

ATM monitoring systems, **1 to 16-channel dataloggers**



Monitoring Systems **models and variations**

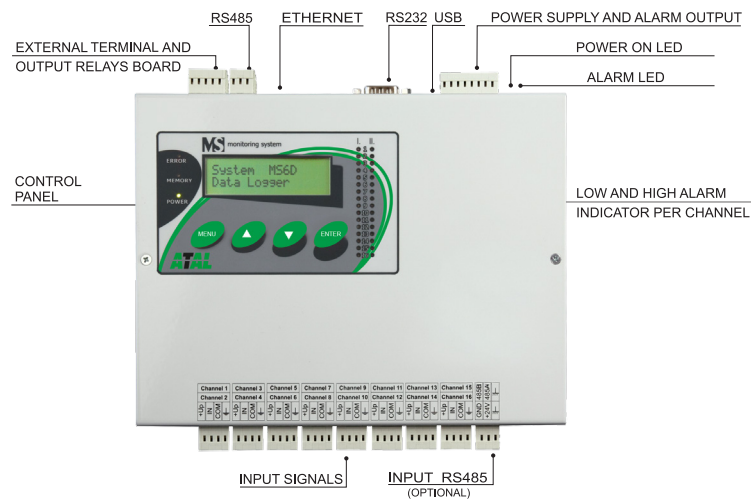
System Overview

The table below highlights the key differences between the available ATAL monitoring system configurations.

The ATM-055D monitoring system is based on a modular hardware input architecture, whereas the ATM-06D, ATM-06DT (desktop) and ATM-06DR (rack mount) models are equipped with 16 universal, software configurable inputs as standard.

Features:

- Up to 16 measurement inputs per monitoring system
- ATM-06D: 16 universal, software programmable inputs
- ATM-055D: Modular configuration with 1 to 16 inputs, supported by a wide range of interchangeable input modules
- Standard USB and Ethernet interface
- Internal memory capacity for up to 480,000 readings, with support for automatic data download
- Configurable logging intervals ranging from 1 second to 24 hours, individually selectable per channel
- Multiple recording and logging modes, suitable for a wide variety of monitoring applications
- High system accuracy, ensuring reliable and repeatable measurement results
- Virtual (calculated) channels: available on unused inputs, enabling derived values without additional hardware
- Clear indication of alarm states, supporting effective monitoring and rapid response to threshold violations



ATM-06DT- Desktop



ATM-06DR - Rack mount



ATM-06D

The ATM-06D is equipped with **16 software configurable inputs**.



Bottom view: sensor terminals



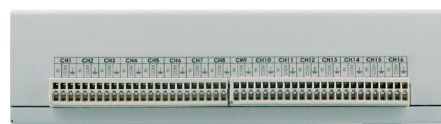
Selectable sensor supply voltage: 12 V DC / 24 V DC

ATM-055D

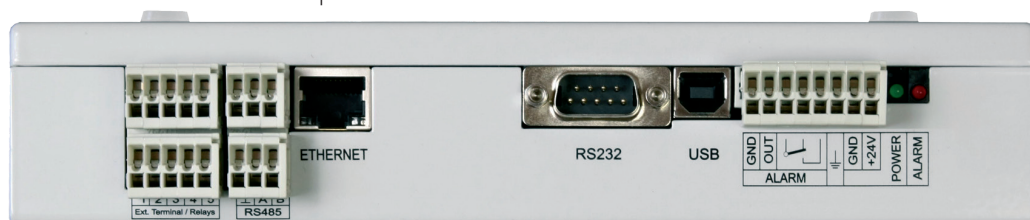
The ATM-055D can be configured with **userselectable hardware input modules**.



Bottom view: sensor terminals



Top view: communication interfaces

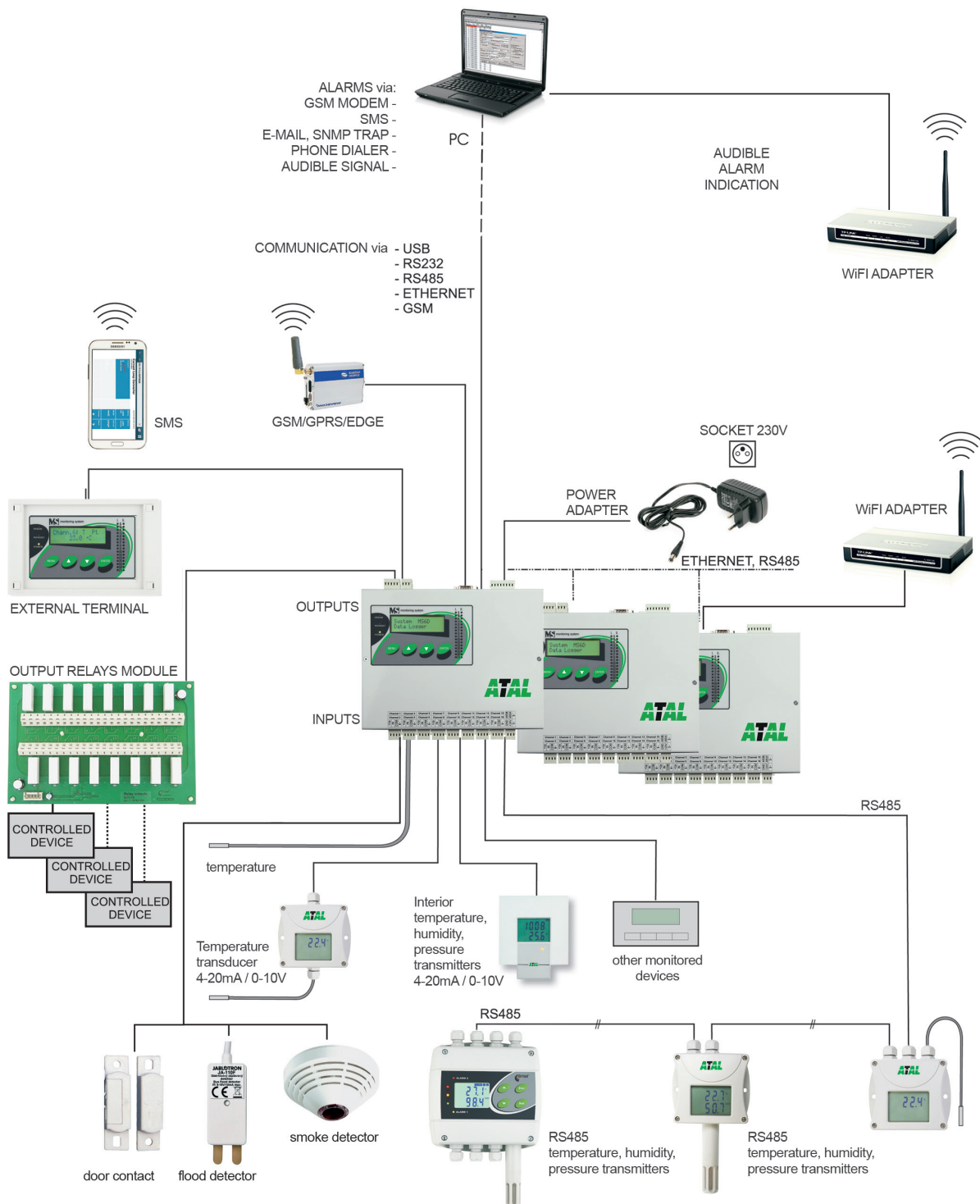


RS232, RS485, USB and Ethernet interface

ATM-06D	main differences	ATM-055D
16 software programmable inputs	inputs	1 - 16 hardware input modules
20 mA DC	maximum measured DC current	5 A DC
10 V DC	maximum measured DC voltage	75 V DC
18 mV DC	most sensitive measuring range of dc voltage	100 mV DC
-	maximum measured AC current	5 A AC
-	maximum measured AC voltage	50 V AC
-	input for measurement of frequency	0 to 5 kHz
-	input for counting of pulses	Yes

Common connectivity options

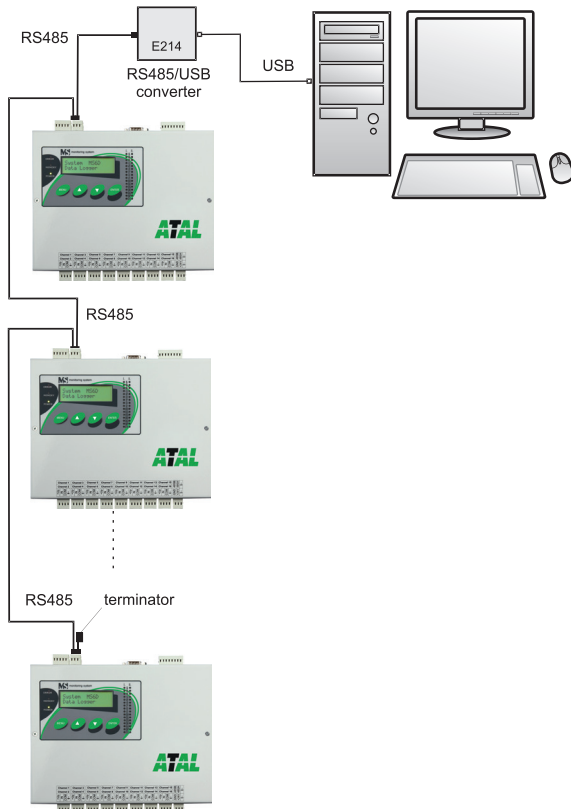
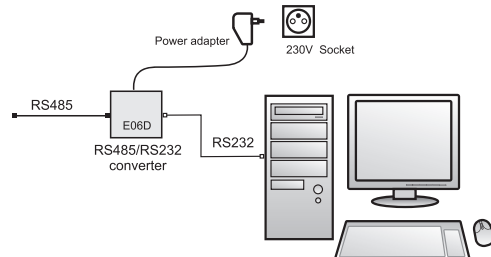
The ATM monitoring systems support a wide range of sensors with **analogue outputs**, including RTDs, thermocouples, 4–20 mA, and 0–10 V signals, as well as binary contacts. In addition, the systems can read registers from sensors equipped with an **RS485 interface**, with support for the **Modbus RTU protocol**. The ATM units offer extensive communication capabilities, supporting **RS232, RS485, USB, Ethernet, and GSM interfaces**. By using **Wi Fi routers**, multiple monitoring systems can be wirelessly integrated into a single network.



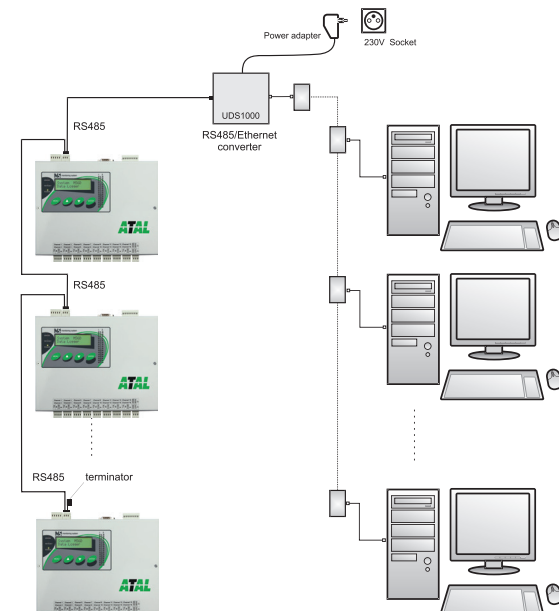
Communication options

In the event that the number of **16 channels** is insufficient, then it is possible to connect multiple together via **RS485** or via the **Ethernet network**. A **unique RS485 or IP address** is assigned to each unit. However, the distance between data loggers MS connected together via RS485 should not exceed **1200 meters**.

RS485/USB



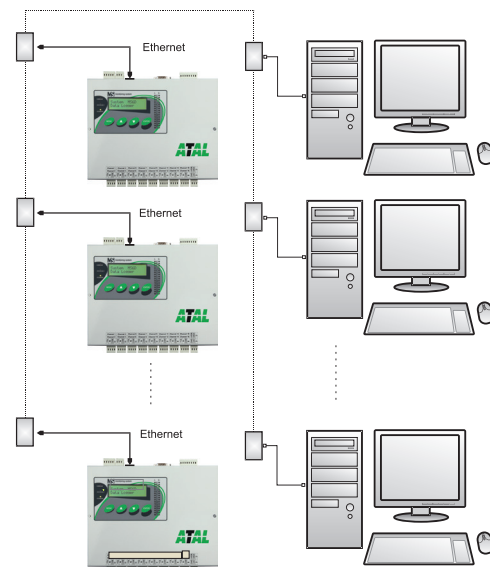
RS485/RS232



Network and communication characteristics:

- Maximum total cable length: **1,200 metres**
- Up to **32 dataloggers** can be connected
- Maximum communication speed: **115,200 Bd**
(full memory download in approx. 4 minutes 30 seconds)
- Communication via dedicated **datalogger software**
- Memory download time of **approximately 2 minutes 30 seconds** (depending on network throughput)
- Support for alarm communication via multiple protocols: **Web, SNMP, SMTP, SysLog, SOAP and Modbus**
- Each data logger is assigned its own IP address, with **DHCP support**

RS485/Ethernet



ATM-06D – Software configurable inputs

Each ATM-06D monitoring system is equipped with **16 software configurable inputs**, which can be configured directly from the user PC. In addition to analogue and digital input signals, the system can also record data from sensors connected via the **RS485 bus**, supporting the **Modbus RTU and Advantech** protocols. The **RS485 input** is available as an **optional accessory**. FS = Full Scale, MV = Measured Value

Note:
The standard inputs are **not galvanically isolated**, with the exception of the RS485 input. For applications requiring **galvanically isolated inputs**, a wide range of dedicated input modules is available for the **ATM-055D monitoring system**.

Measured values		Range	Accuracy	Note
Current	DC	4 to 20 mA	$\pm 0.1 \% \text{ FS } (\pm 0.02 \text{ mA})$	it is possible to connect passive sensors (powered by monitoring system) or active sensor with its own power supply. Input resistance about 110 Ohms.
Voltage	DC	-10 to +10 V	$\pm 0.1 \% \text{ FS } (\pm 10 \text{ mV})$	input resistance about 10 MOhms
		-1 to +1 V	$\pm 0.1 \% \text{ FS } (\pm 1 \text{ mV})$	input resistance about 10 MOhms
		-100 to +100 mV	$\pm 0.1 \% \text{ FS } (\pm 100 \text{ }\mu\text{V})$	input resistance about 10 MOhms
		-18 to +18 mV	$\pm 0.1 \% \text{ FS } (\pm 18 \text{ }\mu\text{V})$	input resistance about 10 MOhms
Resistance	two-wire resistance measurement	0 to 300 Ohms	$\pm 0.1 \% \text{ FS } (\pm 0.3 \text{ Ohms})$	measuring current approximately 0.8 mA @ 50 ms pulse
		0 to 3000 Ohms	$\pm 0.1 \% \text{ FS } (\pm 3 \text{ Ohms})$	measuring voltage approximately 0.5 mA @ 50 ms pulse
		0 to 10000 Ohms	$\pm 0.1 \% \text{ FS } (\pm 10 \text{ Ohms})$	measuring current approximately 0.1 mA @ 50 ms pulse
Temperature probes Pt and Ni	Ni1000	-50 to +250 °C	$\pm 0.2 \text{ }^{\circ}\text{C } (-50 \text{ to } 100 \text{ }^{\circ}\text{C})$	Ni1000/6180 ppm, two-wire connection
		-50 to +250 °C	$\pm 0.2 \% \text{ MV } (100 \text{ to } 250 \text{ }^{\circ}\text{C})$	measuring current approximately 0.5 mA @ 50 ms pulse
	Pt100	-200 to +600 °C	$\pm 0.2 \text{ }^{\circ}\text{C } (-200 \text{ to } +100 \text{ }^{\circ}\text{C})$	Pt100/3850 ppm, two-wire connection
		-200 to +600 °C	$\pm 0.2 \% \text{ MV } (+100 \text{ to } +600 \text{ }^{\circ}\text{C})$	measuring current approximately 0.8 mA @ 50 ms pulse
	Pt1000	-200 to +600 °C	$\pm 0.2 \text{ }^{\circ}\text{C } (-200 \text{ to } +100 \text{ }^{\circ}\text{C})$	Pt1000/3850 ppm, two-wire connection
		-200 to +600 °C	$\pm 0.2 \% \text{ MV } (+100 \text{ to } +600 \text{ }^{\circ}\text{C})$	measuring current about 0.5 mA @ 50 ms pulse
Thermocouple	K (NiCr-Ni)	-200 to 1300 °C	$\pm (0.3 \% \text{ MV } + 1.5 \text{ }^{\circ}\text{C})$ MS6D only	linearized, with cold junction compensation, datalogger must be placed in recommended working position
	T (Cu-CuNi)	-200 to 400 °C	$\pm (0.3 \% \text{ MV } + 1.5 \text{ }^{\circ}\text{C})$ MS6D only	linearized, with cold junction compensation, datalogger must be placed in recommended working position
	J (Fe-Co)	-200 to 750 °C	$\pm (0.3 \% \text{ MV } + 1.5 \text{ }^{\circ}\text{C})$ MS6D only	linearized, with cold junction compensation, datalogger must be placed in recommended working position
	S (Pt10 % Rh-Pt)	0 to 1700 °C	$\pm (0.3 \% \text{ MV } + 1.5 \text{ }^{\circ}\text{C})$	linearized, with cold junction compensation, datalogger must be placed in recommended working position
	N (NiCrSi-NiSiMg)	-200 to 1300 °C	$\pm (0.3 \% \text{ MV } + 1.5 \text{ }^{\circ}\text{C})$ MS6D only	linearized, with cold junction compensation, datalogger must be placed in recommended working position
	B (Pt30 % Rh-Pt)	100 to 1800 °C	$\pm (0.3 \% \text{ MV } + 1.0 \text{ }^{\circ}\text{C})$ in range 300 to 1800 °C	linearized, without cold junction compensation
Thermistor	NTC with selectable formula	up to maximum thermistor resistance 11000 Ohms	according to the used resistance range (see measurement of resistance)	the same characteristics for all connected thermistors
		up to maximum thermistor resistance 11000 Ohms	according to the used resistance range (see measurement of resistance)	default settings: R25=2252 Ohms, R80 = 282.7 Ohms
Binary signal	potential-less contact	binary signal	binary signal	input voltage for state „L“ (IN-COM) < 0.8 V
		binary signal	binary signal	input voltage for state „H“ (IN-COM) > 2 V
	open collector	binary signal	binary signal	resistance of closed contact for state „L“ (IN-COM) < 1 kOhms
	voltage levels	binary signal	binary signal	resistance of open contact for state „H“ (IN-COM) > 10 kOhms
		binary signal	binary signal	minimum duration for sensing of change: 200 ms
RS485	input for serial signal RS485	on request	on request	input serves for reading from devices supporting protocol ModBus RTU or Advantech
		on request	on request	connected to terminals next to terminals for channel 15 and 16
		on request	on request	input can work with 16 devices
		on request	on request	galvanically isolated

Parameters of inputs MS55D

Measured values		Module types	Range	Accuracy	Notes
Current	DC	A0	4 to 20 mA	± 0.1 % FS	with source approximately 21 V for two-wire transducers with current loop (e.g. temperature and humidity transducers COMET).
					only galvanic not isolated
		A1*	4 to 20 mA		for passive sensing of current, Rin = 14 Ohms
		B0*	0 to 20mA		
		B1*	0 to 1 A		
	AC	B2*	0 to 5 A	input resistance Rin = 0.04 Ohms	
		C0	0 to 20 mA	± 1 % FS	galvanic isolated, sinusoidal signal at a frequency of 50 Hz input resistance Rin by type 0.04 Ohm to 14 Ohms
		C1	0 to 1 A	± 1 % FS	
C2	0 to 5 A				
Voltage	DC	D0*	0 to 100 mV	± 0.1 % FS	input resistance Rin by a 900 kOhms to 10 Mohms
		D1*	0 to 1 V		
		D2*	0 to 10 V		
		D4*	0 to 75 V		
		D5*	-10 to +10 V	± 0.1 % FS (± 20 mV)	
	AC	E0	0 to 100 mV	± 1 % FS	only galvanic isolated, sinusoidal signal at a frequency of 50 Hz input resistance Rin by type 700 kOhms to 10 Mohms
		E1	0 to 1 V		
		E2	0 to 10 V		
E4		0 to 50 V			
Resistance		F*	must be specified	± 0.1 % FS	two-wire connection
Temperature probes Pt and Ni	Ni1000	J*	-50 to +250 °C	± 0.2 °C (-50 to 100 °C)	Ni1000/6180 ppm, two-wire connection
				± 0.2 % MV (100 to 250 °C)	measuring current of approximately 0.25 mA continuously
	Pt100	K*	-140 to +600 °C	± 0.2 °C (-140 to +100 °C)	Pt100/3850 ppm, two-wire connection
				± 0.2 % MV (+100 to +600 °C)	measuring current of approximately 2 mA continuously
	Pt1000	K1*	-140 to +600 °C	± 0.2 °C (-140 to +100 °C)	Pt1000/3850 ppm, two-wire connection
				± 0.2 % MV (+100 to +600 °C)	measuring current of approximately 0.2 mA continuously
Pt1000	K3	-10 to +50 °C	± 0.06 °C	Pt1000/3850 ppm, two-wire connection measuring current of approximately 0.2 mA continuously	
Thermo couple	K (NiCr-Ni)	N*	-70 to +1300 °C	± 0.3 % MV + 1.5 °C	linearized, cold junction compensation, datalogger must be placed in recommended working position
	T (Cu-CuNi)	T*	-200 to +400 °C		
	J (Fe-Co)	O*	-200 to 750 °C		
	S (Pt10 %Rh-Pt)	P*	0 to 1700 °C	± 0.3 % MV +1.5 °C (200 to 1700 °C)	
	B (Pt30 %Rh-Pt)	Q*	100 to 1800 °C	± 0.3 % MV+1.0 °C (300 to 1800 °C)	
Binary signal	Dry-contact	S*	binary signal		maximum resistance of closed contact is 1000 Ohms minimum duration for recording is 200 ms
	voltage, galvanically isolated	S1	binary signal		voltage for „H“ state is 3 V to 30 V DC @ 9 mA max minimum duration for recording: 200 ms galvanically isolated
Pulse counter	Dry-contact, galvanically isolated	CTU	31 bits, 5 kHz max.		voltage change of the counter state is 3 V to 24 V DC backup power, filter bouncing galvanically isolated
	Dry-contact, open connector	CTK	31 bits, 5 kHz max.		maximum resistance of closed contact is 10 kOhms minimum open contact resistance is 250 kOhms backup power, filter bouncing
Frequency	input voltage signal measurement, galvanically isolated	FU	0 to 5 kHz	± (0.2 % MV + 1 Hz)	input voltage for „H“: 3 V to 24 Vdc @ 7 mA minimum duration of input pulse: 30 µs galvanically isolated
			resolution 1 Hz		
	measurement frequency switching contact, galvanically not isolated	FK	0 to 5 kHz	± (0.2 % MV + 1 Hz)	maximum resistance of closed contact is 10 kOhms minimum open contact resistance is 250 kOhms minimum duration of input pulse: 30 µs
			resolution 1 Hz		
RS485	input for serial signal RS485	RP	digital transmission		input supports Modbus RTU or Advantech connected devices must have the same communication parameters input can work with up to 16 devices galvanic isolated, MS can be equiped wit multiple RP modules

Optional accessories for **monitoring**

Sensors / transmitters / probes

ATAL offers a wide range of sensors, transmitters, and probes compatible with the ATM monitoring systems. Sensors can be connected using analogue signals (RTD, thermocouple, 4-20 mA, 0-10 V or contacts) or via digital communication over RS485 in a serial network (in a star – parallel - wiring configuration). A combination of analogue and digital connections is also supported, allowing flexible system configuration for a wide variety of monitoring applications.

Analog sensors 4-20 mA, 0-10 V

Design transmitter of temperature and CO₂

Output	4-20 mA	0-10 V
Type	AT-VLI-105DA	AT-VLI-105DV

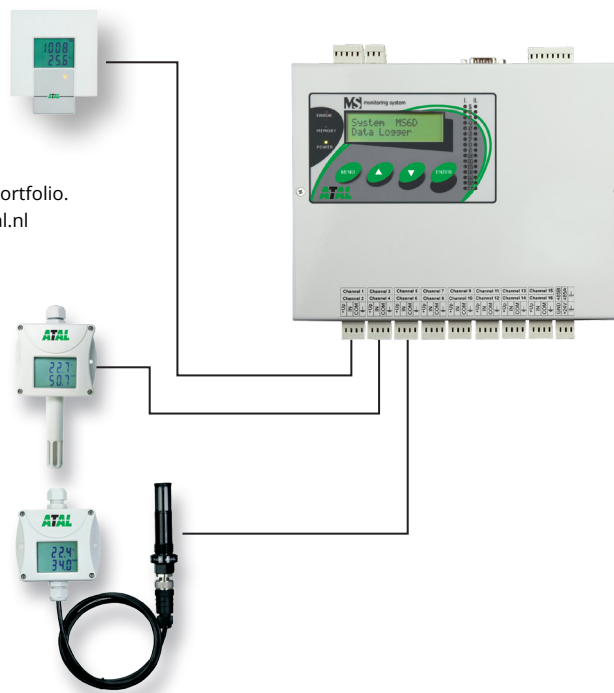
A wide range of additional industrial and indoor sensors, including regulators and probes, is available via the ATAL portfolio. Further information can be found on our website: www.atal.nl

Temperature and humidity transmitter

Output	4-20 mA	0-10 V
Type	TRA-102D	TRV-102D

Temperature and humidity transmitter with external probe

Output	4-20 mA	0-10 V
Type	TRA-104D	TRV-104D



Digital sensors and regulators with RS485 output

Design transmitter of temperature, humidity and CO₂

Output	RS485
Type	TRP485-105D

Temperature transmitter for Pt1000 probes

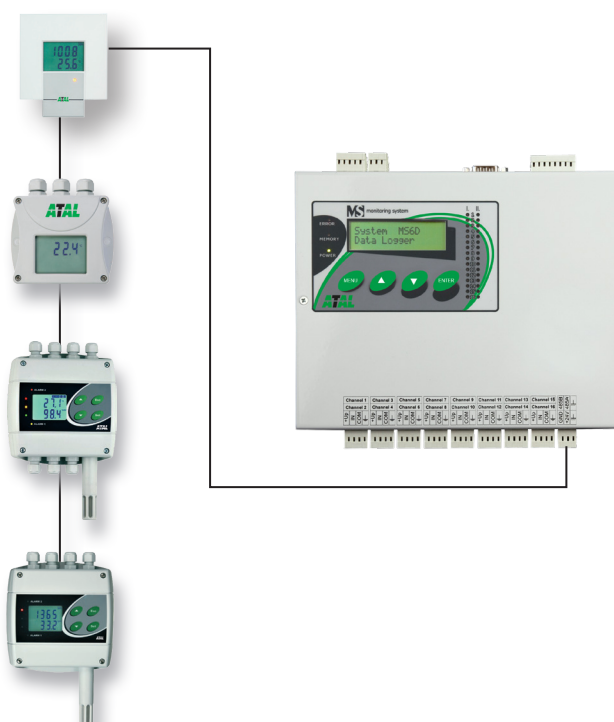
Output	RS485
Type	TE485-102D

Temperature and humidity regulator with digital inputs

Output	RS485	2 x Relay
Type	STR485-102	

Temperature, humidity and CO₂ regulator

Output	RS485	2 x Relay
Type	AT-VLS-102DRS	



Communication & converters



ATM-AC43

Galvanically isolated RS485 input (ATM 06D)
Galvanically isolated input for serial RS485 communication, designed for reading devices supporting Modbus RTU or Advantech protocols. The RS485 input can be added as an optional accessory.



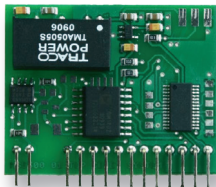
ATM-AC08 – RS232 / RS485 converter

Converter for connecting RS485 devices to a PC via an RS232 (COM) port. Supplied with AC/DC adapter and T485 terminator. Recommended when the Monitoring System is located more than 10 metres from the PC.



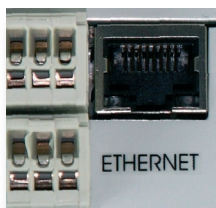
ATM-AC10 – USB / RS485 converter

Converter for connecting RS485 devices to a PC via USB. Powered directly from the USB interface and supplied with T485 terminator. Recommended when the Monitoring System is located more than 10 metres from the PC.



ATM-RP – RS485 input module (ATM 055D)

RS485 input module for the ATM 055D Monitoring System. Only devices using the same communication speed and protocol may be connected to a single RP module. Multiple RP modules can be installed per system. Supports Modbus RTU and Advantech protocols.

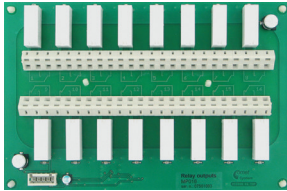


ATM-AC19 – Ethernet communication interface

Ethernet interface extending the communication capabilities of the Monitoring System. Supports SNMP, SOAP, web interface, and Modbus TCP. When alarm limits are exceeded, notifications can be sent via e mail or SNMP traps to predefined recipients.

Accessories

Relay modules & control



ATM-05-AC01 – Relay module (16 relays)

Relay module with **16 mains relays (250 V / 8 A)** featuring change over contacts.

Each relay can be controlled based on alarm conditions from individual input channels, according to the user defined program. Requires connection cable **ATM-AC35**. DIN rail mounting brackets **ATM-AC34** are available.

MP050 – Relay module for rack mounting

Relay module designed for installation in the **ATM-06DR (19" rack)**. Equipped with **16 relays**, maximum switching voltage **50 V AC / 75 V DC**, with change over contacts. Supplied with connection cable and blind plug.

Power & backup supplies



PS-ATM – Universal AC/DC power adapter

Switch mode power supply 24 V DC / 1 A for powering terminals.

A5948 – DIN rail power supply

Switch mode power supply 230 V AC / 24 V DC / 2.5 A for 35 mm DIN rail mounting, with dual 24 V DC outputs. Supplied with 100 mm DIN rail.

A6963 – Backup power supply (MINI BAT)

Backup power supply 24 V DC / 1.3 Ah, supplied with battery A7963. Designed for 35 mm DIN rail mounting.

A6966 – Battery set

Requires two A7966 batteries (12 V / 7 Ah) for the backup power supply. Not suitable for mounting in a closed switchboard.

Other accessories for installation and mounting can be found on our website.

Accessories for extreme conditions – up to IP68



Note: All enclosures have dimensions 270 × 570 × 140 mm. The relay module ATM 05 AC01 can be mounted inside the enclosure.

ATM-06D WP – Monitoring unit in IP54 enclosure

ATM-06D datalogger housed in an **IP54 protection case**, with display and keypad in the front cover.

ATM-055D WP – Monitoring unit in IP54 enclosure

ATM-055D datalogger housed in an **IP54 protection case**, with display and keypad in the front cover.

ATM-AC37 – IP65 enclosure

IP65 protection case with wall mounting brackets and holders for ATAL monitoring systems. No cut out, display, or keypad in the front cover.

External display / keypad



ATM-05-AC02 – External terminal

Terminal with dual line alphanumeric LCD, control buttons, acoustic alarm indication, and **32 alarm LEDs**. Suitable for panel mounting or mounting in an enclosure lid. Provides identical functionality to the built in terminal of ATAL Monitoring Systems. Maximum cable length to the datalogger: **50 metres**. Requires connection cable **ATM-AC35** (available in 0.6 m, 5 m, and 10 m).

ATM-05-AC02E-5M – External terminal in IP54 enclosure

Terminal built into an IP54 protection case, supplied with 5 metre cable and covered terminals.



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