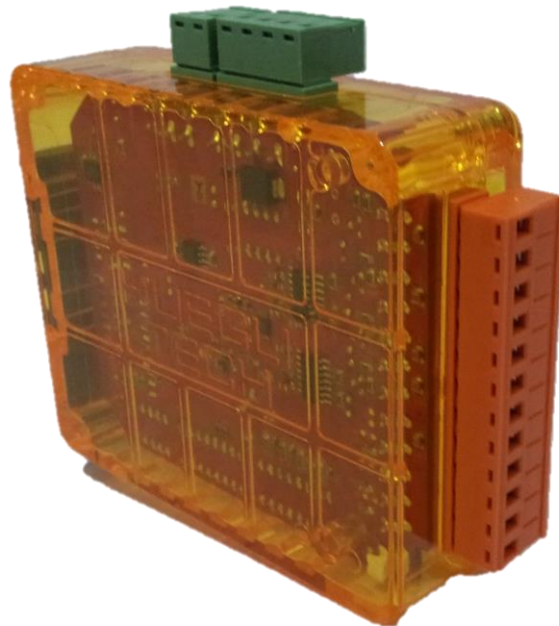


CuteLine

BIN8 - Binary Input

Manual



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HUEGLI TECH Switzerland

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1 General Guidelines

1.1 What describes this manual?

This manual describes the function of the Cuteline module, which is designed for use with different gen-set controllers.

What is the purpose of the manual?

This manual provides general information how to install and operate the Cuteline module.

1.2 !! Warning !!

Some of the Cuteline functions are subjected to changes depending on SW version.
The data in this manual only describes the product and are not warranty of performance or characteristic.

Note:

Huegli Tech believes that all information provided herein is correct and reliable and reserves the right to update at any time. Huegli Tech does not assume any responsibility for its use unless otherwise expressly undertaken.

!!! CAUTION !!!

Dangerous voltage

In no case touch the *terminals for voltage and current* measurement!
Always connect grounding terminals!

All parameters are pre-adjusted to their typical values. But the set points in the “**Basic settings**” settings group **!!must!!** be adjusted before the first startup of the gen-set.

!!! WRONG ADJUSTMENT OF BASIC PARAMETERS CAN DESTROY THE GEN-SET !!!

The following instructions are for qualified personnel only. To avoid personal injury do not perform any action not specified in this User guide !!!

2 Mounting

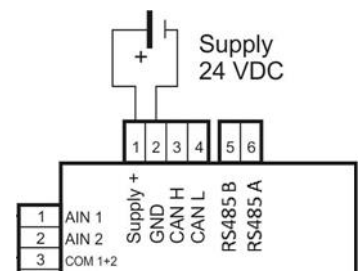
The CuteLine modules are designed to be mounted on a 35 mm DIN Rail and can be easily attached and detached from the DIN rail.

To mount the module on the DIN rail, attached the upper portion of the module onto the DIN rail and press down the module until the hook clicks itself.

To remove the module from the DIN rail, simply unhook the lower part using a screwdriver and lift the enclosure from the DIN rail.

3 Electrical Connection

All connectors can be pulled out from the board for easier wiring.



3.1 General Communication Configuration

Switch Position	Communication Configuration
SW1: 5 6 OFF <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/>	CAN bus for IS-NT/IG-NT controllers
	MODBUS (19200 baud)
SW1: 5 6 OFF <input type="checkbox"/> <input checked="" type="checkbox"/> ON <input checked="" type="checkbox"/> <input type="checkbox"/>	CAN bus for HT controllers
	MODBUS (19200 baud)
SW1: 5 6 OFF <input checked="" type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input checked="" type="checkbox"/>	MODBUS (9600 baud)
SW1: 5 6 OFF <input type="checkbox"/> <input type="checkbox"/> ON <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	MODBUS(19200 baud)

3.2 Power Supply

The nominal supply input for CuteLine BIN8 Module is 24 VDC but it can also work from a voltage range of 7-30VDC. The green LED on the front is turned on when the device is connected to the power supply. The supply input is reverse polarity protected.

3.3 Wiring Input Signals

Each of the 8 binary inputs must be configured to work in pairs either with a +24 VDC or switched to Ground (-) input signal.

COM x+y connected to Ground (-)

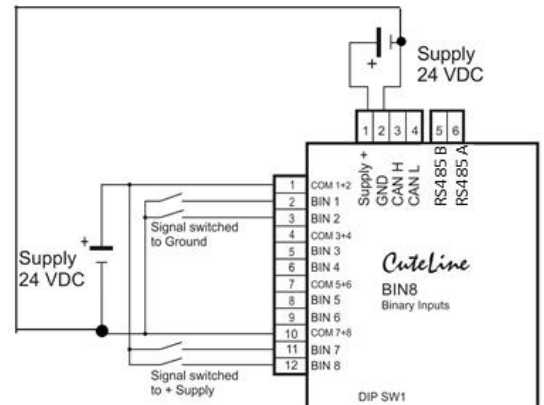
Input set to GND or Open - Indicated as '0'

Input set to 24 V DC----- Indicated as '1'

COM x+y connected to +24 VDC

Input Open ----- Indicated as '1'

Input set to GND ----- Indicated as '0'



For both wiring configuration, the output logic can be inverted.

Inverting the Input Logic

If it is necessary to invert the indicated signal of one or more inputs, this can be done during the start-up of the device.

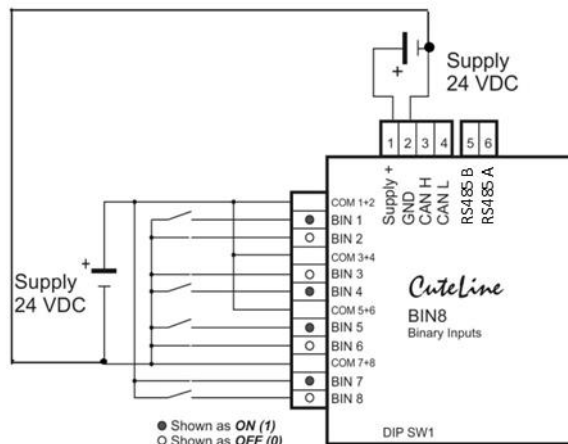
Example

The device is wired up as follows:

Com 1+2 .+24 V DC Com 3+4 .+24 V DC
Com 5+6 .+24 V DC Com 7+8 .GND

Inputs Status at LOW before inverting input logic:

Input	Status	Shown before inverting
Input 1	OPEN	1
Input 2	CLOSED (GND)	0
Input 3	CLOSED (GND)	0
Input 4	OPEN	1
Input 5	OPEN	1
Input 6	CLOSED (GND)	0
Input 7	ON (24 V DC)	1
Input 8	OPEN	0



To change the logic you must follow these steps

1. Switch off the device by disconnecting the power supply
2. Set all input to the status which is your '0' (Low) logic
3. Switch ON DIP SW 1:7
4. Connect the power supply to the device
The yellow LED flashes 2 times and stays ON
5. Switch off the device
6. Switch OFF DIP SW 1:7
7. Connect the power supply to the device

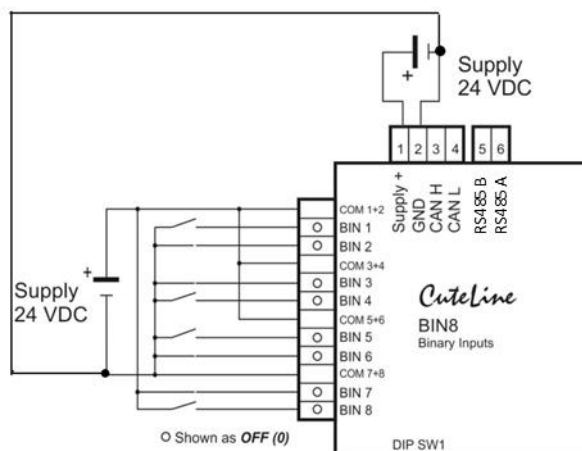
Now the Binary Input Module starts normally with reverse logic.

Note:

This function is protected during normal working mode which means it can be entered only while the device is powered up. After that, the position of DIP SW 1:7 is ignored.

Following the example mentioned above the status of the inputs will now be indicated as follows:

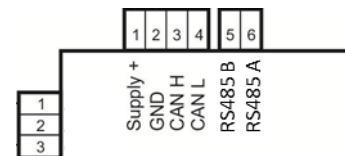
Input	Status	Shown after inverting
Input 1	OPEN	0
Input 2	CLOSED (GND)	0
Input 3	CLOSED (GND)	0
Input 4	OPEN	0
Input 5	OPEN	0
Input 6	CLOSED (GND)	0
Input 7	ON (24 V DC)	0
Input 8	OPEN	0



4 Serial Connection

The CuteLine BIN8 Module provides two kinds of serial connection:

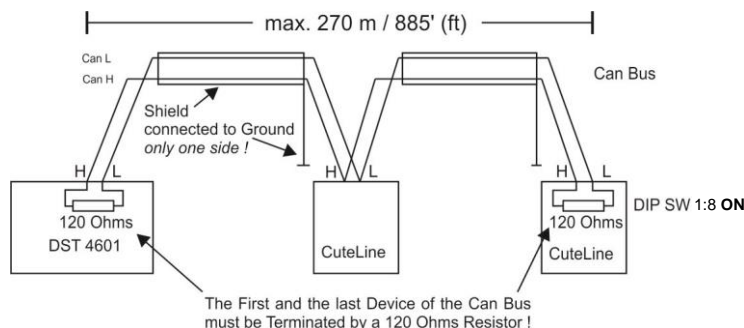
CAN Bus *Various Protocols*
RS485 *Mod Bus RTU*



4.1 CAN Bus Connection

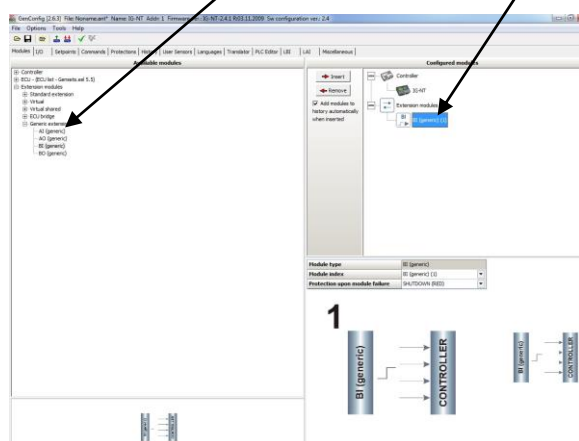
Using the CAN Bus connection, the bus cable must be connected to the terminals Can H(igh) and Can L(ow). If the module is the first or the last device in the bus, a termination resistor is required. There is a built-in resistor (120 Ohms) which can be activated by switching DIP SW1:8 to ON position. Shielded cable (for example, HELUKABEL CAN BUS 2x0.22) must be used for the CAN Bus connection.

Recommended Wiring

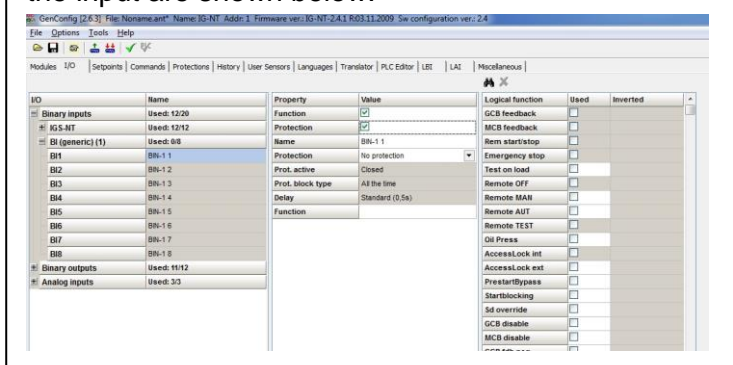


4.2 Can Bus Connection to IG-NT / IS-NT

If the device is connected to IG-NT / IS-NT, the address setting (DIP SW1) in the CuteLine module must be similar to the setting in the Controller. In the GenConfig, the CuteLine devices should be selected as a Generic Extension -> BI (generic).



Some of the sources that can be configured to trigger the input are shown below.



NOTE

Any changes on the address settings (DIP SW1:1 to SW1:6) are valid only after Power Down Reset.

Address Settings for IG-NT / IS-NT Mode DIP Switch 1

Address	SW1:1	SW1:2	SW1:3	SW1:4	SW1:5	SW1:6
1	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	OFF	OFF
3	OFF	ON	OFF	OFF	OFF	OFF
4	ON	ON	OFF	OFF	OFF	OFF
5	OFF	OFF	ON	OFF	OFF	OFF
6	ON	OFF	ON	OFF	OFF	OFF
7	OFF	ON	ON	OFF	OFF	OFF
8	ON	ON	ON	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF
10	ON	OFF	OFF	ON	OFF	OFF
11	OFF	ON	OFF	ON	OFF	OFF
12	ON	ON	OFF	ON	OFF	OFF
13	OFF	OFF	ON	ON	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF
15	OFF	ON	ON	ON	OFF	OFF
16	ON	ON	ON	ON	OFF	OFF

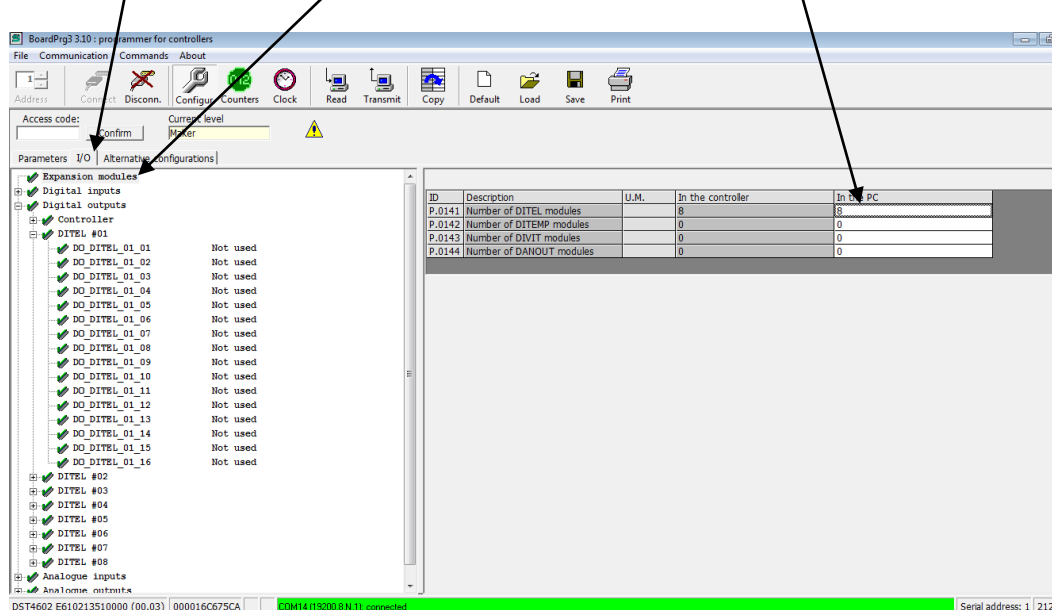
4.3 Can Bus Connection to HT Controller (DST Mode)

If the device is connected to HT Controller, the address setting (DIP SW1) in the CuteLine module must be configured to match the settings in the Controller. In the BoardPrg, the CuteLine devices must be selected as DITEL.

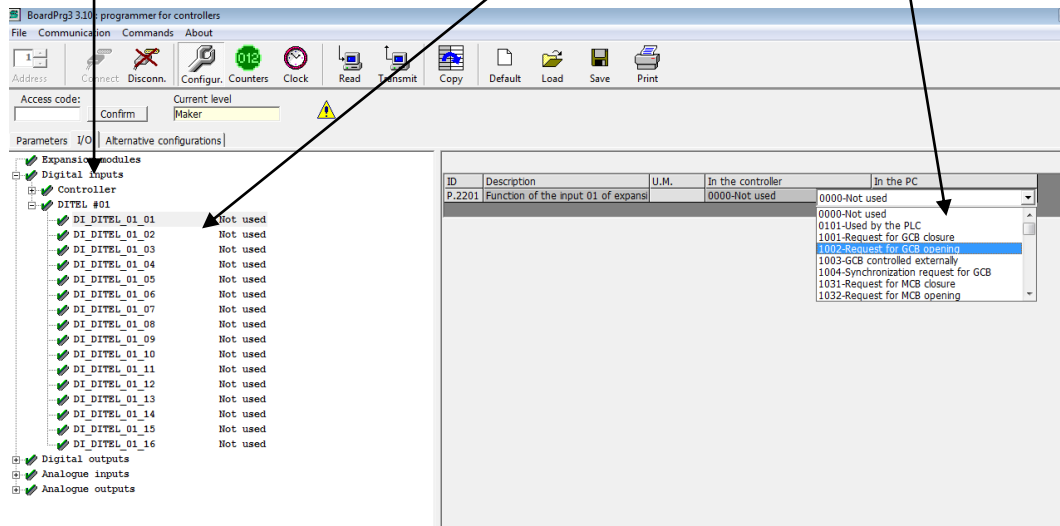
Note: In DST Model, Yellow LED on the front is blinking when data are sent out.

In the BoardPrg:

I/O tab → Expansion modules → Key in the number of BIN8 module to be used.



Digital Inputs → Select the appropriate DI_DITEL_# → Select the required function of this input



Address Settings for DST Mode

DIP Switch 1

Address	SW1:1	SW1:2	SW1:3	SW1:4	SW1:5	SW1:6
DI_DITEL_01_(01 to 08)	OFF	OFF	OFF	*	ON	OFF
DI_DITEL_02_(01 to 08)	ON	OFF	OFF	*	ON	OFF
DI_DITEL_03_(01 to 08)	OFF	ON	OFF	*	ON	OFF
DI_DITEL_04_(01 to 08)	ON	ON	OFF	*	ON	OFF
DI_DITEL_05_(01 to 08)	OFF	OFF	ON	*	ON	OFF
DI_DITEL_06_(01 to 08)	ON	OFF	ON	*	ON	OFF
DI_DITEL_07_(01 to 08)	OFF	ON	ON	*	ON	OFF
DI_DITEL_08_(01 to 08)	ON	ON	ON	*	ON	OFF

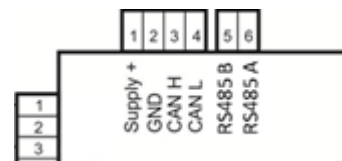
NOTE:

Any changes on the address setting(SW1:1 to SW1:6) are valid only after a Power Down Reset

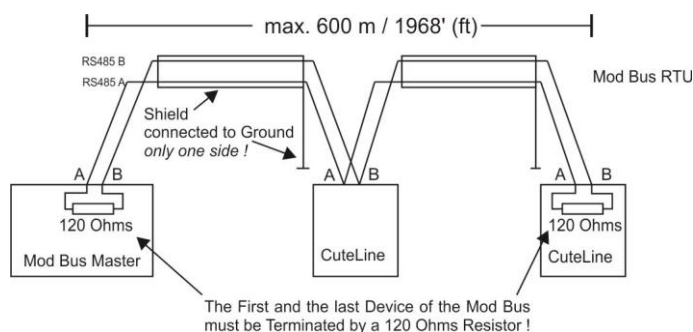
BIN8 Module does not support input
DI_DITEL_0*_09 to
DI_DITEL_0*_16

4.4 Mod Bus RTU Connection

When working in this mode, the CuteLine BIN8 Module works as a Mod Bus Slave so the Master has to request data from it. The connection must be on the terminals RS485A and RS485B. If the module is the last device in the bus, an external 120 Ohms termination resistor must be added.



Recommended Wiring



There are fixed object numbers for the 8 binary inputs :

10001 BIN 1 10002 BIN 2 10003 BIN 3 10004 BIN 4
10005 BIN 5 10006 BIN 6 10007 BIN 7 10008 BIN 8

The Master can read a single or several objects by using the command 02.

The communication setting is 9600 / 19200 Baud (depending on DIP SW1:5), 8 Bit, 1 Stop Bit, No Parity.

The yellow LED on the front is blinking when data are send out after a request from the Master.

Address Settings for Mod Bus RTU Mode DIP Switch 1

Address	SW1:1	SW1:2	SW1:3	SW1:4	SW1:5	SW1:6
1	OFF	OFF	OFF	OFF	*	ON
2	ON	OFF	OFF	OFF	*	ON
3	OFF	ON	OFF	OFF	*	ON
4	ON	ON	OFF	OFF	*	ON
5	OFF	OFF	ON	OFF	*	ON
6	ON	OFF	ON	OFF	*	ON
7	OFF	ON	ON	OFF	*	ON
8	ON	ON	ON	OFF	*	ON
9	OFF	OFF	OFF	ON	*	ON
10	ON	OFF	OFF	ON	*	ON
11	OFF	ON	OFF	ON	*	ON
12	ON	ON	OFF	ON	*	ON
13	OFF	OFF	ON	ON	*	ON
14	ON	OFF	ON	ON	*	ON
15	OFF	ON	ON	ON	*	ON
16	ON	ON	ON	ON	*	ON

* = Baud Rate Selector
OFF = 9600 Baud
ON = 19200 Baud

HINT

Any changes on the address settings (switches SW1:1 to SW1:6) are valid only after a Power Down Reset

Technical Data

Power Supply7-30VDC, Reverse Polarity Protected

Current Consumption 85mA with 24VDC Power Supply Input @ 25°C

Number of Outputs8, Configurable in 4 groups of 2 channel, Non-Isolated

COM x+y connected to Ground (-) Configuration

On State Voltage Minimum 3.5V
..... Maximum 28.8V

Off Stage Voltage Maximum 1.8V

COM x+y connected to +24 VDC

On State Voltage Minimum 4.5V
..... Maximum 28.8V

Off Stage Voltage Maximum 2.5V

Communication Supported Protocols Can Bus IS/IG
..... Can Bus HT Controller
..... Mod Bus RTU

Operational Temperature -40 to +85 °C (-40 to +185°F)

Storage Temperature -40 to +85 °C (-40 to +185°F)

Relative Humidity 5 to 95%, Non-condensing

Dimension(Including Terminal blocks) 30 x 110 x 94 mm

Weight(Including Terminal blocks) 190g

Wire Size 22 to 12 AWG

Mounting DIN Rail 35 mm