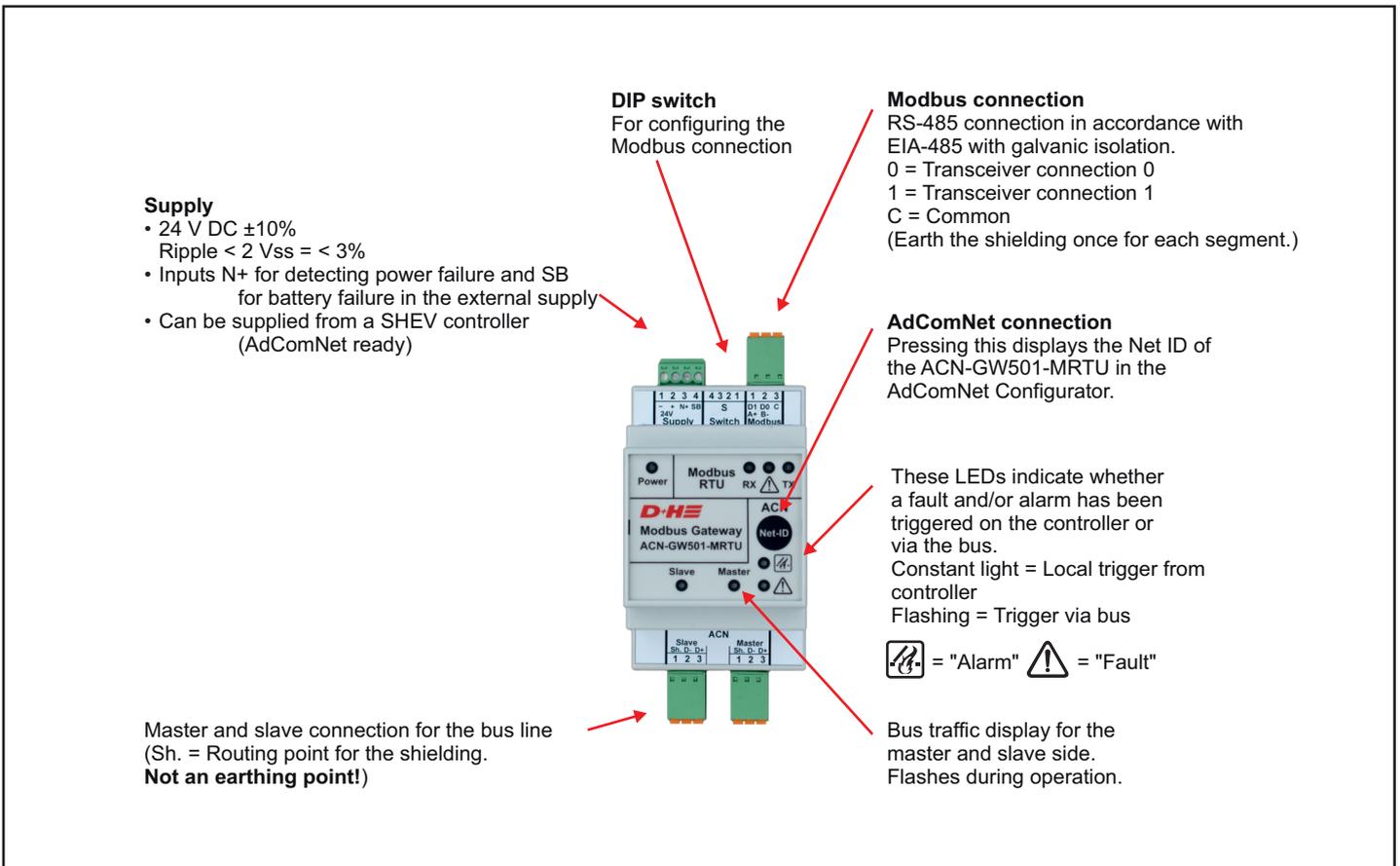# D+H

ACN-GW501-MRTU

CE

Safety notes

24 VDC operating voltage!
Do not connect directly to the mains power supply!
- **May be connected only by authorised D+H specialised personnel!**
- Only use in dry spaces
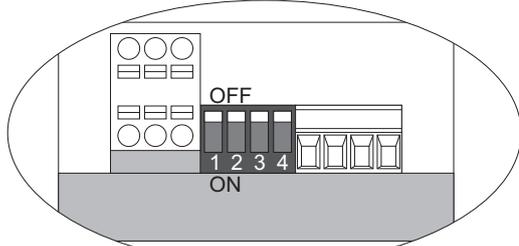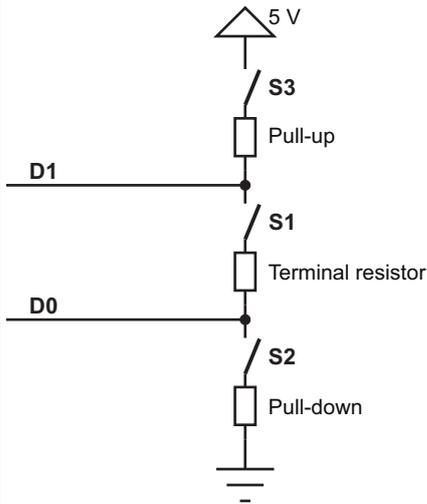- Only intended for installation indoors

Scope of supply

1x ACN-GW501-MRTU Modbus gateway
2x 110 Ω terminal resistor

Intended use

AdComNet products may be installed and put into operation only by installation companies specially trained and certified for AdComNet by D+H Mechatronic.
The installation instructions in the AdComNet manual must be observed!

The ACN-GW501-MRTU Modbus gateway is an externally supplied, configurable and galvanically isolated interface converter between AdComNet and Modbus.
It establishes the connection between AdComNet and Modbus RTU.
- For connecting outside fields, such as fire alarm systems, building control technology or central activation, to AdComNet
- Power can be supplied using a SHEV controller
- Current consumption of approximately 30 mA
- Additional battery capacity of 1.2 Ah is required
- The device is fastened to a top hat rail in a controller or on its own housing (Dimensions WxHxD: 52 x 86 x 58 mm)

The Modbus interface has the following settings:
- Medium: RS 485
- Transmission rate: 19,200 baud
- Slave address 1, ... (100), ... 247
- Data frame: 8 data bits, even parity, 1 stop bit (8E1)
- Modbus protocol: RTU
- Modbus timeout: 100ms, ... (disabled), ... 99 min

The slave address and the Modbus timeout parameters are configured through AdComNet.
The Modbus is implemented as a slave.

DIP switch
For configuring the Modbus connection

Modbus connection
RS-485 connection in accordance with EIA-485 with galvanic isolation.
0 = Transceiver connection 0
1 = Transceiver connection 1
C = Common
(Earth the shielding once for each segment.)

Supply
• 24 V DC ±10%
  Ripple < 2 Vss = < 3%
• Inputs N+ for detecting power failure and SB for battery failure in the external supply
• Can be supplied from a SHEV controller (AdComNet ready)

AdComNet connection
Pressing this displays the Net ID of the ACN-GW501-MRTU in the AdComNet Configurator.

These LEDs indicate whether a fault and/or alarm has been triggered on the controller or via the bus.
Constant light = Local trigger from controller
Flashing = Trigger via bus

= "Alarm"   = "Fault"

Master and slave connection for the bus line
(Sh. = Routing point for the shielding.
Not an earthing point!)

Bus traffic display for the master and slave side.
Flashes during operation.

Connection

DIP switch

The ACN-GW501-MRTU provides the option of connecting both a bus terminator and a bias network to the data bus as needed. S2 and S3 must be used together.

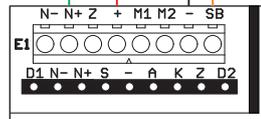S4 remains clear for later use and has to be switched off.

5 V

S3
Pull-up

D1

S1
Terminal resistor

D0

S2
Pull-down

OFF
1 2 3 4
ON

Modbus connection – RS 485

The RS-485/Modbus connection is specified in accordance with EIA-485 and designed with galvanic isolation.
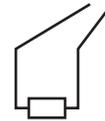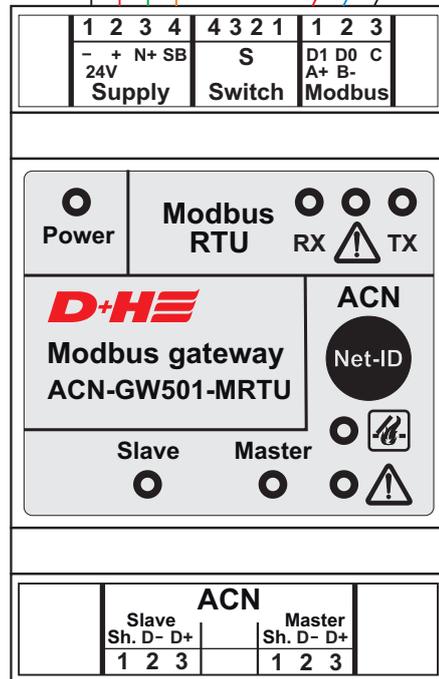
The following values must be observed for wiring:
- Maximum cable length for 26AWG and 19k2 is approximately 500 m
- Bus line must have a terminal resistor on both sides
- Network topology: Line
  Connect common to „C"!
  Common "C" must have its own wire and must not be connected to the shielding.
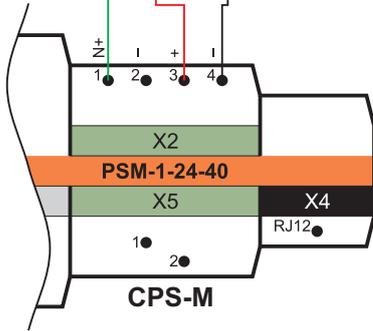
Earth the shielding **once** for each segment. The shielding is not connected to the Modbus Gateway.

N–	N+	Z	+	M1	M2	–	SB

E1

D1	N–	N+	S	–	A	K	Z	D2

RZN 4404-M
RZN 4408-K
RZN 4408-M
RZN 4416-M
"AdComNet ready"

N+ I + I
1   2 3 4

X2

PSM-1-24-40

X5   X4
        RJ12

1
  2

CPS-M

1	2	3	4	4	3	2	1	1	2	3
–	+	N+	SB		S			D1	D0	C
24V								A+	B–	
Supply				**Switch**				**Modbus**		

○ **Power**   **Modbus RTU**   ○ RX   ⚠   ○ TX

D+H≡

Modbus gateway
ACN-GW501-MRTU

ACN
Net-ID

○ 🔥

Slave   **Master**
○   ○   ○ ⚠

ACN

Slave			Master		
Sh.	D–	D+	Sh.	D–	D+
1	2	3	1	2	3

*   *

* Termination:
Every segment must be terminated with **2 resistors (110 Ω)**. The resistors must be connected **as far apart as possible**.
Unused connections must also have terminal resistors!

AdComNet connection
(connected as a master in this case)

Earth the shielding **once** for each segment.

D+H≡

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