

DLF4

Data logger with data remote transmission for general applications

Technical information TI12.20



Application

- Water and waste water sector
- Environmental technology
- Process industry
- Machinery and plant engineering
- Facility and building automation

e.g. for

- Long-term monitoring of water levels at hydropower stations
- Alarming at high water
- Weir control
- Stockpiling management of storage container

Main features

- Multiple power supply options
 - Long-term lithium battery 19/35Ah
 - Li-ION rechargeable battery 20Ah
 - DC supply 7...32V
 - Photovoltaic module (PV module)
- Up to 7 sensors for up to 13 measurands
 - 2x sensor current 0/4...20mA
 - 2x 4-channel multiparameter sensor RS485 Modbus-RTU
 - 2x sensor resistance 0...2200R
 - 2x sensor supply 16,6V / 30mA
 - 2x sensor supply 6,7V / 100mA
 - 1x sensor supply 3,8V / 250mA
 - 2x Digital input / Impulse counter
- 800.000 measurement values
- On site operation per Bluetooth 5.0 LE
- Data remote transmission per 4G/LTE, 2G GSM/GPRS
- Alarmmanagement and remote alarming
- Measurement verification by compare sensor

- Highest data security
- High protection class IP65/IP67
- Temperature range -20°C to +60°C

Description

The device is an electronic data logger for wall installation, with integrated data remote transmission 4G/2G, for autonomous recording of different measurands and with Bluetooth 5.0 LE interface for a simple cable-free on-site operation per mobile App.

A high-efficiency power management allows dependent on supply and settings, the long-term application for more than 10 years, as well as a fast measuring operation mode with short-term data transmission.

The robust design and the high-quality workmanship turns the device into a very high quality product.

A captive laser marking of the type label ensures the identifiability throughout the entire lifetime of the device.

Obviously is the optional marking of a measurement point designation resp. TAG of course also per laser marking.

A customer specific configuration resp. preset is also optionally available.



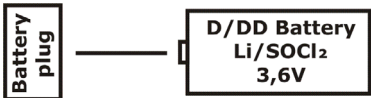
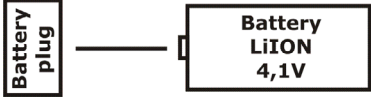
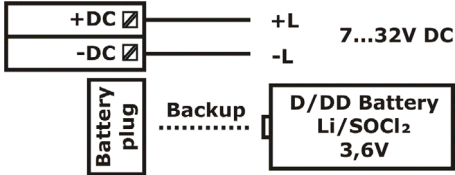
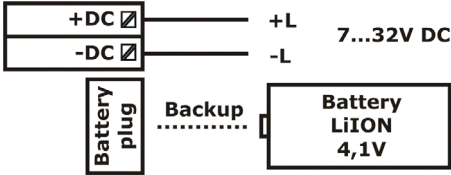
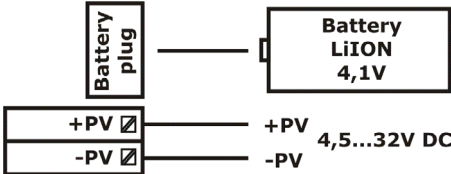
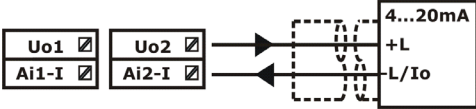
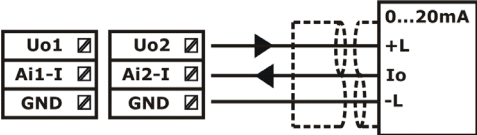
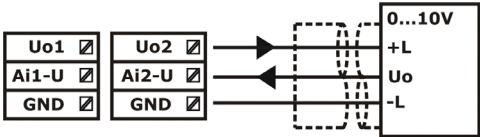
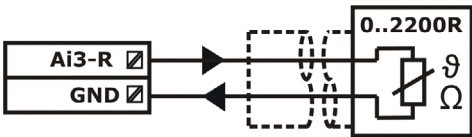
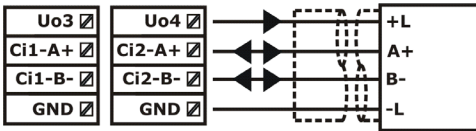
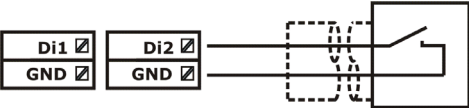
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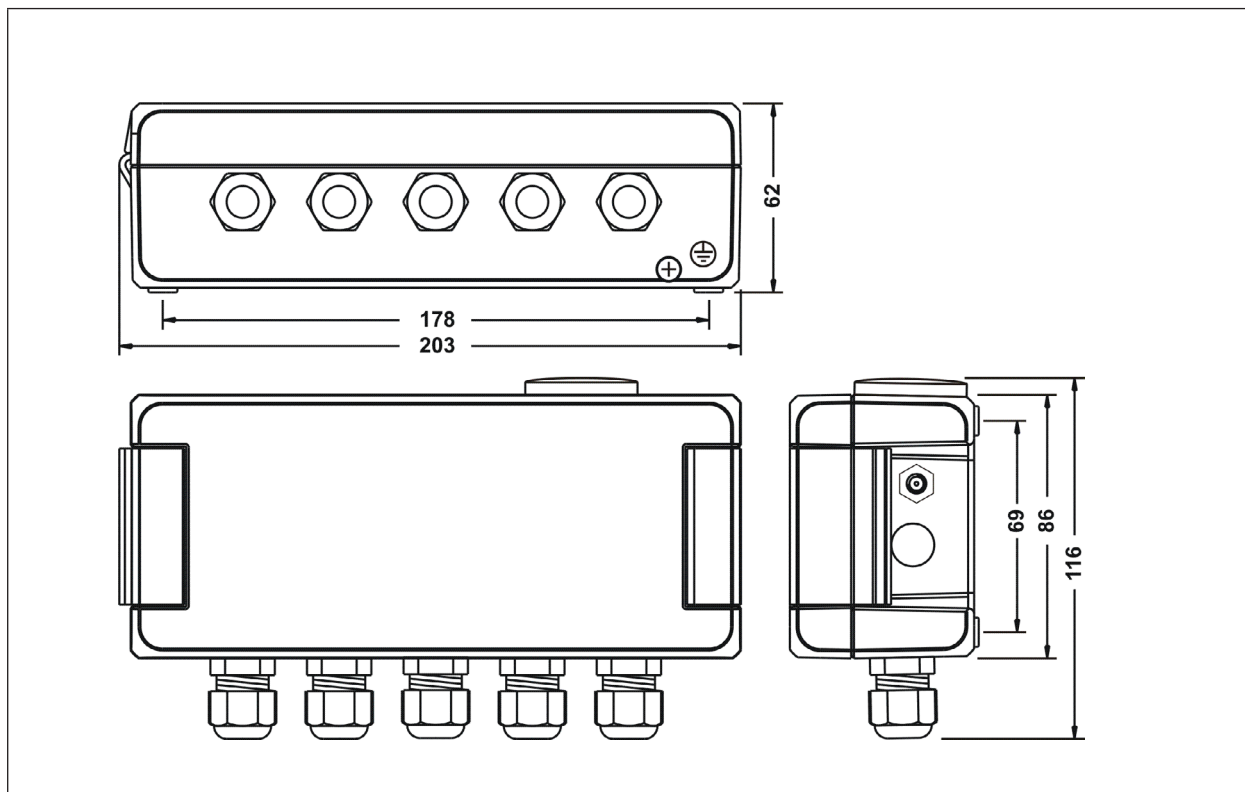
TECHNICAL DATA

Auxiliary power	
Battery B1	Lithium / 3,6V-19Ah
Battery B2	Lithium / 3,6V-35Ah
Battery rechargeable A1	Li-ION / 4,1V-20Ah
Supply voltage DC	7...32VDC / $\leq 350\text{mA}$
PV module	4,5...32VDC / $\leq 2\text{A}$
Input COM Ci1 / Ci2	
Interface	RS485, bidirectional / Modbus-RTU / 9600 Baud (4800...38400 Baud)
Input resistance	96k Ω
Input analogue Ai1 / Ai2 / Ai3	
Reference conditions	EN/IEC 60770-1: Characteristic deviation – Limit value adjustment 15...25°C / 860...1060kPa / 45...75%r.F. / ton240s / battery 35Ah
	Characteristic deviation = Nonlinearity + Hysteresis + Reproducibility FSI = Full Scale Input = Nominal measuring range
Operating range current I	Ai1 / Ai2: 0/4...20mA / FSI 0...28mA / Ri 27R
Operating range voltage U	Ai1 / Ai2: 0...10V / FSI 0...19V / Ri $\geq 1,2\text{MR}$
Operating range resistance R	Ai3: FSI 0...2200Ohm / Io = 340 μA
Resolution	FSI 16 Bit
Characteristic deviation	$\leq \pm 0,05\%$ FSI
Temperature deviation	$\leq \pm 0,1\%$ FSI / 10K
Long term deviation	$\leq \pm 0,05\%$ FSI / year
Input digital Di1 / Di2	
Operating range	$\leq 20\text{kOhm}$ / $\leq 1\text{kHz}$
Transmitter power supply	
Output voltage Uo1 / Uo2	16,6V $\pm 0,3\text{V}$ (0mA) / 15,9V $\pm 0,3\text{V}$ (30mA) / 0...30mA, max. 40mA
Output voltage Uo3 / Uo4	6,7V $\pm 0,2\text{V}$ (0mA) / 6,6V $\pm 0,2\text{V}$ (100mA) / 0...100mA, max. 300mA
Output voltage Uo5	3,8V $\pm 0,2\text{V}$ (0mA) / 3,0V $\pm 0,2\text{V}$ (100mA) / 0...100mA, max. 220mA
Interface Bluetooth	
Version	Bluetooth 5.0 LE (2Mbit/s, Advertising Mode 2s)
Transmit power	$\leq 0,1\text{W}$
Range	Outdoor max. 200m / Indoor max. 40m
Interface 4G/2G	
Version	4G LTE Cat. 1 (B3, B8, B20) 2G EDGE, GSM, GPRS (900MHz/1800MHz)
Transmit power	4G $\leq 0,2\text{W}$ 2G $\leq 2\text{W}$
SIM	Internal SIM + external Micro-SIM
Antenna connection	Connector SMA / 50 Ohm
Data memory	
Memory size	8MB, ≥ 800.000 measuring values
Clock	
Cycle accuracy	$\leq \pm 2$ minutes / month
Environmental conditions	
Environmental temperature	-20°C...+60°C Li-ION battery: load temperature 0...45°C, internally limited
Protection level	IP65/IP67 (EN/IEC 60529)
Climatic classification	4K4H (EN/IEC 60721-3-4)
Shock classification	15g [11ms] (EN/IEC 60068-2-27)
Vibration classification	4g [10...2000 Hz] (EN/IEC 60068-2-6)
EM compatibility	Operation device class B / Industrial range (EN/IEC 61326)
MTTF	258 years
Weight	1,2kg
Materials	
Process wetted	PA, aluminum, PUR, brass, nickel, silicone, NBR

ELECTRICAL CONNECTION

Auxiliary power supply	
Battery 	Li-ION rechargeable battery 
DC supply with backup battery 	DC supply with backup Li-ION rechargeable battery 
	Li-ION rechargeable battery with PV module 
Input	
1x/2x Sensor current 4...20mA, 2-wire 	1x/2x Sensor current 0...20mA, 3-wire 
1x/2x Sensor voltage 0...10, 3-wire 	1x Sensor resistance 0...2200R, 2-wire 
1x/2x Sensor RS485 Modbus® RTU 	1x/2x Switch / Pulse generator 

DIMENSIONS (MM)



BESTELLSCHLÜSSEL

Type	DLF4 Standard
Approval	S Standard
Enclosure type	FA Field enclosure, aluminum YY others
Electronic – Supply	B1 Battery lithium 19Ah / DC supply 7...32V B2 Battery lithium 35Ah / DC supply 7...32V A1 Rechargeable battery Li-ION 20Ah / DC supply 7...32V / PV module YY others
Electronic – Function	0 without 4 4G (LTE Cat-1) / 2G (EDGE, GSM, GPRS) Y others
Electronic – Input	M 2x analogue 0/4...20mA-0...10V / 2x interface RS485 / 2x digital-In / 1x analogue 0...2200R
Tariff	0 Separate billing S1 ACS Port S Standard (1 channel, 5 000 measuring values/month), 3 years S2 ACS Port S Premium (1 channel, 5 000 measuring values/month), 3 years M1 ACS Port M Standard (2 channels, 50 000 measuring values/month), 3 years M2 ACS Port M Premium (2 channels, 50 000 measuring values/month), 3 years L1 ACS Port L Standard (4 channels, 300 000 measuring values/month), 3 years L2 ACS Port L Premium (4 channels, 300 000 measuring values/month), 3 years X1 ACS Port XL Standard (8 channels, 600 000 measuring values/month), 3 years X2 ACS Port XL Premium (8 channels, 600 000 measuring values/month), 3 years
S	
Additional options	-ML Measurement point designation / TAG – Laser marking -KF Configuration / Preset

DLF4

X5

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