Datasheet Analog IN/OUT

MUL-211-D-01

Grenton Analog IN/OUT expands the possibilities of the system and ensures support for analog standards 0-10V, 0-5V, 0-20mA and 1-Wire. The module also works as a 1-Wire hub, which reports the number of connected 1-Wire sensors and allows them to be searched for again.



1. Parameters - AnalogOUT

Features:	
Value	Current output value
ScaledValue	Current value multiplied by scalar
Scale	Output value scalar
Ramp	Output value scalar
MinValue	Minimum value which Value can adopt. Attempting to set a lower value will generate an error. Range: 0.0 - 10.0
MaxValue	Maximum value which Value can adopt. Attempting to set a higher value will generate an error. Range: 0.0 - 10.0
Methods:	
SetValue	Sets output value (0.0 - 10.0V)
SetScaledValue	Sets output value taking into account the scalar
SetScale	Sets scalar value
SetRamp	Sets increments for output value
SetMinValue	Sets MinValue
SetMaxValue	Sets MaxValue
HoldValue	Reduces or increases the output value using a ramp specified in the parameter. If the ramp parameter is not specified, the default ramp is used
Switch	Switches output state to an opposite state. If time > 0, after a specified period it restores the previous state. The second parameter (ramp) is optional
SwitchOn	Sets output value to 10.0 (MaxValue). The first parameter is the time of switching (how long it is to be switched for). The second parameter (ramp) is optional
SwitchOff	Sets output value to 0.0 (MinValue). The first parameter is the time of switching (how long it is to be switched for). The second parameter (ramp) is optional
Events:	
OnValueChange	Event from changing the output value (when SetValue is requested)
OnValueLower	Event occurring when the set value is lower than the previous value
OnValueRise	Event occurring when the set value is higher than the previous value
OnOutOfRange	Event occurring with an attempt to exceed the permissible range (MinValue - MaxValue). The set value is cut down to this range
OnSwitchOn	Event occurring when 10.0 (MaxValue) is set at output
OnSwitchOff	Event occurring when 0.0 (MinValue) is set at output

2. Parameters - AnalogIN

Features:	
RawValue	Current input value
Value	Current input value taking into account the scalar
Value%	Current percentage input value of the maximum value (MaxValue characteristic)
Scale	Input scalar - parameter which is used for multiplying the input value during reading
Sensitivity	Minimum change of input state when the OnValueChange, OnValueLower or OnValueRise event is generated
MinValue	Minimum value of the Value characteristic after exceeding which the OnOutOfRange event is generated
MaxValue	Maximum value of the Value characteristic after exceeding which the OnOutOfRange event is generated
Methods:	
SetScale	Sets scalar value (float)
SetSensitivity	Sets input sensitivity value
SetMinValue	Sets MinValue
SetMaxValue	Sets MaxValue
Events:	
OnValueChange	Event resulting from changing input state
OnValueLower	Event occurs when a value lower than the value from the last reading appears at input
OnValueRise	Event occurs when a value higher than the value from the last reading appears at input
OnOutOfRange	Event resulting from exceeding the permissible range (MinValue - MaxValue)
OnSwitchOn	Event occurs when the input value reaches 100% (MaxValue)
OnSwitchOff	Event occurs when the input value reaches 0% (MinValue)
OnInRange	Event occurs when value returns to MinValue - MaxValue range

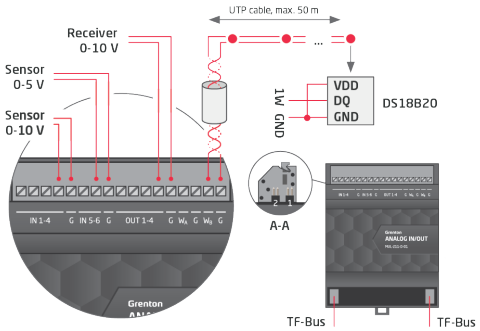
3. Parameters - ONE_WIRE_HUB

Features:	
ConfiguredSensors	Number of the hub's 1-Wire sensors in the project, found during CLU Discovery
ActiveSensors	Number of 1-Wire sensors in the project (ConfiguredSensors) that were detected during the last search
InactiveSensors	Number of 1-Wire sensors in the project (ConfiguredSensors) that were not detected during the last search
ReportedSensors	Number of all 1-Wire sensors detected during the last search, including those not in the project (may exceed ConfiguredSensors)
Methods:	
RefreshSensors	Searches for 1-Wire sensors again
Events:	
OnRefreshCompleted	Event occurring after the 1-Wire sensor search is finished

4. Technical Data

Device power supply	$24V_{dc}$
Maximum power consumption	0.48W
Maximum device current	20mA (for $24V_{dc}$)
Maximum input voltage for IN1-4	$10V_{dc}$
Maximum input voltage for IN5-6	$5V_{dc}$
Maximum output voltage for OUT1-4	$10V_{dc}$
Maximum output current for OUT1-4	10mA
Maximum number of 1-Wire sensors	16
Maximal wire cross section	$1,5mm^2$
Weight	105g
Size [DIN]	4
Fixing	Electrical box, rail DIN-3 / TH 35 / TS 35
Dimensions (H/W/D)	90/72/58mm
Operating temperature range	0 to +45°C

5. Wiring Diagram



IN1-4	0-10V analog inputs
IN5-6	0-5V analog inputs
G	Ground signal
OUT1-4	0-10V analog outputs
W_A	1-Wire input, channel A
W_B	1-Wire input, channel B
A-A1	0-20mA jumper for input IN1
A-A2	0-20mA jumper for input IN2

- For 0-20mA mode of IN1 or IN2 use jumper on A-A1 or A-A2.
- Inputs W_A and W_B support up to 16 1-Wire sensors in total.

6. Warnings and Cautionary Statements

ATTENTION!

- Before proceeding with the assembly, read the installation schematics and full instructions available at www.grenton.com. Failure to follow the guidelines contained in the instructions and other requirements of due care valid as a result of the nature of the equipment (device) may be dangerous to life / health, damage the device or installation to which it is connected, damage other property or violate other applicable regulations. The manufacturer of the device, Grenton Sp. z o. o. does not bear any responsibility for the damage (property and non-property related) resulting from the assembly and / or use of the equipment not in accordance with the instructions and / or due diligence in handling the equipment (device).
- Device power supply, permissible load or other characteristic parameters have to be in accordance with the device specification, described in particular in the "Technical data" section.
- The product is not intended for children and animals.
- If you have technical questions or comments about the device operation, contact Grenton Technical Support.
- Answers to frequently asked questions can be found at: www.support.grenton.com.

DANGER!

- Danger to life caused by electric current!
- The components of the installation (individual devices) are designed to work in a home electrical installation or directly in its vicinity. Incorrect connection or use may cause a fire or electric shock.
- All work related to the installation of the device, in particular works involving interference in the electrical installation, may be performed only by a person with appropriate qualifications or licences.
- When installing the device, make sure that the power supply voltage is disconnected from the circuit in which the device is connected or near which the assembly takes place.

7. CE Marking

The manufacturer declares that the device is in full compliance with the requirements of EU legislation that includes the directives of a new approach appropriate for this equipment. In particular, Grenton Sp. z o. o. declares that the device fulfills the requirements on safety, specified by law, and that it conforms to the national regulations that implement the appropriate directives: The Directive on the electromagnetic compatibility (EMC - 2014/30/UE) and the Directive on the limitation of the use of specific substances in electrical and electronic equipment (RoHS II - 2011/65/UE).

8. Warranty

Warranty available at www.grenton.com/warranty.

9. Manufacturer Contact Details

Grenton Sp. z o.o.
ul. Na Wierzchowinach 3
30-222 Kraków, Poland
www.grenton.com
grenton@grenton.com