Universal Analog Output Module for DIN-Signals Type G 3439 6470

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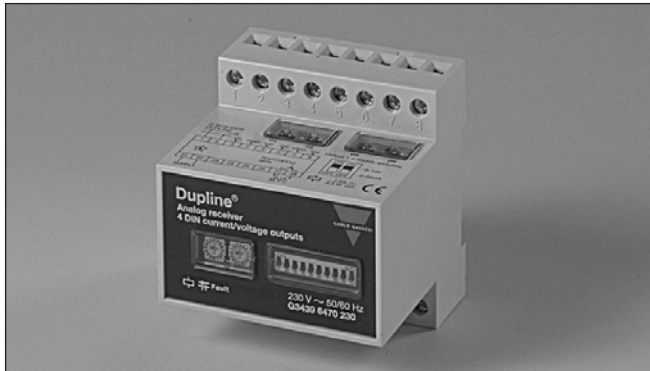
- 4 analog outputs
- Outputs individually configurable for 0-20 mA, 4-20 mA or 0-10 VDC
- Selectable resolution: 1/1999 or 1/255 of full scale
- Selectable dataformat : 8-bit, AnaLink or 3 1/2 digit BCD
- EMC immunity according to EN50082-2 (industrial environment)
- DIN-rail mounting (EN 50022)
- Address-selection through rotary switches
- LED-indication for supply and Dupline® carrier
- LED-indication for invalid switch setting and faulty received data
- Watchdog output for faulty received data
- H4 housing

Product Description

Dupline® 4 output universal analog output module with internal supply. The module receives signals on a digital format from Dupline® and converts them to analog outputs. The output type can be selected as 0-20 mA, 4-20 mA or 0-10 VDC for each output individually making a mix of analog output types on the same module possible. The transmission format on Dupline® can be selected to fit the output module into existing installations, or simply to use the most suitable combination of resolution, signalling capacity and speed. The formats are: 8-bit binary, AnaLink and 3 1/2 digit BCD (with or without multiplexing).

Ordering Key

G 3439 6470 024

Type: Dupline®
H4-housing
Receiver
No. of channels
Output type
Power supply

Type Selection

Supply	Ordering no.
24 VAC	G 3439 6470 024
115 VAC	G 3439 6470 115
230 VAC	G 3439 6470 230
10-30 VDC	G 3439 6470 800

Output Specifications

	Outputs set to voltage	Outputs set to current
Signal		
Signal output	DIN-voltage output	DIN-current output
Signal range	0-10 VDC	0-20 mA / 4-20 mA
Output load	≥ 100 kΩ	0-450 Ω
Short circuit protection	Yes	Yes
Watchdog output	≤ 30 V	≤ 50 mA
Resolution		
A/D	11 bits or 8 bits	11 bits or 8 bits
Transmission	1/1999 or 1/255	1/1999 or 1/255
Output settling time	≤ 0.5 sec.	≤ 0.5 sec
Inaccuracy (11-bit) (ref. temp. 25°C)	< 0.4% of full-scale	< 0.4% of full-scale
	< 0.2% of reading	< 0.2% of reading
	< 1 count	< 1 count
Temperature influence (ref. temp. 25°C)	< ±15 ppm/K of full-scale	< ±15 ppm/K of full-scale
	< ±150 ppm/K of reading	< ±150 ppm/K of reading
Recommended cable length	< 25 m	< 25 m
Dielectric voltage		
Output - Dupline®	250 VAC (rms)	250 VAC (rms)
Output - Watchdog output	2 kVAC (rms)	2 kVAC (rms)

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1

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Supply Specifications

Power supply AC-types	Overvoltage cat. III (IEC 60664)
Operational voltage	
through term. 21 & 22 230	230 VAC, -10/+15 % (IEC 60038)
115	115 VAC, -10/+15 % (IEC 60038)
024	24 VAC, -10/+15 %
Frequency	45 to 65 Hz
Power consumption	typ. 7 VA
Power dissipation	≤ 8 W
Rated impulse withstand	
voltage 230	4 kV
115	2.5 kV
024	800 V
Dielectric Voltage	
Supply - Dupline®	4 kVAC (rms)
Supply - Signal output	4 kVAC (rms)
Supply - Watchdog output	4 kVAC (rms)
Power supply DC-types	
Operational voltage	
through term. 21 & 22 800	10,5 V - 30 VDC (Ripple incl.)
Ripple	< 3 V
Reverse polarity protection	Yes
Power consumption	< 4 W
Power dissipation	< 6 W
Rated impulse withstand	
voltage	800 V
Dielectric Voltage	
Supply - Dupline®	500 VAC (rms)
Supply - Signal output	250 VAC (rms)
Supply - Watchdog output	2 kVAC (rms)

General Specifications

Power ON delay	≤ 2 s
Indication for	
Supply ON	LED, green
Dupline® carrier	LED, yellow
Dupline® format error	LED, red
Illegal switch setting	LED, red - flashing
Environment	
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	0° to +50°C (+32° to +122°F)
Storage temperature	-20° to +85°C (-4° to +185°F)
Humidity (non-condensing)	20 to 80%
Mechanical resistance	
Shock	15 G (11 ms)
Vibration	2 G (6 to 55 Hz)
Dimensions	
Material	
(see Technical information)	H4-Housing
Weight	300 g
CE-marking	Yes

Switch Settings

Shunt-switches on system top

Current shunts on output 1-4:
ON/ON   = 0-10 V / (2-10 V)
OFF/OFF = 0-20 mA / 4-20 mA

Rotary switches in the front

Mode	A-P	0-F
3 1/2 digit:	Channel group-pair Ex. setting: C or D = C-D	Mux. address for output 1, rest of the outputs (if enabled) on the following addresses
8-bit:	Channel group	Same as 3 1/2 digit. Ex. setting 5 (with 2 outputs enabled) = Output 1 on mux address 5 Output 2 on mux address 6
Analink:	Channel group	Channel no. for output 1, rest of the outputs (if enabled) on the following channels. Setting of 0+9-F is not valid.

Function switches in the front

Offset on output 1-4
ON   = 4-20 mA / (2-10 V)
OFF = 0-20 mA / 0-10 V

No. of enabled outputs
OFF ON : 1
ON   OFF : 2
ON   ON : 3
OFF OFF : 4

Mode (Format)
OFF OFF : Analink
OFF ON : 8-bit binary
ON   OFF : 3 1/2 digit BCD
ON   ON : Reserved for future use

Multiplex ON/OFF
(Only used in 3 1/2 digit BCD and 8-bit binary mode)
ON   = Data is multiplexed
OFF = Data to output 1 is received on the group (or grouppair) rotarysw. A-P is set to,
          data from input 2, 3, 4 (if enabled) on the following groups (or grouppairs)

Maintain ON/OFF
ON   = Keep output in case of Dupline® (or format) error
OFF = Zero output in case of Dupline® (or format) error

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Wiring Diagram

Dimensions (mm)

H4-housing
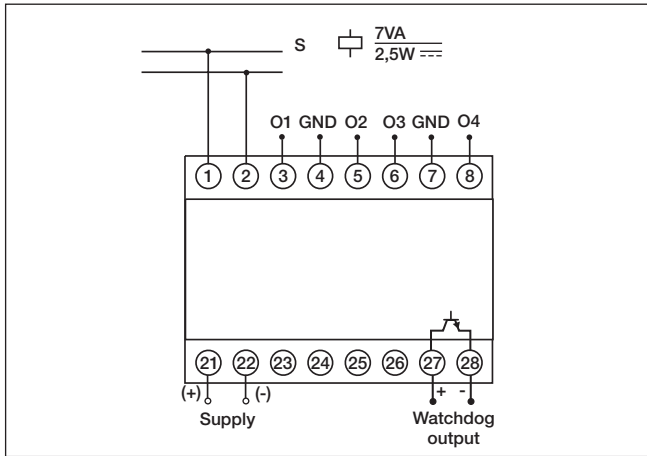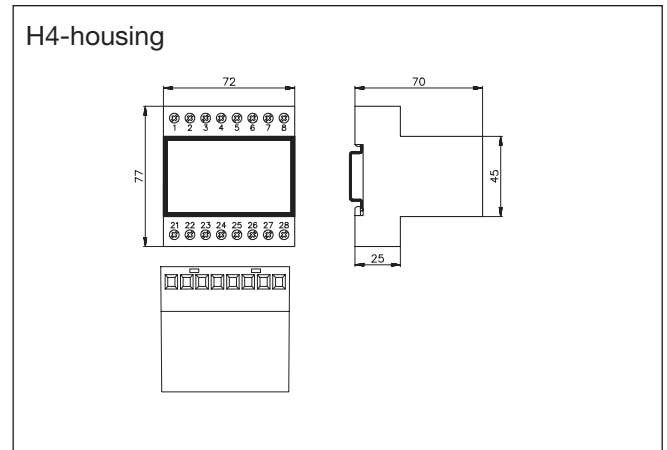
Mode of Operation

The G34396470 is a universal analog module with 4 outputs. The outputs can be configured individually for 0-20 mA, 4-20 mA or 0-10 VDC signals, making a mix of analog output types on the same module possible.The transmission format is selectable and supports all Dupline analog protocols: 8-bit, AnaLink and 3 1/2 digit BCD. The module can be used in normal or multiplexed mode. Address coding is done by means of rotary switches and the output and protocol selection is done by means of DIP-switches, so the GAP 1605 Programmer is not required.

With reference to the diagram on the previous page, the setting of the module should be performed in the following way:

Select current or voltage signal for each output by means of the 4 double-DIP-switches on the top of the module. If 4-20 mA is desired for an output select off-set ON for the corresponding switch on the front of the module. The module only outputs signals according to the selected

number of enabled outputs on switches 5 and 6.

Address allocation for the Analink protocol:

If all four outputs are enabled, the module will use four Dupline® channels in consecutive order, starting from the address set on the two rotary switches on the front of the unit.

Example: Setting of "D7" means that output 1 receives on Dupline® channel D7, output 2 receives on D8, output 3 receives on E1 and output 4 receives on E2.

Address allocation for the 8-bit binary protocol:

If all four outputs are enabled and non multiplexed mode is selected (switch 9), the module will use four Dupline® channel groups (32 channels) in consecutive order, starting from the group set on the first rotary switch (A-P). The second rotary switch (0-F) is not used in this mode.

Example: Setting of "F" on the first rotary switch means that output 1 receives on Dupline® group F, output 2 receives on G, output 3 receives on H and output 4 receives on I.

If multiplexed mode is selected the module will use one Dupline® channel group (8 channels). The first rotary switch (A-P) is used to set the group and the second rotary switch (0-F) to set the multiplex address to be used by the first output, no. 1.

Example: Setting of "F" on the first rotary switch and "0" on the second, means that output 1 receives on Dupline® group F mux. adr. 0, output 2 receives on F mux. adr. 1, output 3 receives on F mux. adr. 2 and output 4 receives on F mux. adr. 3.

Address allocation for the 3 1/2 digit BCD protocol:

If all four outputs are enabled and non-multiplexed mode is selected (switch 9) the module will use four Dupline® channel group-pairs (64 channels) in consecutive order. The first rotary switch (A-P) is used to set the start group pair. The second rotary switch (0-F) has no function in this mode.

Example: Setting of "C" or "D" on the first rotary switch means that output 1 receives on Dupline® group-pair C-D, output 2 receives on E-F,

output 3 receives on G-H and output 4 receives on I-J.

If multiplexed mode is selected the module will use one Dupline® channel group-pair (16 channels). The first rotary switch (A-P) is used to set the group-pair and the second rotary switch (0-F) to set the multiplex address to be used by the first output, no. 1.

Example: Setting of "C" or "D" on the first rotary switch and "8" on the second, means that output 1 receives on Dupline® group-pair C-D mux. adr. 8, output 2 receives on C-D mux. adr. 9, output 3 receives on C-D mux. adr. A and output 4 receives on C-D mux. adr. B.

Note
The selected protocol is valid for all enabled outputs. The module can not receive different protocols at the same time.

Analog reveivers must not be used in systems where channel generators with 2 or 3 sequences are installed.

Accessories

DIN Rail	FMD 411

For further information refer to "Accessories".

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3

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