

Metalog 4G

Remote 4G data logger for analogue and Modbus instruments

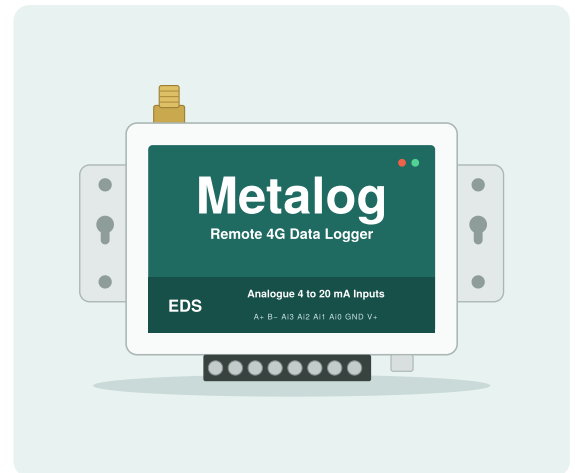
Product overview

Metalog 4G is a compact remote data logger for water and wastewater networks. It reads up to four 4 to 20 mA transmitters and multiple RS485 Modbus RTU instruments, and returns the data over the 4G cellular network.

The logger runs from 9 to 28 V DC and can power loop powered transmitters directly from its V+ terminal. All settings are made on site from a laptop over USB.

Key features

- Four 4 to 20 mA analogue inputs, Ai0 to Ai3
- Two wire loop powered or three wire transmitter connection
- RS485 port for Modbus RTU or transparent serial transmission
- 9 to 28 V DC supply through the terminal block or DC jack
- Sensor power output on V+ at supply voltage
- Built in 4G modem with SMA female antenna connector
- USB configuration from a laptop
- Status LEDs for setup, armed and transmitting states
- Compact 88 × 60 × 25 mm IP58 body with keyhole mounting flanges



AT A GLANCE

Inputs	4 × 4 to 20 mA
Serial	RS485, Modbus RTU
Supply	9 to 28 V DC
Network	4G cellular
Antenna	SMA female, 50 Ω
Setup	USB to laptop
Size	88 × 60 × 25 mm
Rating	IP58
Operating	−20 °C to 80 °C

Typical applications

Pump stations

Wet well level from a submersible level transducer.

Reservoirs

Storage level in tanks and reservoirs.

Network pressure

Pressure transmitters at critical points in the reticulation.

Flow metering

Analogue or Modbus outputs from flow meters.

SECTION 1

Technical specifications

GENERAL

Model	EDS-Metalog-4G-4CA
Product type	Remote 4G data logger
Configuration	USB connection to a laptop

POWER

Supply voltage	9 to 28 V DC
Terminal input	V+ and GND, pins 1 and 2
DC jack	5.5 × 2.5 mm, 2.5 mm centre pin
Sensor power	V+ output at supply voltage when powered from the DC jack
Power switch	On / off

ANALOGUE INPUTS

Channels	4, Ai0 to Ai3
Signal type	4 to 20 mA (default)
Two wire	Loop powered from the logger V+
Three wire	External supply, 0 V common with logger GND

SERIAL COMMUNICATIONS

Interface	RS485, two wire (A+, B-)
Protocol	Modbus RTU or transparent RS485 transmission
Topology	Multidrop, daisy chained bus

CELLULAR

Network	4G
Antenna	SMA female connector, 50 Ω
SIM card	Hinged slot on the rear panel

PHYSICAL

Body size	88 × 60 × 25 mm (W × H × D)
Mounting	Side flanges, 10 mm wide, with keyhole slots
Terminal block	8 way, 3.81 mm pitch
USB port	Configuration interface
Indicators	ACT (red) and SRV (green) LEDs

ENVIRONMENTAL

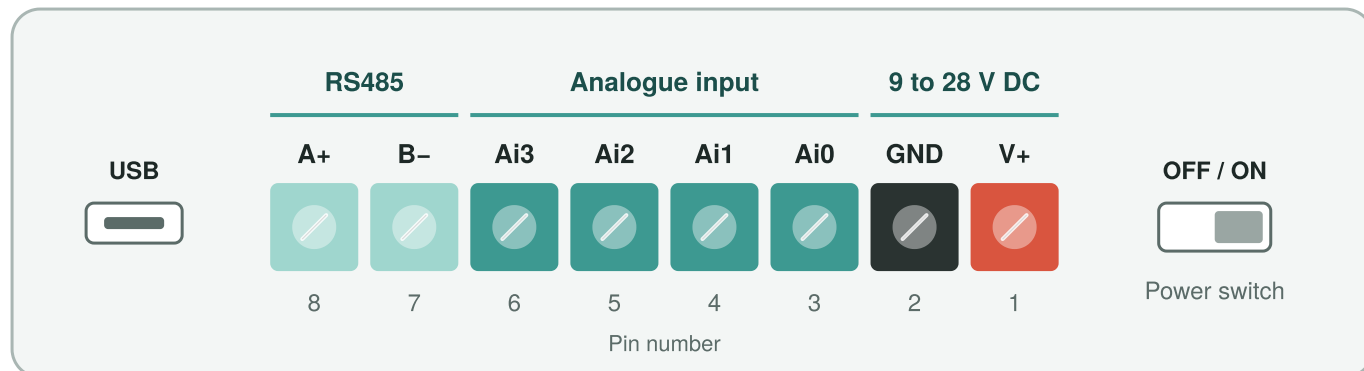
Operating temp.	-20 °C to 80 °C
Ingress rating	IP58

Status indicators

LED	INDICATION	MEANING
● ACT (red)	Flashes every 600 ms	Setup mode
	Flashes every 6 s	Disarmed
	Two flashes every 3 s	Armed
● SRV (green)	On	Starting up, or sending a message
	Off	Start up or message sending complete

SECTION 2

Terminals and power

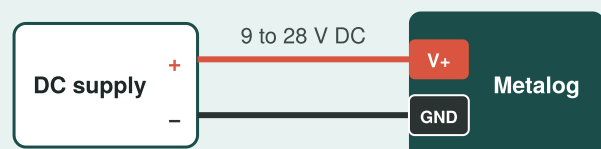


Pin assignments

PIN	TERMINAL	FUNCTION	NOTES
8	A+	RS485 data A+	To A+ on each RS485 device
7	B-	RS485 data B-	To B- on each RS485 device
6	Ai3	Analogue input 4	4 to 20 mA
5	Ai2	Analogue input 3	4 to 20 mA
4	Ai1	Analogue input 2	4 to 20 mA
3	Ai0	Analogue input 1	4 to 20 mA
2	GND	Ground	Supply negative, three wire 0 V common
1	V+	Power in, or sensor power out	9 to 28 V DC

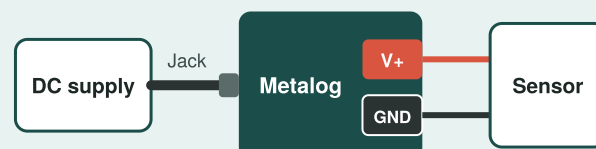
Power options

A. Through the terminal block



Wire 9 to 28 V DC to V+ (pin 1) and GND (pin 2).
The DC jack is not used.

B. Through the DC jack

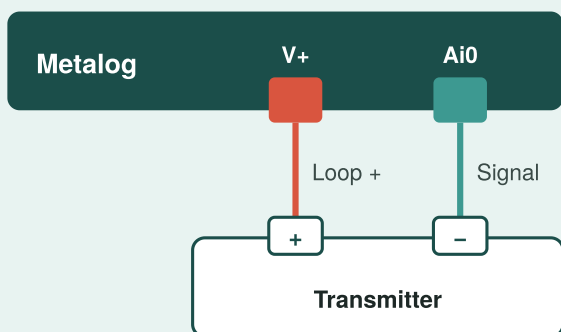


Plug the supply into the 5.5 × 2.5 mm jack. V+ then powers sensors at the supply voltage.

SECTION 3

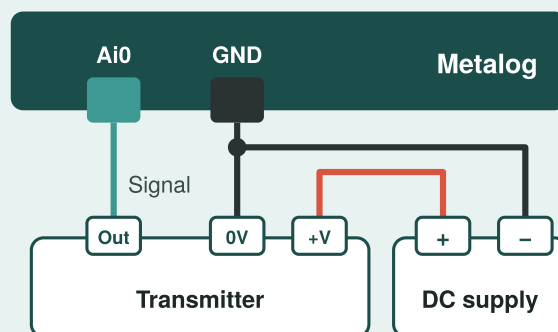
Wiring

Two wire transmitter, loop powered



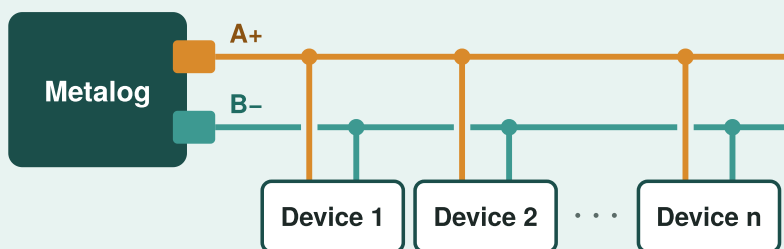
- Loop + to V+, loop - to the analogue input.
- Repeat for Ai1 to Ai3. All loops share V+.
- Power the logger from the DC jack (option B).

Three wire transmitter, external supply



- Transmitter output to the analogue input.
- Supply 0 V and transmitter 0 V to logger GND.
- Use where the transmitter needs its own supply.

RS485 Modbus devices



- A+ to A+ and B- to B- on every device.
- Daisy chain devices along one bus.
- Give each Modbus device a unique address.

Modbus RTU

The logger communicates with RS485 instruments using the Modbus RTU protocol.

Transparent transmission

RS485 data can also be passed straight through the logger without decoding.

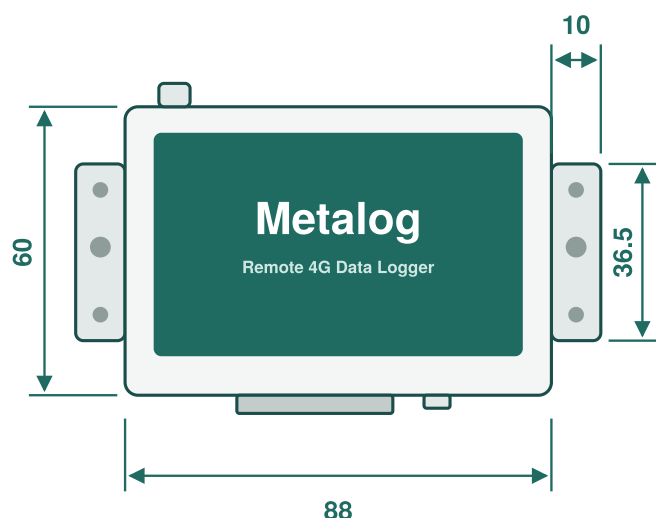


Before wiring

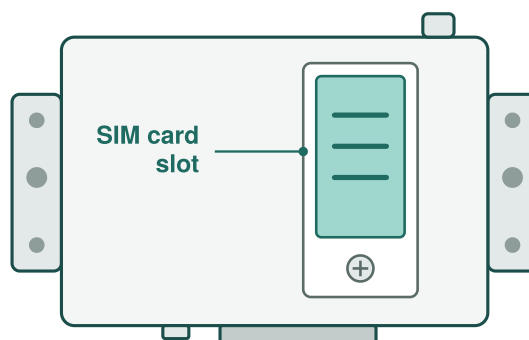
Switch the logger off before making or changing connections. Check transmitter polarity and supply voltage against the transmitter datasheet before powering up.

SECTION 4

Dimensions and installation



Front view. All dimensions in mm.



Rear view



Terminal end view

Installation

- 1 Mount the logger**
 Fix through the keyhole slots in both side flanges to a flat wall or panel.
- 2 Fit the SIM card**
 Slide the holder down and lift it open. Insert the SIM, then close it and slide it up to lock.
- 3 Connect the antenna**
 Fit a 4G antenna to the SMA connector, directly or through an extension cable.
- 4 Wire the terminal block**
 With the power switch off, wire power, transmitters and RS485 devices as shown in Sections 2 and 3.
- 5 Configure over USB**
 Connect a laptop to the USB port and set the parameters. ACT flashes every 600 ms in setup.
- 6 Power up and check**
 Switch on. SRV lights during start up and goes off when complete. ACT then shows the armed state.