DA-04-VM2

General

The analogue output module is designed for colour temperature controls. There are 2x2 independent analogue outputs (1-10V) for controlling two lights. The lights are each fitted with a warm tone and cold tone illuminant. The light curves are easily optimised using the parameterisation tool in ProgrammDesinger. When programming, the first channel is designated for the brightness (AA*.1 and AA*.3) and the second channel (AA*.2 and AA*.4) for the colour temperature (intensity between the cold white and warm white light colour). The values of the analogue outputs are then calculated by the module and they then automatically control the intensity ratio between the two illuminants (cold and warm white). The outputs have a voltage range of 0(1) to 10V with 8-bit resolution.

The voltage outputs are galvanically separated from the subnet and from the module's operating voltage. There is no potential separation between the four outputs themselves. The outputs can carry a maximum current source or current sink load of 20mA per output. 0-10V and 1-10V control is simple with this module.
The DA-04-VM2 module can be switched from speed calculation to absolute time calculation by parameterising each channel.

The following functions can be performed independently by the DA module:

- Calculation of rise times from 0.5 seconds to 18 hours
- Independent switch from current ACTUAL analogue values to specified TARGET analogue values with a specified speed (optional in specified time)
- "Analogue value reached" feedback signal after time functions have been executed
- Stop function whilst time functions are being executed
- OVERSAMPLING error correction (the DA module independently corrects the analogue values skipped by the BUS system cycle times using "OVERSAMPLING". The analogue values between the BUS cycles are transformed back into the 8-bit resolution by means of linearisation, thus preventing, for example, flickering when controlling dimmers. In programming OVERSAMPLING is called a SOFT function).
- Performs flash functions
- Adjustment to different illuminants and dimmers
- Calculation of colour curves according to the brightness curves
- Complex emergency mode function

Inputs / Outputs

- 4 analogue outputs 0 (1)-10V
- 1 emergency input "E". The function can be parameterised for each channel.

Function displays

- 1 red LED indicates the operating voltage
- 1 flashing yellow LED indicates communication with the master via the subnet
- 1 green LED indicates that the outputs are being regulated (LED flashes until the desired final value has been reached).

Connections

- 1 connection for the subnet (BUS A and B, RS-485)
- 1 connection for the operating voltage (Ub, 0V)
- 4 outputs 0-10V (1-10V)
- 4 GND connections for outputs (internal connected)
- 1 average connection
- 2 P-COM connections (subnet and operating voltage)

Design
• Light grey plastic casing, can be snapped onto 35 mm DIN rail mounting 3 separating units

Special function DIP switch 1
• Standby
• Switch must be at OFF

Parameterisation
The ISYGLT ProgrammDesigner offers various parameterisation options.
• Feedback bit function for each channel
• Curve calculation definition
• Emergency mode definition
• Dimming curve setting
• Emergency mode in the event of bus failure

The following table contains detailed information about these options:
Please note:

1st column = parameter tab
2nd column = setting (function)
3rd column = description of the parameter to be set
4th column = possible setting (default values are in ***bold italics)***

Tab	Setting	Parameter	Value
Basic settings	all channels	Output voltage	0-10V ***1-10V***
		Output voltage at value “0”	***ever 0V*** Minimum value remains
		Output channels control mode	***colour mixing*** individual steering Special time constant
		Speed value means Speed value speed The specified fade time always refers to the time from 0-100% e.g. 10s. Dimming always occurs at the same speed which means that dimming from 50-100 only takes 5 seconds. This is the default setting which should always be set except for light sequence controls (multiscene). Speed value time The fade time is always calculated absolutely. If 10s is specified, the change from 0-100% will take 10s. The change from 90-100% also takes 10s. This setting should be used for light sequence control (multiscene).	***speed*** time

Tab	Settings	Parameter	Value
		Speed resolution 1 digit equals The speed resolution indicates the converted fade time. The default is 0.5s, which allows a fade time of 0-120s. 0.1s resolution is available for fast processes, which is equivalent to a fade time of 0-24s	***0,5s standard*** 0,1s 1s Special 1s/1m/10m
		Linearisation	***only with Soft*** automatic
		Feedback bit Ex.1 indicates:	***control*** on/off
Emergency operation	channel 1	ISYGLT BUS timeout time – bus failure detection (the time is stated in seconds here for detecting a BUS failure. This should be set as slightly longer than the programming time of the master module.)	***25s*** (5 to 255 secs.)
		Emergency mode (emergency input “E”) active when:	***input on GND*** input open
		Action after bus failure Action after bus failure AA1 (Setting (for each channel) to be implemented after the BUS failure is detected.)	***no change*** 0% 20% 50% 80% 100%
		Action active in emergency mode (Signal at emergency input “E”)	no change 0% 20% 50% 80% ***100%***
	channel 2 ...4	see channel 1	
Curve individual control	User curve channel 1 + 3	for dimming value %0	***0#*** all entries 0..255# possible
		for dimming value %10 for dimming value %20 for dimming value %30 for dimming value %40 for dimming value %50 for dimming value %60 for dimming value %70 for dimming value %80 for dimming value %90 for dimming value %100	26 # 51 # 77 # 102 # 128 # 153 # 179 # 204 # 230 # 255 #

Tab	Settings	Parameter	Value
Curve colur #0 light colour	Mixing curve channel 2 + 4	Dimming value %0 cold	0 #
		Dimming value %0 warm	0 #
		Values for 10, 20, 30, 40, 50, 60, 70, 80, 90%	
		Dimming value %100 cold	255 #
		Dimming value %100 warm	0 #
Curve colour #51	Mixing curve	see Kurve #0 however different values.	
Curve colour #102	Mixing curve	see curve #0 however different values	
Curve colour #255	Mixing curve	see curve #0 however different values.	

The parameters are transfered by BUS lines to the module and saved durable.

Technical data

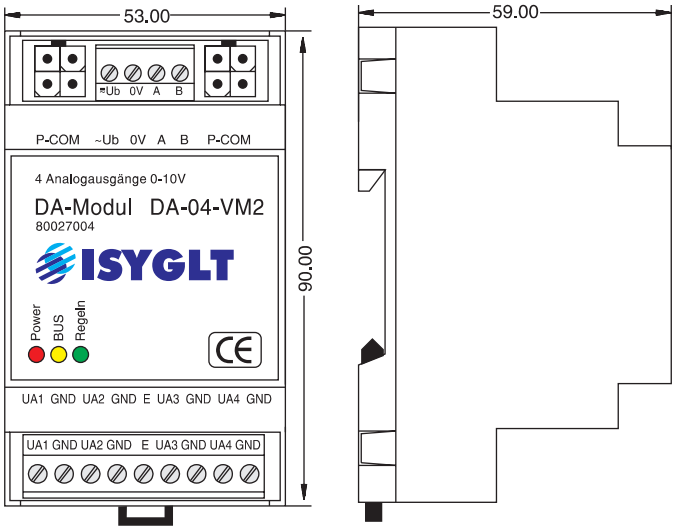
Type	DA-04-VM2
Art. Nr.	80027004
Operating voltage	18V to 35V DC or 18V to 27V AC
Current consumption	max. 120mA at 35V, and full load of the outputs max. 200mA at 18V, and full load of the outputs
Output voltage	4 analog channels 8Bit resolution 0-10V
Output current	20mA each channel operating as current source or current drain (totally 80mA)
Insulation voltage	300V (subnet / analog output)
Subnet (RS-485)	max. 5,6V limited by Z-diodes
Dimensions	LxBxH, 53x90x59mm = 3TE
Weight	200g
Connections	Screw terminals pluggable and P-COM connection
Operating temperature	-10...+50°C
Storage temperature	-25...+70°C
Humidity	0 ...85 % r.F. non condensing
Protection class	IP30
ESD immunity	Category 3 according to IEC1000-4-2
EMV immunity	Use in typical industrial enviroment. Category 3 lt. IEC-1000-4-4 (Test was carried out within a whole system)
CE sign	yes

Terminal assignment

≅ Ub	Operating voltage
0V	Operating voltage
A	Subnet (BUS A, RS-485)
B	Subnet (BUS B, RS-485)
E	Average input

GND	Reference potential (mass) for analog outputs (4x internal connected)
UA1	Analog output channel 1
UA2	Analog output channel 2
UA3	Analog output channel 3
UA4	Analog output channel 4

View



Wiring diagram