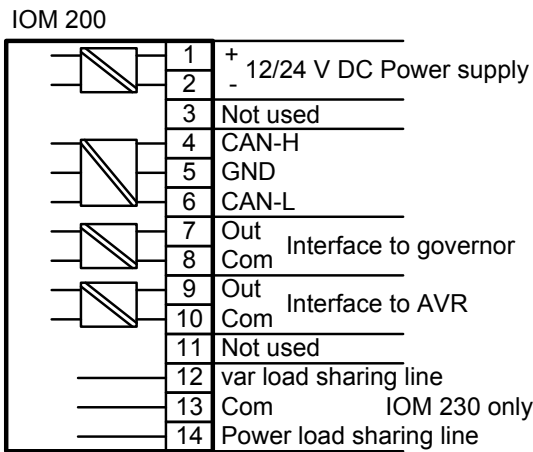


### IOM 230

Same as IOM 220, with additional:

- Analogue Q and P load sharing interface ( -5 ... 0 ... +5 V DC)

1.2.1 Terminals



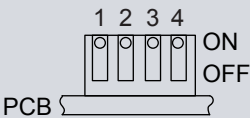
| Terminal | Description   | Comment                            |
|----------|---------------|------------------------------------|
| 1        | +12/24 V DC   | Power supply                       |
| 2        | 0 V DC        |                                    |
| 3        | Not used      |                                    |
| 4        | CAN-H         | CANbus interface to AGC            |
| 5        | CAN-GND       |                                    |
| 6        | CAN-L         |                                    |
| 7        | GOV out       | Analogue output/Governor interface |
| 8        | GOV com       |                                    |
| 9        | AVR out       | Analogue output/AVR interface      |
| 10       | AVR com       |                                    |
| 11       | Not used      |                                    |
| 12       | VAr share out | IOM 230 only: Load sharing lines   |
| 13       | Common        |                                    |
| 14       | P share out   |                                    |

1.2.2 Analogue output DIP switches

|         | Output   | SW 1 | SW 2 | SW 3     | SW 4 |
|---------|----------|------|------|----------|------|
| <br>PCB | ±25 mA   | ON   | OFF  | NOT USED | OFF  |
|         | 0-20 mA  | OFF  | ON   |          | OFF  |
|         | ±12V DC  | ON   | OFF  |          | ON   |
|         | 0-10V DC | OFF  | ON   |          | ON   |

SW 1 and SW 2 cannot have the same position. The output resolution is 1024 steps, regardless of the selected range.

1.2.3 IOM ID DIP switches

|                                                                                  | IOM ID | Switch 1 | Switch 2 | Switch 3 | Switch 4 |
|----------------------------------------------------------------------------------|--------|----------|----------|----------|----------|
|  | ID0    | OFF      | OFF      | OFF      | OFF      |
|                                                                                  | ID1    | ON       | OFF      | OFF      | OFF      |
|                                                                                  | ID2    | OFF      | ON       | OFF      | OFF      |

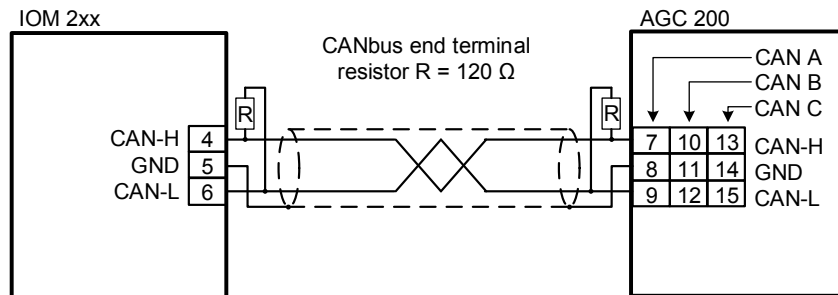
All other combinations = ID0.

## 2. Technical information

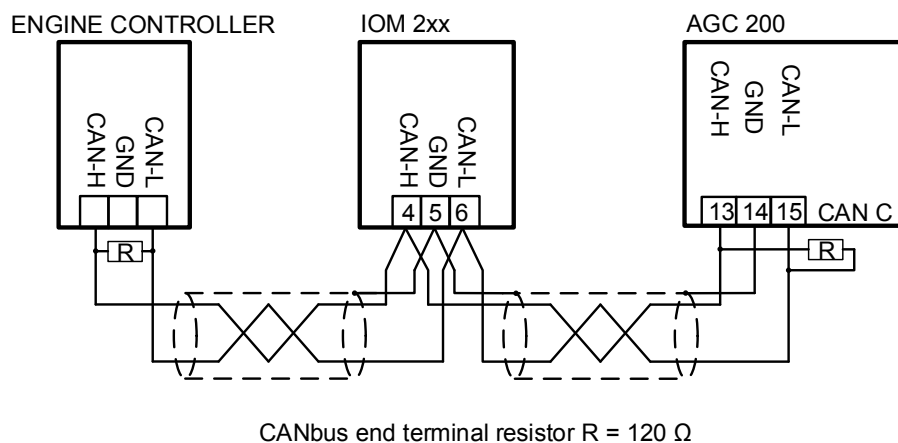
### 2.1 CAN bus connections

The CAN bus connection can be "point-to-point" between an IOM 200 module and an AGC/ASC. Alternatively, the CAN bus connection can be daisy-chained between an AGC/ASC, IOM 200 and another device, for example, an engine controller. In both cases, the cable shield must NOT be connected to ground, but only to the GND terminal of the IOM and AGC/ASC.

#### Point-to-point



#### Multi-drop



For this daisy-chained example, the cable shield must NOT be connected to the engine controller unless it is absolutely certain that the engine controller CAN bus connection is galvanically isolated from the rest of the controller.



#### More information

See the **AGC/ASC Installation instructions** for how to connect the IOM 200 to other controllers.

### 2.2 Technical specifications

#### 2.2.1 Available variants

| Type    | Variant | Description | Item no.      | Note                                                                  |
|---------|---------|-------------|---------------|-----------------------------------------------------------------------|
| IOM 200 | 01      | IOM 220     | 2912890200-01 | Two analogue outputs/GOV and AVR outputs                              |
| IOM 200 | 02      | IOM 230     | 2912890200-02 | Two analogue outputs/GOV, and AVR outputs and P and Q loadshare lines |

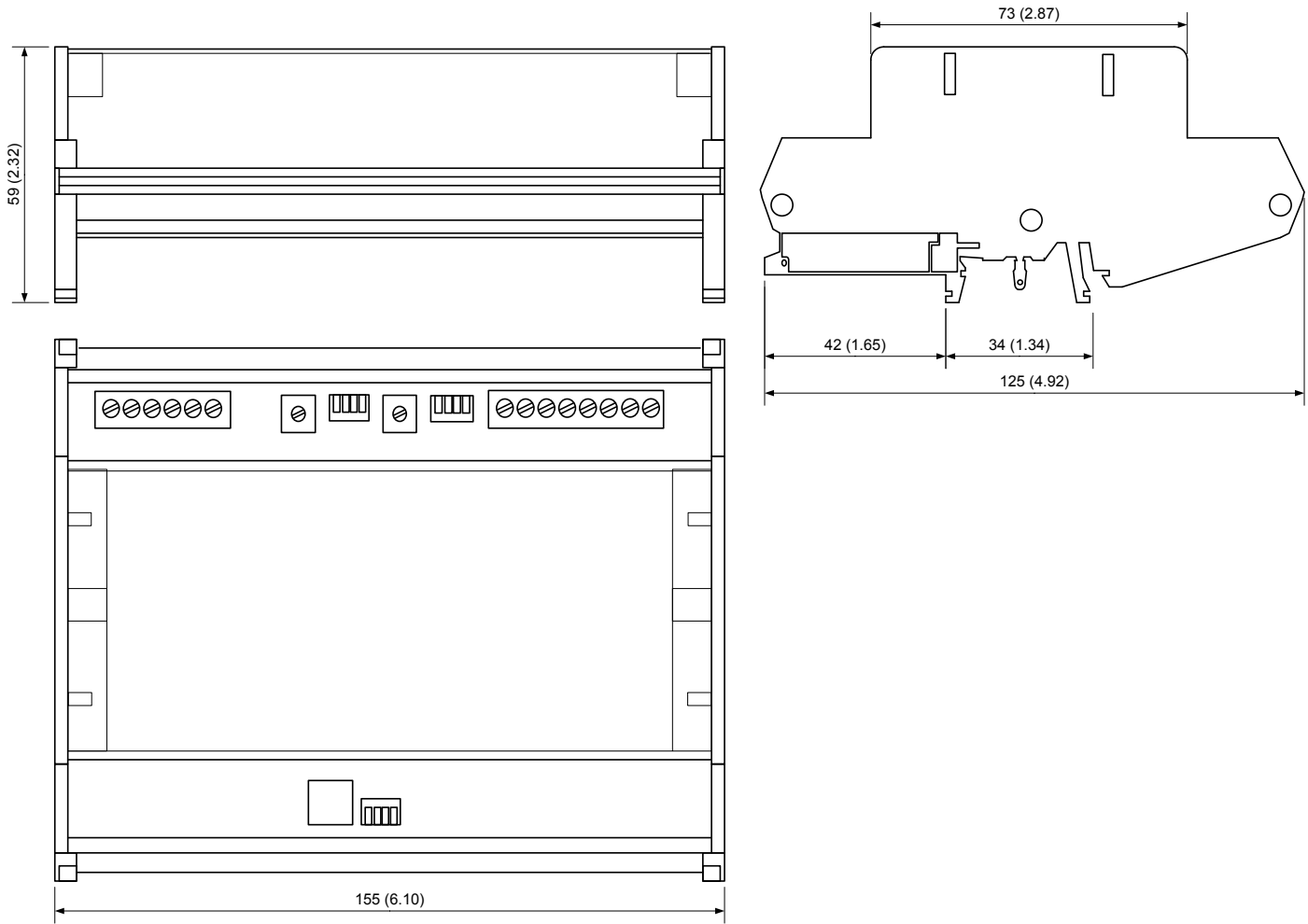
#### 2.2.2 Specifications

|                       |                                            |
|-----------------------|--------------------------------------------|
| Operating temperature | -40...70°C (-40...158°F)<br>UL/cUL Listed: |
|-----------------------|--------------------------------------------|

|                         |                                                                                                                                                                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | Max. surrounding air temperature:<br>55°C (131°F)                                                                                                                                                                                                                |
| Storage temperature     | -40...70°C (-40...158°F)                                                                                                                                                                                                                                         |
| Climate                 | 97% RH to IEC 60068-2-30                                                                                                                                                                                                                                         |
| Aux. supply             | 8.5-36V DC continuously<br>(UL/cUL: 8.5...32.7V DC)<br>Max. 4 W consumption<br><br>The aux. supply input is to be protected by a 2 A slow-blow fuse<br>(UL/cUL listed: AWG 24)                                                                                   |
| Mounting                | DIN rail                                                                                                                                                                                                                                                         |
| Safety                  | To EN 61010-1, installation category (overvoltage category) III, 300V, pollution degree 2                                                                                                                                                                        |
| Protection              | IP20/NEMA type 1 to IEC/EN 60529                                                                                                                                                                                                                                 |
| EMC/CE                  | To EN 61000-6-1/2/3/4<br>IEC 60255-26<br>IEC 60533 power distr. zone<br>IACS UR E10 power distr. zone                                                                                                                                                            |
| Vibration               | 3...13.2 Hz: 2mm <sub>pp</sub><br>13.2...100 Hz: 0.7 g<br>To IEC 60068-2-6<br>To IACS UR E10<br><br>10...60 Hz: 0.15mm <sub>pp</sub><br>60...150 Hz: 1 g<br>To IEC 60255-21-1 Response (class 2)<br><br>10..150 Hz: 2 g<br>To IEC 60255-21-1 Endurance (class 2) |
| Shock                   | 10 g, 11 msec, half sine<br>To IEC 60255-21-2 Response (class 2)<br><br>30 g, 11 msec, half sine<br>To IEC 60255-21-2 Endurance (class 2)<br><br>50 g, 11 msec, half sine<br>To IEC 60068-2-27                                                                   |
| Bump                    | 20 g, 16 msec, half sine<br>to IEC 60255-21-2 (class 2)                                                                                                                                                                                                          |
| Material                | All plastic materials are self-extinguishing according to UL 96 (V1)                                                                                                                                                                                             |
| Connections             | 3.5 mm <sup>2</sup> (13 AWG) multi-stranded service port: TTL, RJ 12                                                                                                                                                                                             |
| Tightening torque (min) | 0.5 Nm (5-7 lb-in)                                                                                                                                                                                                                                               |
| Approvals               | UL/cUL Listed to UL508<br>UL/cUL Recognized to UL2200                                                                                                                                                                                                            |
| UL markings             | Wiring:<br>Use 60/75°C copper conductors only                                                                                                                                                                                                                    |
| Mounting                | For DIN rail mounting inside a cabinet<br>Main disconnect must be provided by installer<br><br>Installation:                                                                                                                                                     |

|        |                                                                     |
|--------|---------------------------------------------------------------------|
|        | To be installed in accordance with the NEC (US) or the CEC (Canada) |
| Weight | 0.3 kg (0.7 lbs)                                                    |

### 2.2.3 Unit dimensions in mm (inches)



## 3. Ordering information

### 3.1 Order specifications

Variants:

| Mandatory information |      |             |
|-----------------------|------|-------------|
| Item no.              | Type | Variant no. |
|                       |      |             |

Example:

| Mandatory information |         |             |
|-----------------------|---------|-------------|
| Item no.              | Type    | Variant no. |
| 2912890200-01         | IOM 220 | 01          |

### 3.2 Disclaimer

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