

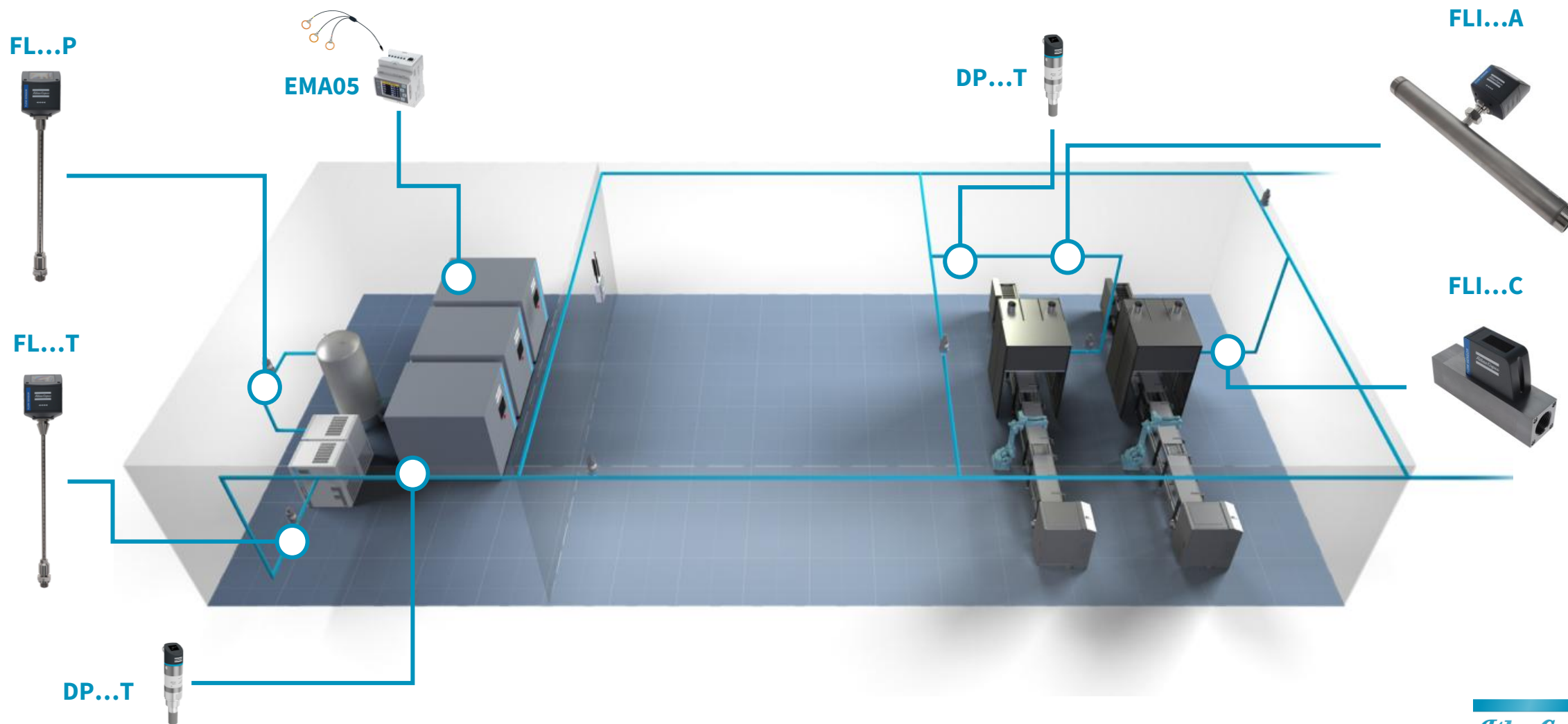
Sensor Catalogue

Content

- [Flow Measurement](#)
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- [Data Logger](#)
- [Dew point Measurement](#)
- [Power Meter](#)
- [Pressure Measurement](#)
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Overview

Measurement system



Flow Measurement

Flow Measurement

Volumetric Flow Ranges – Insertion Types

FL...P



FL...T



DN Pipe Size	Pipe Size	Inner Diameter	FL S93 T	FL S185 T	FL S224 T	FL S200 P	FL S260 P
[]	[Inch]	[mm]	[m³/h]	[m³/h]	[m³/h]	[m³/h]	[m³/h]
DN40	1½	41.9	1.2 ... 366.7	1.5...731.9	1.5...886.2	18...757	18...984
DN50	2	53.1	2.0 ... 600.1	2.5...1197.6	3...1450.0	31...1298	31...1687
DN65	2½	68.9	3.5 ... 1026.5	5.0...2048.6	5...2480.4	56...2311	56...3005
DN80	3	80.9	5.0 ... 1424.4	7.0...2842.7	7...3441.9	80...3270	98...5201
DN100	4	100.0	10 ... 2183.3	12...4357.2	12...5275.7	125...5095	125...6623
DN125	5	125.0	13 ... 3419.6	18...6824.4	18...8263.1	196...8006	196...10408
DN150	6	150.0	18 ... 4930.1	25...9838.9	25...11913.1	283...11548	283...15012
DN200	8	200.0	26 ... 8785.6	33...17533.3	42...21229.5	507...20690	507...26897
DN250	10	250.0	40 ... 13743.9	52...27428.5	60...33210.7	793...32339	793...42040
DN300	12	300.0	60 ... 19814.8	80...39544.1	100...47880.4	1142...46568	1142...60538

Flow Measurement

Volumetric Flow Ranges – Inline Types

FLI...C



DN Pipe Size	Pipe Size	Flow Sensor	Flow Range
[]	[Inch]	[]	[m ³ /h]
DN8	1/4	FLI D08 C	0.3...15
DN15	1/2	FLI D15 C	1.2...60
DN20	³ / ₄	FLI D20 C	2.4...120
DN25	1	FLI D25 C	4.2...210
DN32	1 ¹ / ₄	FLI D32 C	7.2...360

FLI...A



DN Pipe Size	Pipe Size	Flow Sensor	Flow Range
[]	[Inch]	[]	[m ³ /h]
DN15	1/2	FLI D15 A	0.5...90
DN20	³ / ₄	FLI D20 A	0.9...170
DN25	1	FLI D25 A	1.5...290
DN32	1 ¹ / ₄	FLI D32 A	2.0...500
DN40	1 ¹ / ₂	FLI D40 A	3 ... 700
DN50	2	FLI D50 A	4 ... 1000
DN65	2 ¹ / ₂	FLI D65 A	6 ... 1500
DN80	3	FLI D80 A	8 ... 2500

Flow Measurement

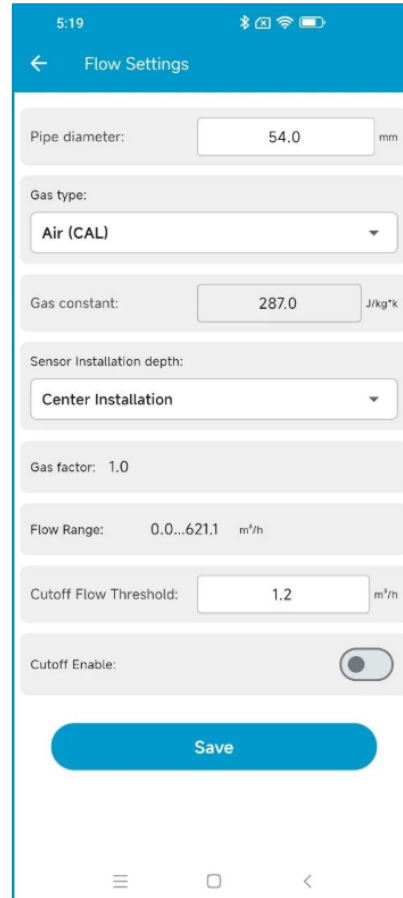
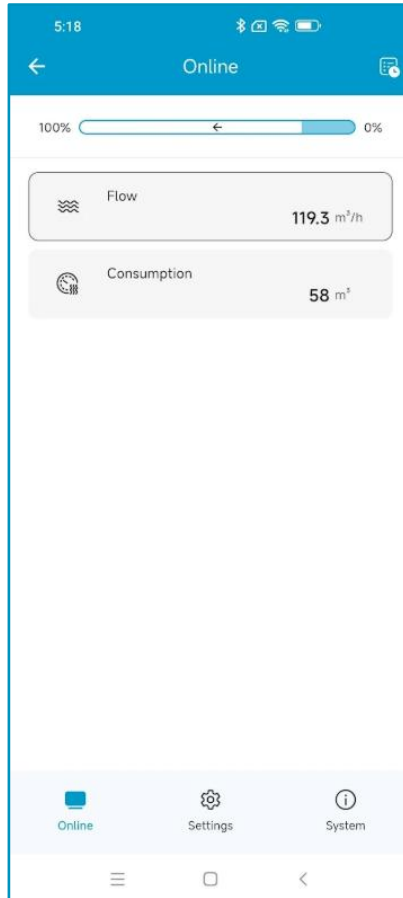
Installation Limitations



	Unit	FL ... T	FL ... P	FLI ... A	FLI ... C
Medium Temperature	°C	-30...140	-20...120	-30...140	0 ... 50
Ambient Temperature	°C	-10...50	0...50	-10...50	0 ... 50
Medium Pressure	bar	0...16	0...16	0...16	0...16
IP Grade	-	IP65	IP65	IP65	IP54

Flow Measurement

SensSee Application



- Smartphone App
- This app allows users to check Flow Sensor readings and perform settings adjustments.
- It uses Bluetooth (Low Energy BLE) to communicate with the Flow Sensors.
- Available for Android & iOS



[Google Play](#)



[App Store](#)

Flow Measurement

Insertion

Flow Measurement - Insertion

What You Need...

Flow Sensor



Pipe Saddle

15 options



Installation kit

4 options



Sensor Cable(s) M12*



* 1pc for Modbus RTU version & 2pc for 4...20mA version

Flow Measurement – Insertion

Thermal Mass – 220mm Shaft

➤ Content:

- 1x Flow Sensor
 - Thermal Mass
 - 220mm shaft
 - Display
 - Single direction
 - 2x M12 connections
- 1x Alignment key
- 1x O-ring
- 2 x M12 connector (PN 1089954646)
- 1x Cable 5m (connectors M12 / RJ45) *
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Max Speed m/s	Shaft Length mm	Output
1830174221	FL S93 T	93	220	4...20mA
1830174222	FL S93 T	93	220	Modbus RTU
1830174223	FL S93 T	93	220	Modbus TCP
1830174224	FL S185 T	185	220	4...20mA
1830174225	FL S185 T	185	220	Modbus RTU
1830174226	FL S185 T	185	220	Modbus TCP
1830174227	FL S224 T	224	220	4...20mA
1830174228	FL S224 T	224	220	Modbus RTU
1830174229	FL S224 T	224	220	Modbus TCP

* Modbus TCP versions only

Flow Measurement – Insertion

Thermal Mass – 300mm Shaft

➤ Content:

- 1x Flow Sensor
 - Thermal Mass
 - 300mm shaft
 - Display
 - Single direction
 - 2x M12 connections
- 1x Alignment key
- 1x O-ring
- 2 x M12 connector (PN 1089954646)
- 1x Cable 5m (connectors M12 / RJ45) *
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Max Speed m/s	Shaft Length mm	Output
1830174236	FL S93 T	93	300	4...20mA
1830174237	FL S93 T	93	300	Modbus RTU
1830174238	FL S93 T	93	300	Modbus TCP
1830138002	FL S185 T	185	300	4...20mA
1830138003	FL S185 T	185	300	Modbus RTU
1830174239	FL S185 T	185	300	Modbus TCP
1830138004	FL S224 T	224	300	4...20mA
1830138005	FL S224 T	224	300	Modbus RTU
1830174240	FL S224 T	224	300	Modbus TCP

* Modbus TCP versions only

Flow Measurement – Insertion

Pitot – 220mm Shaft

➤ Content:

- 1x Flow Sensor
 - Pitot
 - 220mm shaft
 - Display
 - Single direction
 - 2x M12 connections
- 1x Alignment key
- 1x O-ring
- 2 x M12 connector (PN 1089954646)
- 1x Cable 5m (connectors M12 / RJ45) *
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Max Speed m/s	Shaft Length mm	Output
1830174230	FL S200 P	200	220	4...20mA
1830174231	FL S200 P	200	220	Modbus RTU
1830174232	FL S200 P	200	220	Modbus TCP
1830174233	FL S260 P	260	220	4...20mA
1830174234	FL S260 P	260	220	Modbus RTU
1830174235	FL S260 P	260	220	Modbus TCP

* Modbus TCP versions only

Flow Measurement – Insertion

Pitot – 300mm Shaft

➤ Content:

- 1x Flow Sensor
 - Pitot
 - 300mm shaft
 - Display
 - Single direction
 - 2x M12 connections
- 1x Alignment key
- 1x O-ring
- 2 x M12 connector (PN 1089954646)
- 1x Cable 5m (connectors M12 / RJ45) *
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Max Speed m/s	Shaft Length mm	Output
1830138006	FL S200 P	200	300	4...20mA
1830138007	FL S200 P	200	300	Modbus RTU
1830174219	FL S200 P	200	300	Modbus TCP
1830138008	FL S260 P	260	300	4...20mA
1830138009	FL S260 P	260	300	Modbus RTU
1830174220	FL S260 P	260	300	Modbus TCP

* Modbus TCP versions only

Flow Measurement

Inline

Flow Measurement – Inline

C Serie – What You Need...

Flow Sensor



Sensor Cable M8*



* 5m sensor cables already included in the flow meter package

Flow Measurement – Inline

C Serie – G Connection

➤ Content:

- 1x Flow Sensor
 - Thermal Mass
 - G-INT connection
 - Display
 - Integrated Flow Conditioner
 - Single direction
 - 2x M8 connectors
- Sensor cable M8 5m (PN 1089046164)
 - 1x for Modbus RTU versions
 - 2x for 4...20mA versions
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Size	Output
1830138010	FLI D08 C	DN8 - 1/4	4...20mA
1830138012	FLI D08 C	DN8 - 1/4	Modbus RTU
1830138014	FLI D15 C	DN15 - 1/2	4...20mA
1830138016	FLI D15 C	DN15 - 1/2	Modbus RTU
1830138018	FLI D20 C	DN20 - 3/4	4...20mA
1830138020	FLI D20 C	DN20 - 3/4	Modbus RTU
1830138022	FLI D25 C	DN25 - 1	4...20mA
1830138024	FLI D25 C	DN25 - 1	Modbus RTU
1830138026	FLI D32 C	DN32 - 1.25	4...20mA
1830138028	FLI D32 C	DN32 - 1.25	Modbus RTU

Flow Measurement – Inline

C Serie – NPT Connection

➤ Content:

- 1x Flow Sensor
 - Thermal Mass
 - NPT-INT connection
 - Display
 - Integrated Flow Conditioner
 - Single direction
 - 2x M8 connectors
- Sensor cable M8 5m (PN 1089046164)
 - 1x for Modbus RTU versions
 - 2x for 4...20mA versions
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Size	Output
1830138011	FLI D08 C	DN8 - 1/4	4...20mA
1830138013	FLI D08 C	DN8 - 1/4	Modbus RTU
1830138015	FLI D15 C	DN15 - 1/2	4...20mA
1830138017	FLI D15 C	DN15 - 1/2	Modbus RTU
1830138019	FLI D20 C	DN20 - 3/4	4...20mA
1830138021	FLI D20 C	DN20 - 3/4	Modbus RTU
1830138023	FLI D25 C	DN25 - 1	4...20mA
1830138025	FLI D25 C	DN25 - 1	Modbus RTU
1830138027	FLI D32 C	DN32 - 1.25	4...20mA
1830138029	FLI D32 C	DN32 - 1.25	Modbus RTU

Flow Measurement – Inline

A Serie – What You Need...

Flow Sensor

16 options



Sensor Cable(s) M12*

2 options



* 1pc for Modbus RTU version & 2pc for 4...20mA version

Flow Measurement – Inline

A Serie – R Connection

➤ Content:

- 1x Flow Sensor
 - Thermal Mass
 - R-EXT connection
 - Display
 - Single direction
 - 2x M12 connections
- 2 x M12 connector (PN 1089954646)
- 1x Cable 5m (connectors M12 / RJ45)*
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Size	Output
1830174203	FLI D15 A	DN15 – 1/2	4...20mA
1830174204	FLI D15 A	DN15 – 1/2	Modbus RTU
1830174205	FLI D15 A	DN15 – 1/2	Modbus TCP
1830174206	FLI D20 A	DN20 – 3/4	4...20mA
1830174207	FLI D20 A	DN20 – 3/4	Modbus RTU
1830174208	FLI D20 A	DN20 – 3/4	Modbus TCP
1830174209	FLI D25 A	DN25 – 1	4...20mA
1830174210	FLI D25 A	DN25 – 1	Modbus RTU
1830174211	FLI D25 A	DN25 – 1	Modbus TCP
1830174212	FLI D32 A	DN32 – 1.25	4...20mA
1830174213	FLI D32 A	DN32 – 1.25	Modbus RTU
1830174214	FLI D32 A	DN32 – 1.25	Modbus TCP
1830138031	FLI D40 A	DN40 - 1.5	4...20mA
1830138033	FLI D40 A	DN40 - 1.5	Modbus RTU
1830174215	FLI D40 A	DN40 - 1.5	Modbus TCP
1830138035	FLI D50 A	DN50 - 2	4...20mA
1830138037	FLI D50 A	DN50 - 2	Modbus RTU
1830174216	FLI D50 A	DN50 - 2	Modbus TCP
1830138039	FLI D65 A	DN65 - 2.5	4...20mA
1830138041	FLI D65 A	DN65 - 2.5	Modbus RTU
1830174217	FLI D65 A	DN65 - 2.5	Modbus TCP
1830138043	FLI D80 A	DN80 - 3	4...20mA
1830138045	FLI D80 A	DN80 - 3	Modbus RTU
1830174218	FLI D80 A	DN80 - 3	Modbus TCP

* Modbus TCP versions only

Flow Measurement – Inline

A Serie – NPT Connection

➤ Content:

- 1x Flow Sensor
 - Thermal Mass
 - NPT-EXT connection
 - Display
 - Single direction
 - 2x M12 connections
- 2 x M12 connector (PN 1089954646)
- 2x NPT Adapter
- 1x Cable 5m (connectors M12 / RJ45) *
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Size	Output
1830174187	FLI D15 A	DN15 – 1/2	4...20mA
1830174188	FLI D15 A	DN15 – 1/2	Modbus RTU
1830174189	FLI D15 A	DN15 – 1/2	Modbus TCP
1830174190	FLI D20 A	DN20 – 3/4	4...20mA
1830174191	FLI D20 A	DN20 – 3/4	Modbus RTU
1830174192	FLI D20 A	DN20 – 3/4	Modbus TCP
1830174193	FLI D25 A	DN25 – 1	4...20mA
1830174194	FLI D25 A	DN25 – 1	Modbus RTU
1830174195	FLI D25 A	DN25 – 1	Modbus TCP
1830174196	FLI D32 A	DN32 – 1.25	4...20mA
1830174197	FLI D32 A	DN32 – 1.25	Modbus RTU
1830174198	FLI D32 A	DN32 – 1.25	Modbus TCP
1830138030	FLI D40 A	DN40 - 1.5	4...20mA
1830138032	FLI D40 A	DN40 - 1.5	Modbus RTU
1830174199	FLI D40 A	DN40 - 1.5	Modbus TCP
1830138034	FLI D50 A	DN50 - 2	4...20mA
1830138036	FLI D50 A	DN50 - 2	Modbus RTU
1830174200	FLI D50 A	DN50 - 2	Modbus TCP
1830138038	FLI D65 A	DN65 - 2.5	4...20mA
1830138040	FLI D65 A	DN65 - 2.5	Modbus RTU
1830174201	FLI D65 A	DN65 - 2.5	Modbus TCP
1830138042	FLI D80 A	DN80 - 3	4...20mA
1830138044	FLI D80 A	DN80 - 3	Modbus RTU
1830174202	FLI D80 A	DN80 - 3	Modbus TCP

* Modbus TCP versions only

Data Logger

Data Logger

DL P50



➤ Part number: **1830147340**

➤ Content:

➤ 1x Data logger

- Storage: 100 million values
- Interface: Ethernet (Modbus/TCP), RS-485 (Modbus/RTU), USB-C port
- Analog inputs: 2 analog inputs 0/4 ... 20 mA, 0 ... 10 V & 2 pulse inputs
- Alarm output: 2 relays, 230 VAC, 3 A, NC
- Sensor supply: 50W / 24 VDC

➤ 1x Cable USB-C to USB-A

➤ 1 x Instruction manual

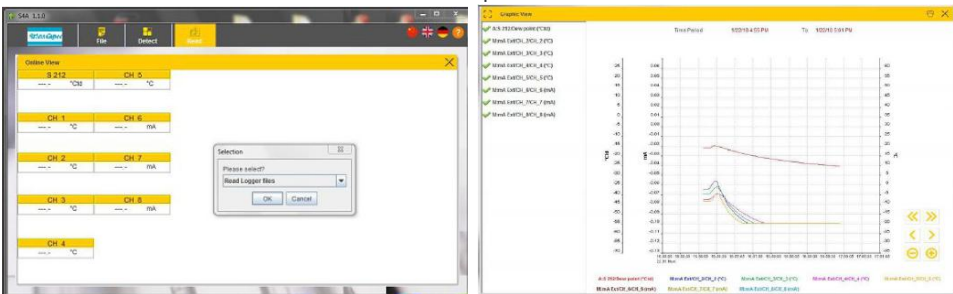
➤ Remarks:

- Power cord not included
- USB-C stick not included

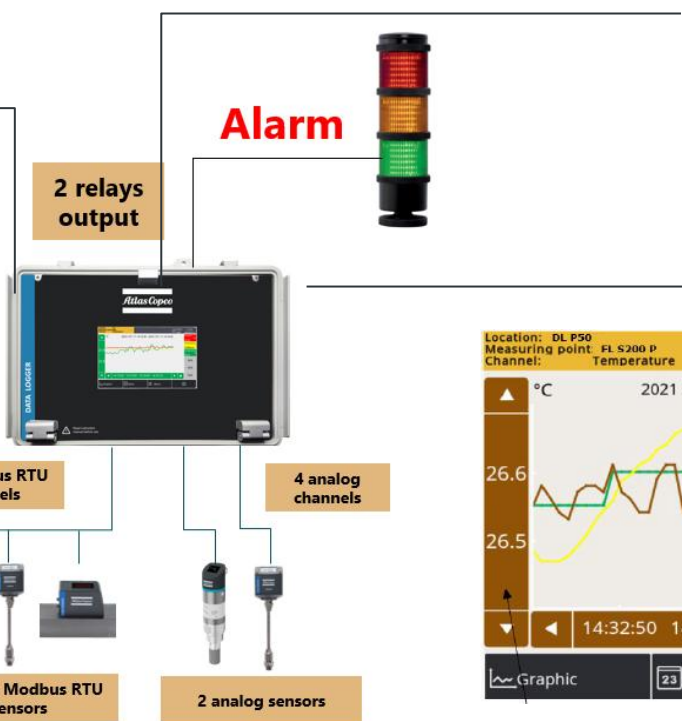
Data logger - communication



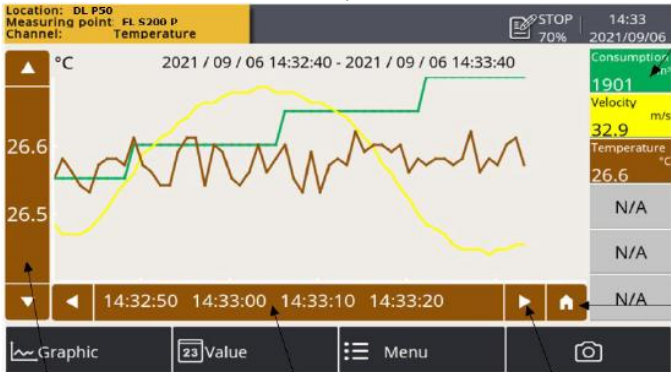
Export to customer system via
Modbus RTU and TCP



Local software via Ethernet

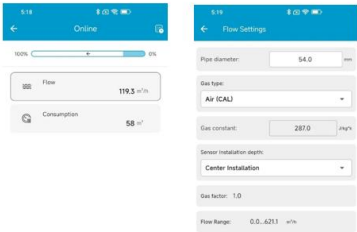


Cloud – coming soon



100 milion data point – virtual
signals (math calculation)

Flow Measurement
SensSee App



Dew Point Measurement

Dew Point Measurement

AC Branded

➤ Content:

- 1x Dew point Sensor
 - G1/2 connection
 - Display
 - 1x M12 connector
 - Output: 4...20mA / Modbus RTU
- 1 x M12 connector (PN 1089954646)
- 1x Instruction manual
- 1x Calibration certificate



Part Number	Name	Dew Point	Pressure Measurement
1830154911	DP T20	-20...+50 °C	N/A
1830154912	DP T20 P	-20...+50 °C	0...16 bar
1830154913	DP T60	-60...+20 °C	N/A
1830154914	DP T60 P	-60...+20 °C	0...16 bar
1830154915	DP T100	-100...+20 °C	N/A
1830154916	DP T100 P	-100...+20 °C	0...16 bar

➤ Remarks:

- Temperatures in °C / Pressures in bar(g)

➤ Accessories:

- PN 1830154918: Measuring chamber Bypass Type - 6mm hose
- PN 1830154919: Measuring chamber – Quick connector PM20
- PN 0605870244: NPT thread adapter

Power Measurement

Energy Measurement

EM A05 - Kit



► Power Meter

- Display
- Output: Modbus RTU
- IP20

► Display Data

- Instantaneous value
- Energy
- Harmonics
- Phasor diagram
- Demand
- Unbalance
- Maximum & minimum

Energy Measurement

EM A05 - Kit



- Part number: **1837088106**
- Content:
 - 1x Energy Meter EM A05 PN **1830203005**
 - 1x MCB ABB S204-B6 PN **1089041969**
 - 1x Modbus Cable 3m PN **0017261017**
 - 1x Terminator Resistor 120ohm PN **1089031029**
- Remarks:
 - Available Spare Parts indicated in Content List
 - Rogowski Coils not included in Kit (to be ordered separately)
 - IPC 16...150 mm² PN **1830092451**



Energy Measurement

EM A05 - Rogowski Coils

- Content:
 - 1x Rogowski Coil
 - Accuracy: 0.5% (1...120% Nominal Current / Vertically Centered position)
 - Length: 3m
 - Connector: RJ12
 - 1 x Calibration Certificate



Part Number	Diameter	Nominal Current	Phases	Sensitivity
1830203006	30 mm	100 A	3PH	50 mV/kA
1830203007	100 mm	1000 A	3PH	85 mV/kA
1830203008	150 mm	3000 A	3PH	85 mV/kA
1830203009	30 mm	100 A	1PH	50 mV/kA
1830203010	100 mm	1000 A	1PH	85 mV/kA

Pressure Measurement

Pressure Measurement

Pressure Transmitters 4..20mA



➤ Part numbers:

- **1089049250:** 0 to 4 bar(e)
- **1089049254:** 0 to 6bar(e)
- **1089049251:** 0 to 10bar(e)
- **1089049252:** 0 to 16bar(e)
- **1089049258:** 0 to 40bar(e)
- **1089049253:** 0 to 60bar(e)

➤ Content:

- 1x Pressure Sensor
 - Mechanical connection: G $\frac{1}{4}$
 - Electrical connection: Terminal box to DIN 43650, style A
 - Power supply 10 to 30 V DC
 - Output 4...20mA
- No cable included

Sensor Cables

Sensor Cables

Sensor Cable M8



Part Number	Length
1089046163	3m
1089046164	5m
1089046165	10m

- Remarks:
 - M8-4F connector on 1 side / open wires on other side
 - Shielded cable

Sensor Cables

Sensor Cable M12



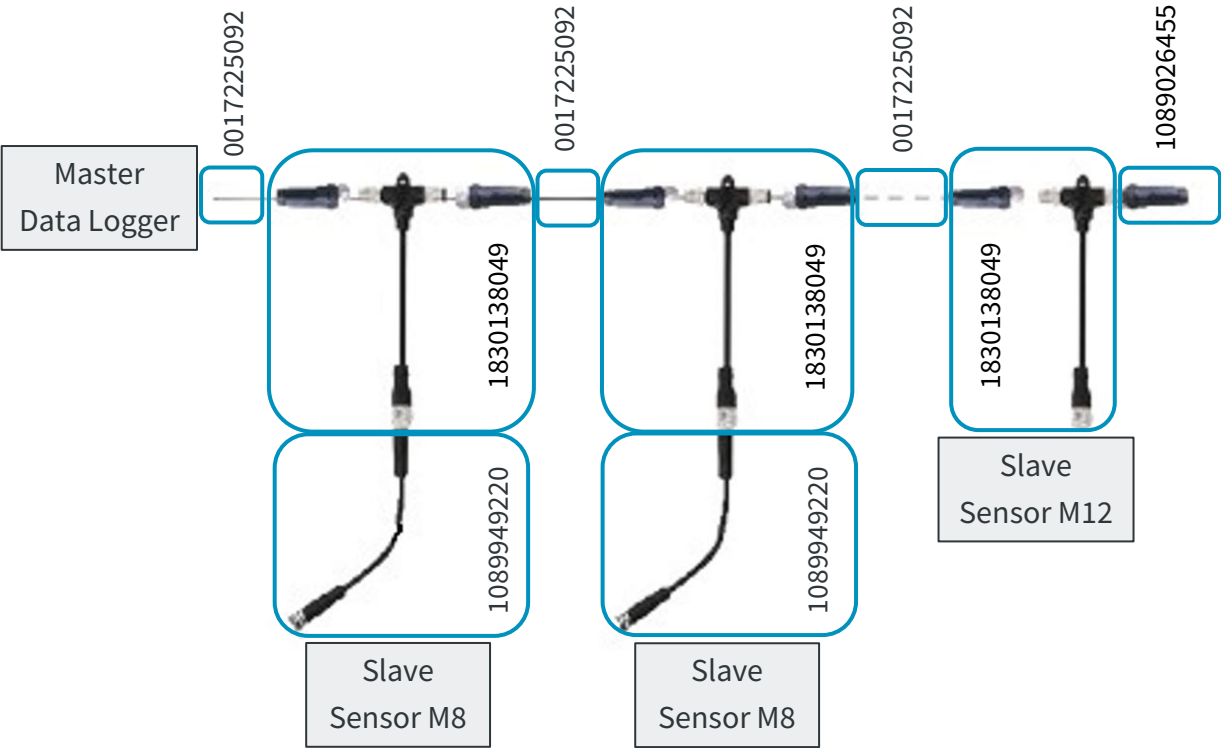
Part Number	Length
1830094307	5m
1089949219	10m

- Remarks:
 - M12 connector on 1 side / open wires on other side
 - 24AWG / 5C
 - Rated voltage 300V

Sensor Cables

Sensor Cables & Connectors for Creating Modbus Network

Example



Part Number	Description
0017225092	RS-485 cable, 4 pole twisted pairs, AWG24 (0.2 mm ²), 2 x 2 x 0.22mm ² 50 m reel
1089949220	M8 female to M12 male converter cable, 10 cm
1830138049	M12 (RS485 MODBUS) Splitter Set: - 1 x splitter T-piece - 2 x M12 connector (PN 1089954646)
1089026455	M12 termination resistor for RS-485 Bus (120 Ohm)
1089954646	M12 connector female

