LSI LASTEM

Environmental Monitoring Solutions

AUTOMATIC WEATHER STATIONS

- KME Weather Stations
- ISMMA Weather Station
- Custom Weather Station

Since 1972, LSI LASTEM develops, manufactures and delivers worldwide the most complete range of high quality Weather Stations. LSI LASTEM equipment suits many types of applications, guaranteeing accurate and reliable measurement of meteorological parameters both for portable and long-term monitoring. Our comprehensive range of Weather Stations includes sensors, data acquisition systems, software and installation accessories. This represents a complete surface weather observation system, according to WMO standards, which operates individually or in networks.

Our broad range of sensors covers virtually any meteorological parameter, including wind, temperature, relative humidity, solar radiation, rain, atmospheric pressure, evaporation, visibility and many more.

All our data loggers for environmental applications feature low power consumption, protection against severe environmental conditions and support and extensive set of signals and communication protocols.

This makes LSI LASTEM a one-stop shop for professional solutions in the field of weather monitoring.

KME Weather Stations

KME Weather Stations are professional and economical complete solutions for obtaining the typical weather parameters such as air temperature and relative humidity, wind speed and direction, atmospheric pressure, solar radiation and rainfall. The station consists of a basic kit including sensors, E-Log data logger and 3DOM software for programming and data communication. Starting from the selected basic kit, it is possible to integrate additional sensors, communication systems, power supply, assembly accessories and other software apps, selected from the LSI LASTEM range.





ISMMA Weather Stations

LSI LASTEM provides both stationary and portable weather stations for synoptic and climatological applications that require advanced technical capabilities. These stations adhere to WMO standards and are ideal for national monitoring networks, as well as environmental and industrial applications. ISMMA stations feature the Alpha-Log data logger for remote data storage and transmission, along with AIO (All-In-One) or individual sensors for key parameters (Temperature, Humidity, Wind Speed and Direction, Solar Radiation, Rain, Atmospheric Pressure), as well as mounting accessories.





Custom Weather Stations

Synoptic Weather Stations comply with the most demanding requirements in term of compliance to WMO standards as reported in the “Guide to Instruments and Methods of Observation (WMO-No. 8)“. These weather stations can include the standard typical 7 parameters for ground-based meteorological observation. It is also possible to add many other types of sensors.

KME Weather Stations



- Professional grade weather stations
- Measurement of the seven typical quantities for meteorological applications
- High-quality sensors designed according to WMO (World Meteorological Organization) directives
- Operational limits suitable for all climatic situations
- Extremely low power consumption
- Fixed and portable configurations
- Wide range of data communication solutions
- Suitable for environmental or industrial applications

KME weather stations are professional solutions for obtaining the typical weather parameters such as air temperature and relative humidity, wind speed and direction, atmospheric pressure, solar radiation and rainfall. The station consists of a basic kit which includes a selection of sensors, a 12-input data logger and a software.

Professional solution according to WMO requirements

LSI LASTEM's weather stations are specifically designed to meet professional requirements. Even in extreme environmental situations, they ensure long-term accurate measurements. Sensors specifications comply with WMO standards (World Meteorological Organization).

KME packages

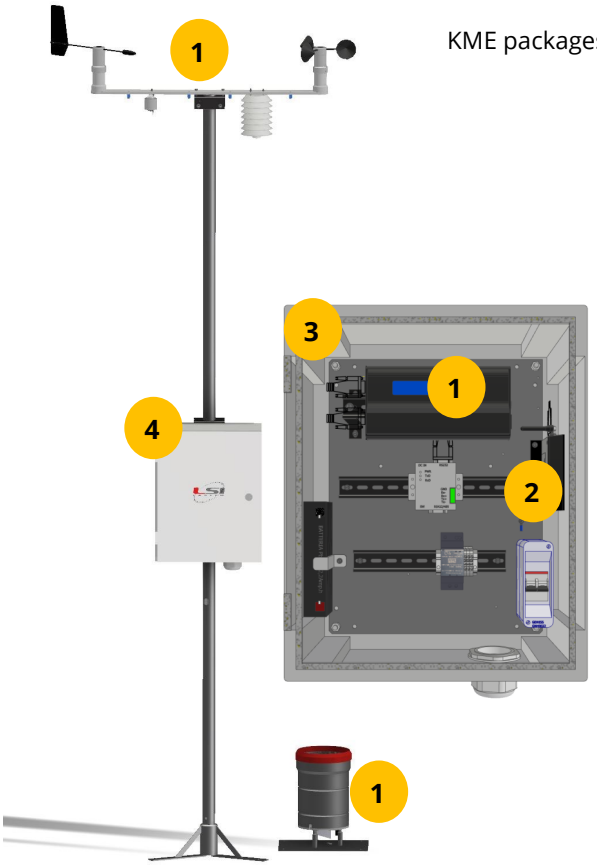
Three versions of the KME weather stations are available. All of them include:

- E-Log data logger with 3DOM software
- Sensors (see below table)

Parameters	Sensors type	PN	KME101	KME102	KME103
Air Temperature & RH%	Thermo-hygrometer with radiant screen	DMA672.1 DYA233	X	X	X
Wind speed & Direction	Cup anemometer Vane anemometer	DNA202.1 DNA212.1	X	X	X
Absolute Pressure	Piezometric	DQA240A.1	X	X	X
Rain	Tipping bucket rain gauge	DQA230.1		X	X
Solar radiation	2nd Class ISO9060 pyranometer	DPA053A			X
N° of free inputs (analogue)			4	4	3
N° of free inputs (digital)			3	2	2
N° of free inputs (RS232)			1	1	1

E-Log (ELO3305) data logger is included in each KME pakage. According to the KME version, there are still free inputs available for additional sensors not included in the package.

Kit 1 - Stationary KME Weather Station



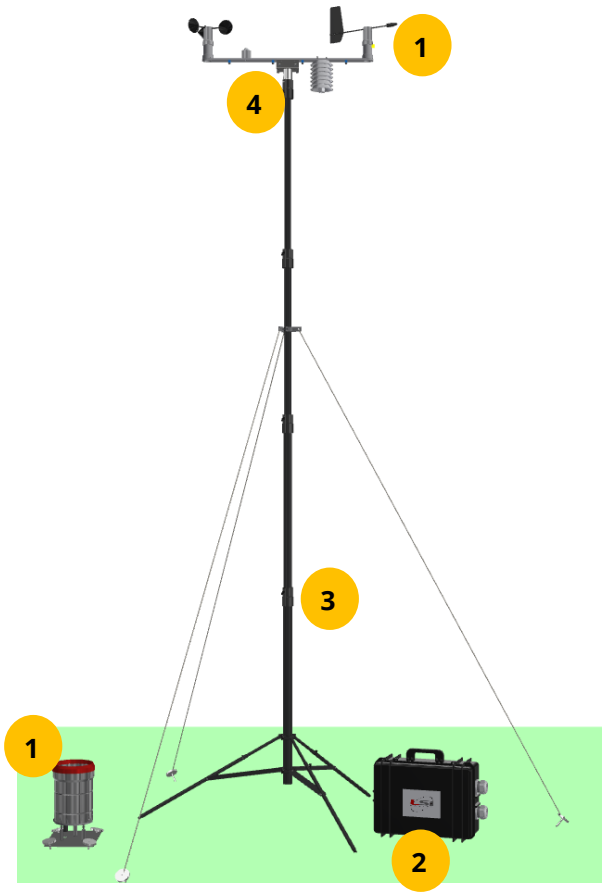
KME packages with all the accessories for a stand alone weather station solution.

NOTES	
A	Select the KME package based on the sensor required
B	Used if remote data communication by GPRS modem is required. In this case CommNET program must be selected
C	Used as an alternative to modem if data communication by radio is required
D	Used for RS485 connection to local SCADA, or PC (in this case 2 pieces DEA504 are needed). Connection to SCADA can use Modbus protocol
E	Select the required RS485 cable length
F	Used when Modbus-RTU output must be converted to Modbus-TCP.
G	Used when Ethernet connection to local lan is required
H-I	IP66 enclosure is needed to protect Data Logger, Pressure sensor, Modem, etc. Select the model according to the availability of main power supply. If solar power is required, ELF345.1 also includes the solar charger module
K	Required for the automatic refill connected to water tap
L	DQA340 already includes temperature sensor, for higher accuracy of the temperature value DLE041A sensor can be selected
M	3DOM program is already included in the KME packages. Select CommNET if automatic data communication is required. Gidas-Viewer for data reporting (charts, tables, wind rose etc.)
N	GIDAS-Viewer allows the visualisation in graphical and tabular form of raw or processed data on user-selected time bases

Ref. Drw	PN	Description	Kit 1	Ref. Note
		KME package (see catalogue MW9044-ENG)		A
	KME101	Kit/ELO305+WS+WD+T+RH+PRESS+Accessories		
	KME102	Kit/ELO305+WS+WD+T+RH+PRESS+RAIN+Accessories		
1	**KME103**	Kit/ELO305+WS+WD+T+RH+PRESS+RAIN+RAD+Accessories		
		GPRS Modem (see catalogue MW9005-ENG-07)	Optional	B
2	**DEA718.3**	Modem/GPRS/Antenna/12V	1	
	ELA110	Cable DEA718.1 to data logger	1	
		Long distance VHF radio (see catalogue MW9005-ENG-07)	Altern. to modem	C
	DEC015.1	Radio DL169IN-B-Y3/VHF500mW/Yagi antenna 3 elem.	1	
	DEC010.1	Radio DL169IN-B/VHF200mW/dipole antenna	1	
	ELA110	Cable DEA718.1, Radio DEC/E-Log	1	
	ELA105	RS232 cable/L=1,8m/9F-9M	1	
	DEA260.1	IP54 Power unit/230Vac->13.8Vdc/IP54/0,6A/wires	1	
		Converter RS232<-->RS485 (see catalogue MW9005-ENG-07)	Optional	D
	DEA504	RS232->485 converter/DIN bar	N	
	MN1510.5RI	Cable/Lan 4X2Xawg24/I-S/Ftp-Cmx Cat5-Sch	N	E
		Gateway Modbus TCP (see catalogue MW9005-ENG-07)	Optional	F
	DEA509	RS232-422-485->Modbus TCP gateway/DIN bar		

Ref. Drw	PN	Description	Kit 1	Ref. Note
		Gateway Ethernet (see catalogue MW9005-ENG-07)	Optional	G
	DEA553	RS232->Ethernet Converter RJ45/DIN bar		
		IP66 enclosure (main power available) (see catalogue MW9005-ENG-07)		H
3	**ELF340**	Box IP66/50x40x16cm/230V->13,8V/50W/batt.2Ah	1	
	DYA074	Arm/ELFxxx/to D=45÷65mm.pole	1	
		IP66 enclosure (60W Solar panel, 40Ah backup battery) (see catalogue MW9005-ENG-07)	Altern. to ELF340	I
	ELF345.1	Box IP66/50x40x16cm/230V->13,8V/50W/solar panel regulator	1	
	DYA101	Solar panel/60W/cable L=5m	1	
	DYA064	Arm/Solar panel/to D=45÷65mm pole	1	
	MG0560	Battery 12V/40Ah	1	
		Sunshine duration sensor (see catalogue MW9000-ENG-16)	Optional	
	DPD504.1	Sensor/Sunshine+Direct Radiation/On-Off+4:20mA/12V	1	
	DYA041	Arm/DPD504/to DYA049	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DWA505A	Cable/L=5m/sensors	1	
		Net radiation sensor (see catalogue MW9000-ENG-13)	Optional	
	PRRDA0100A	Sensor/Net Radiation/µV/Cable L=10 m	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DYA031	Arm/PRRDA0100A/to DYA049	1	
		Evaporation system (see catalogue MW9000-ENG-23)	Optional	
	DYI010	Evaporation pan/calm well	1	
	DYI013	Plastic base for DYI010 pan	1	
	DQC102	Sensor/Evaporat.level/0÷20cm/4÷20mA/12V	1	
	DWA510A	Cable/L=10m/sensors	1	
	DYI012	Elettrovalve water top-up/12V	1	K
		Soil moisture and temperature sensor (see catalogue MW9000-ENG-24)	Optional	
	DQA340	Sensor/Material % water content+Temp./DTR/2x0÷1V/6÷24V	1	
		Soil temperature (see catalogue MW9000-ENG-25)	Optional	L
	DLE041A	Soil Temperature sensor	1	
		Pole H.3 m (see catalogue MW9007-ENG-01)		
	DYA010.1	Pole/H=3m/D=50mm	1	
	DYA020	Tripod/concrete installation/pole D= 50 mm	1	
	DYA020.1	Anchoring bolts for tripod/3 set	1	
	DYA028	Tie rods/H=2-3m	1	
	DYA026	Ground picket/L=1m/3set	1	
		Software (see catalogue MW9006-ENG-2/4)		
	BSZ306.2	CommNET program		M
	BSZ311	Gidas-Viewer program		N

Kit 2 - Portable KME Weather Station



KME packages with all the accessories for a complete portable weather station.

NOTES	
A	Select the KME package according to the needed sensor list
B	3DOM program is already included in the KME packages. Select Gidas-Viewer for data reporting (charts, tables, wind rose, ect) needs.



Ref. Drw	PN	Description	Kit 2	Ref. Note
		KME package (see catalogue MW9044-ENG)		A
	KME101	Kit/ELO305+WS+WD+T+RH+PRESS+Accessories		
	KME102	Kit/ELO305+WS+WD+T+RH+PRESS+RAIN+Accessories		
1	**KME103**	Kit/ELO305+WS+WD+T+RH+PRESS+RAIN+RAD+Accessories		
		Portable IP66 enclosure (see catalogue MW9005-ENG-07)		
2	**ELF432**	Case IP66/230V->13.8V/solar panel regulator/batt.15Ah	1	
		Portable telescopic pole (see catalogue MW9007-ENG-04)		
3	**DYA340**	Pole/H.4m/Telescopic/Transportable	1	
	DYA023	Ground picket/L=0,6m/3set	1	
	DYA028	Tie rods/H=2-3m	1	
4	**DYA345**	Adapter/D=50 mm sensors/to DYA340 pole	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
		Software (see catalogue MW9006-ENG-2/4)		
	BSZ311	Gidas-Viewer program	Optional	B

ISMMA Weather Stations



- Professional-grade weather stations equipped with data loggers, sensors for measuring the seven key meteorological parameters, and accompanying accessories.
- High-quality sensors that meet the standards of the WMO (World Meteorological Organization)
- Operating limits suitable for all climatic situations
- Extremely low power consumption
- Use in typically environmental and industrial applications
- Wide range of data communication options to remote servers: 4G modem, LTE router, satellite, Wi-Fi, Ethernet
- SMS and e-mail in case of alarms
- Internal Web server for viewing and downloading data and for diagnostic purposes
- Local electrical outputs for activating devices based on programmable events

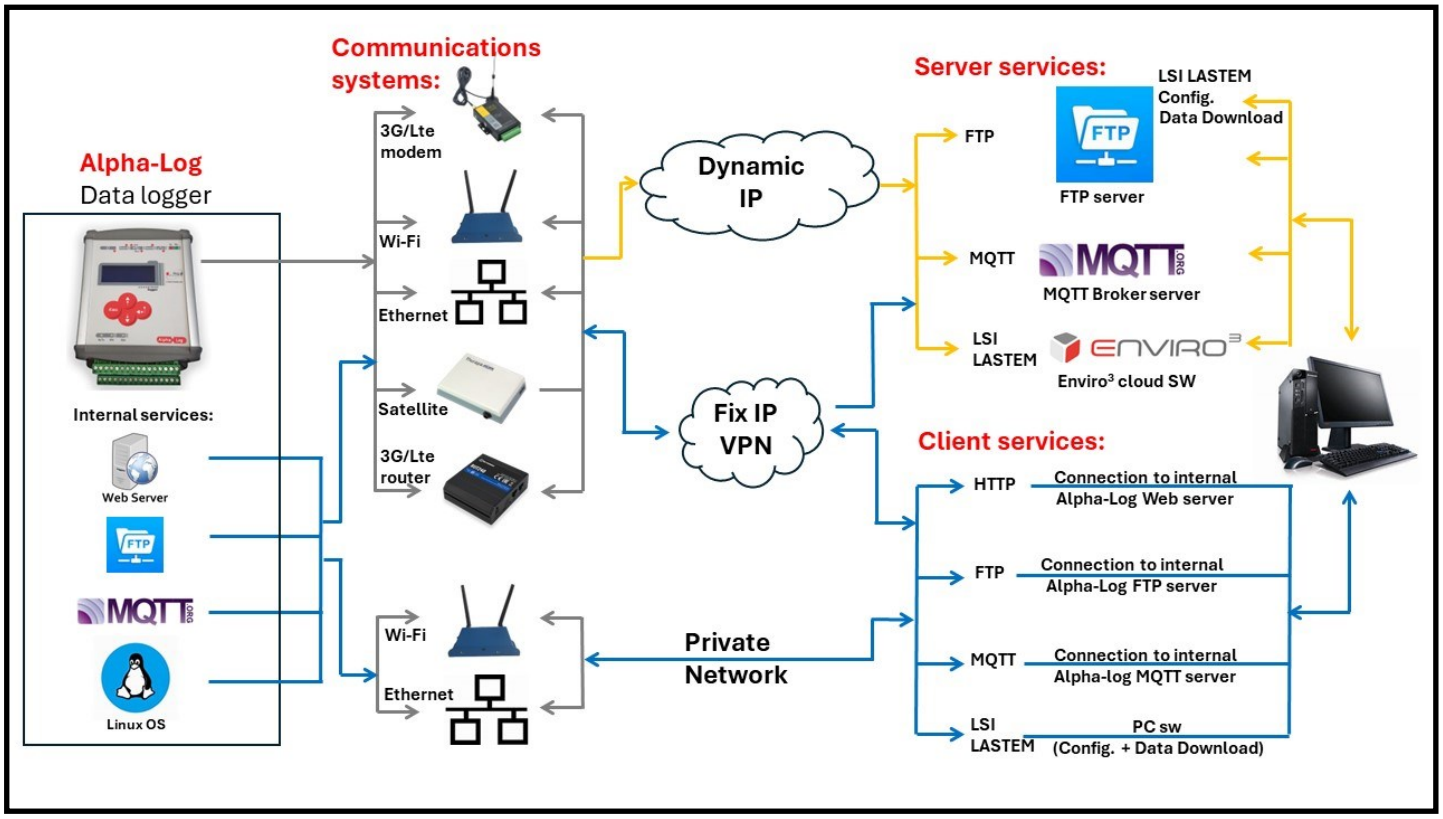
LSI LASTEM provides both stationary and portable weather stations for synoptic and climatological applications that require advanced technical capabilities. These stations adhere to WMO standards and are ideal for national monitoring networks, as well as environmental and industrial applications. ISMMA stations feature the Alpha-Log data logger for remote data storage and transmission, along with AIO (All-In-One) or individual sensors for key parameters (Temperature, Humidity, Wind Speed and Direction, Solar Radiation, Rain, Atmospheric Pressure), as well as mounting accessories.
Available models are listed below :







ISMMA2300	ISMMA2100	ISMMA2200	ISMMA1100	ISMMA1200
Separate sensors	AIO sensor (Standard)	AIO sensor (Compact)	AIO sensor (Standard)	AIO sensor (Compact)
Fixed station			Portable stations	



The availability and accessibility of data within the network will depend on the type of communication equipment selected and whether the communication allows for outgoing data only from the data logger (Dynamic IP) or both outgoing and incoming data (Fixed IP, VPN, Private Network).

Internal web-server

Alpha-Log data logger has an internal web-server.
Using any Internet browser, the following information are available:

- Diagnostic information (system date/hr, IP address, battery status, events/alarms log, output status, etc
- Instant values
- Data downloading from memory (ASCII, CSV, Excel, ZIP)

Switched power supply outputs

N.3 independent electrical outputs that can be activated with configurable logics. Outputs are usefull to trigger external devices such as acustic/visual alarms.

ASCII file data format

The main data stream from the Master data logger to the server (one or more servers) is made using ASCII (*txt) file by FTP protocol. LSI LASTEM provides software applications (GIDAS-Viewer) to receive data saved in the FTP server on a remote PC and to produce charts, tables and report of the measurements.

Data memory

Large internal memory (8 GB total), 5 GB circular data memory, plus an extractable USB external memory (capacity up to 32 GB) with FAT32 fi le system.

Modbus RTU and TCP outputs

It is possible to connect the Master data logger to a SCADA by Modbus (RTU or TCP).

Warnings by SMS, E-mail and MQTT

Notifications/alarms delivery:

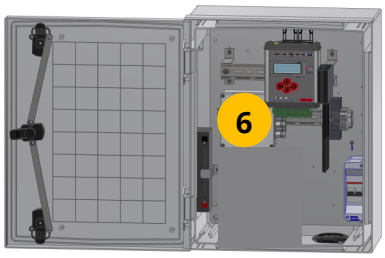
- E-mail: with editable text, scheduling and distribution lists. E-mail attachment contains the file with the data that generated the event.
- SMS: with editable text, scheduling and distribution lists up to 5 users. Active only when the device is working in low-power mode and connected through 3-4 G modem.
- MQTT: data delivery to a MQTT Broker server: instant values, elaborations and alarm notifiations. LSI LASTEM provides software application (X-Panel) to get real-time dash bord of the online values.

Additional sensors

The weather station is open to receive different kind of sensors connected to Alpha-log data logger. LSI LASTEM provide a wide range of meteorological sensors.

Kit 1 - Stationary ISMMA Weather Station with Separate Sensors





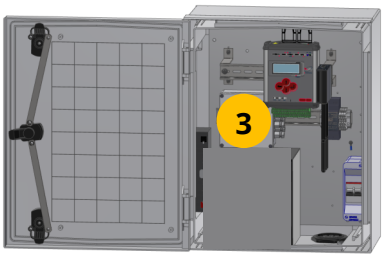
#	ISMMA2300—Included items
1	DNA121 Wind speed and wind direction
2	DPA983+DYA034+DYA049 Solar radiation
3	DQA230.1+DYA040.2+DYA058 Rain gauge
4	DMA672.1+DYA230+DYA049 Temp+RH%
5	ELK001 IP66 Box
6	DLALB0100 Alpha-Log
7	DYA010.1 Pole H.3 m
8	DYA020+DYA020.1 Tripod and pullers

NOTES	
A	If power grid is not available
B	If remote communication is needed

Ref. Drw	PN	Description	Kit 1	Ref. Note
		ISMMA Weather station (see catalogue MW9044-ENG-02)		
	ISMMA2300	Complete fixed-installation meteorological measurement system, mechanical anemometer version	1	
		Solar panel 80 W and battery (see catalogue MW9005-ENG-07)	Optional	A
	DYA109	Solar panel/80W/cable L=5m	1	
	DYA064	Arm/Solar panel/to D=45÷65mm pole	1	
	MG0560.R	Battery 12V/40Ah	1	
		Modem 4G (see catalogue MW9005-ENG-07)	Optional	B
	TXCMA2200	Modem 4G/LTE/HSPA/WCDMA/GPRS/Antenna+cable/5-36 V	1	
		4G Router LTE (see catalogue MW9005-ENG-07)	Altern. to Modem	B
	TXCRB2200	4G LTE cat. 4 Global router, Wi-Fi, 1 Ethernet port, antennas, power 9...30 Vdc, DIN rail mount	1	
	TXCRB2210	4G LTE cat. 4 Global router, Wi-Fi, 4 Ethernet ports, antennas, power 9...30 Vdc, DIN rail mount	Altern. to TXCRB2200	
	TXCRB2200.1	ROUTER 4G LTE cat. 4, Wi-Fi, 1 Ethernet, antennas, power. 9..30 Vcc, mounting DIN rail Router 4G LTE, 9..30 Vdc	Altern. to TXCRB2200	

Kit 2 - Stationary ISMMA Weather Compact Stations





#	ISMMA2100-2200—Included items
1	DNB302 AIO Standard (only ISMMA2100) DNB202 AIO Compact (only ISMMA2200)
2	ELK001 IP66 Box
3	DLALB0100 Alpha-Log
4	DYA010.1 Pole H.3 m
5	DYA020+DYA020.1 Tripod and pullers

NOTES	
A	Two different models depending on ALL-IN.ONE sensor type
B	Standard ALL-IN-ONE
C	Compact ALL-IN-ONE
D	If power grid is not available
E	If remote communication is needed

Ref. Drw	PN	Description	Kit 2	Ref. Note
		ISMMA Weather station (see catalogue MW9044-ENG-02)		A
	ISMMA2100	Fix complete meteorological measurement system, standard version	1	B
	ISMMA2200	Fix complete meteorological measurement system, compact version	Altern. to ISMMA2100	C
		Solar panel 80 W and battery (see catalogue MW9005-ENG-07)	Optional	D
	DYA109	Solar panel/80W/cable L=5m	1	
	DYA064	Arm/Solar panel/to D=45÷65mm pole	1	
	MG0560.R	Battery 12V/40Ah	1	
		Modem 4G LTE (see catalogue MW9005-ENG-07)	Optional	E
	TXCMA2200	Modem 4G/LTE/HSPA/WCDMA/GPRS/Antenna+cable/5-36 V	1	
		4G Router (see catalogue MW9005-ENG-07)	Altern. to Modem	E
	TXCRB2200	4G LTE cat. 4 Global router, Wi-Fi, 1 Ethernet port, antennas, power 9...30 Vdc, DIN rail mount	1	
	TXCRB2210	4G LTE cat. 4 Global router, Wi-Fi, 4 Ethernet ports, antennas, power 9...30 Vdc, DIN rail mount	Altern. to TXCRB2200	
	TXCRB2200.1	ROUTER 4G LTE cat. 4, Wi-Fi, 1 Ethernet, antennas, power. 9..30 Vcc, mounting DIN rail Router 4G LTE, 9..30 Vdc	Altern. to TXCRB2200	

Kit 3 - Portable ISMMA Weather Compact Stations





#	ISMMA2100-2200—Included items
1	DNB302 AIO Standard (only ISMMA1100) DNB202 AIO Compact (only ISMMA1200)
2	ELK002 IP66 Carrying case, 18Ah battery, charger
3	DLALB0100 Alpha-Log
4	DYA340+DYA028+DYA023 Telescopic pole, tie rods and pickets
5	DYK001+DYA064 Solar panel, bracket

NOTES	
A	Two different models depending on ALL-IN.ONE sensor type
B	Standard ALL-IN-ONE
C	Compact ALL-IN-ONE
D	If remote communication is needed

Ref. Drw	PN	Description	Kit 3	Ref. Note
		ISMMA Weather station (see catalogue MW9044-ENG-02)		A
	ISMMA1100	Portable complete measurement system for meteorological quantities, standard version	1	B
	ISMMA1200	Portable complete meteorological measurement system, compact version	Altern. to ISMMA2200	C
		Modem 4G (see catalogue MW9005-ENG-07)	Optional	D
	TXCMA2200	Modem 4G/LTE/HSPA/WCDMA/GPRS/Antenna+cable/5-36 V	1	
		4G Router (see catalogue MW9005-ENG-07)	Altern. to Modem	D
	TXCRB2200	4G LTE cat. 4 Global router, Wi-Fi, 1 Ethernet port, antennas, power 9...30 Vdc, DIN rail mount	1	
	TXCRB2210	4G LTE cat. 4 Global router, Wi-Fi, 4 Ethernet ports, antennas, power 9...30 Vdc, DIN rail mount	Altern. to TXCRB2200	
	TXCRB2200.1	ROUTER 4G LTE cat. 4, Wi-Fi, 1 Ethernet, antennas, power. 9..30 Vcc, mounting DIN rail Router 4G LTE, 9..30 Vdc	Altern. to TXCRB2200	

Custom Weather Stations

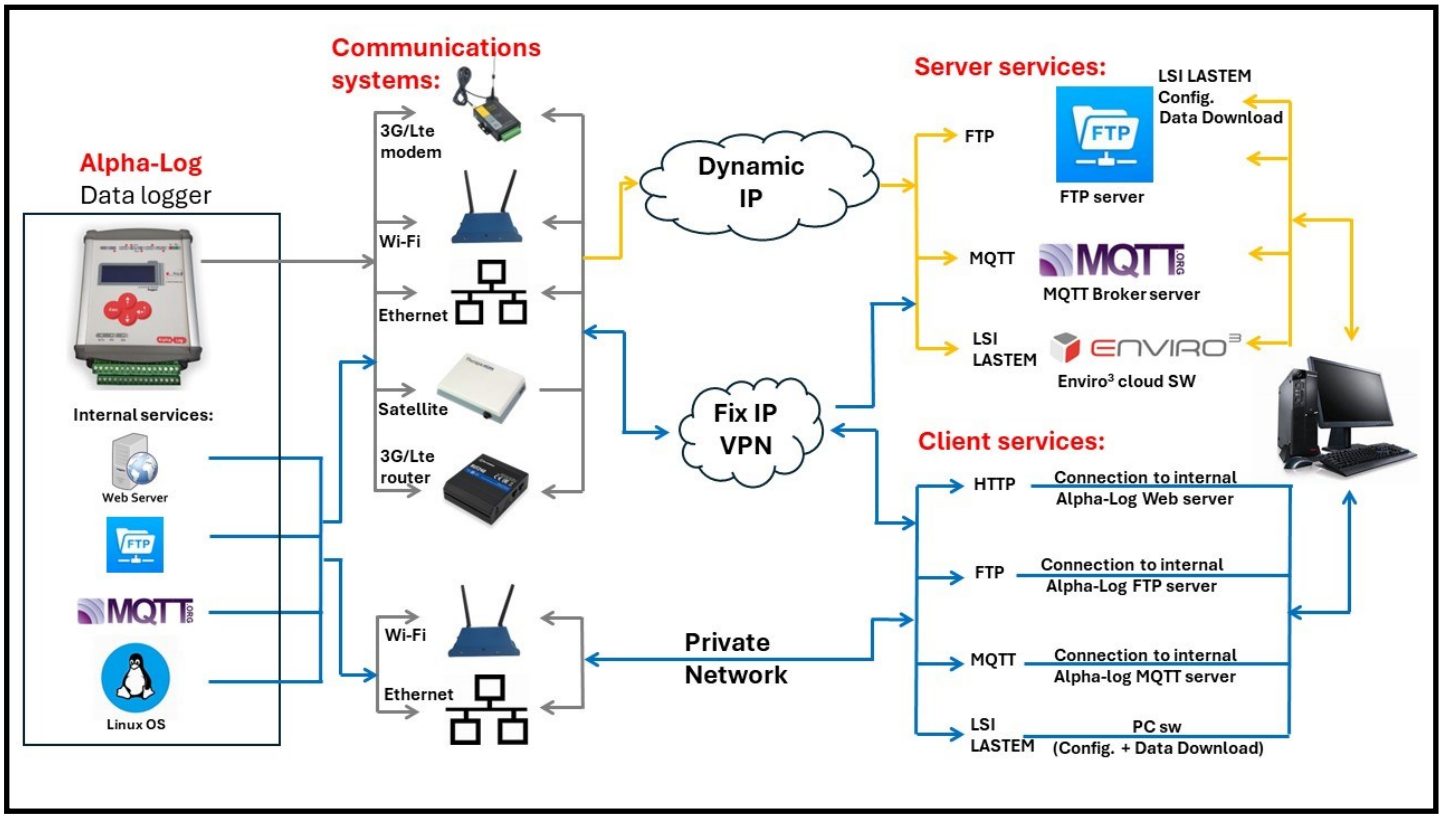


- Complete solution according to WMO standards for synoptic and climatological weather applications
- The system is open to receive different sensors (see configuration examples in the next pages)
- Wide range of data communication options to remote servers: by 3-4G Modem, LTE Router, Satellite
- SMS and Email in case of alarms
- Internal web server for data display , data downloading and diagnostic purposes

For synoptic and climatological weather applications, when the requirements are for high-end technical specifications, LSI LASTEM can offer a complete solution. Those weather stations are equipped with all sensors required, mounting accessories, and power supply. They also include a powerful Alpha-Log data logger for saving and remotely transferring meteorological data to FTP and MQTT servers. Depending on the type and number of sensors required, the monitoring station can be composed by one or more inputs extension modules (ALIEM). If needed ALIEM modules can be fixed on separate poles far away from the main data logger.

LSI LASTEM weather stations and sensors are fully compliant with World Meteorological Organization guidelines and are therefore used by many national meteorological networks. Our stations will also satisfy the needs of several weather critical applications such as hydrology, climatology, renewable energy, aviation or precision agriculture. They contain all elements required to accurately measure and reliably report all the weather parameters.

LSI LASTEM is the one-stop shop for automatic weather stations. It is also a skilled and dedicated team specifically trained to support your applications worldwide. And because we want your weather stations to remain operational and accurate for the longest possible time, LSI LASTEM's calibration laboratory in Milan is ISO17025 accredited for temperature and air velocity. We can also deliver ISO9001 calibration certificates for all your pyranometers, anemometers, rain gauges, barometers, hygrometers, UV Sensors, Lux meters and many other sensors.



The availability and accessibility of data within the network will depend on the type of communication equipment selected and whether the communication allows for outgoing data only from the data logger (Dynamic IP) or both outgoing and incoming data (Fixed IP, VPN, Private Network).

Internal web-server

Alpha-Log data logger has an internal web-server.
Using any Internet browser, the following information are available:

- Diagnostic information (system date/hr, IP address, battery status, events/alarms log, output status, etc
- Instant values
- Data downloading from memory (ASCII, CSV, Excel, ZIP)

Switched power supply outputs

N.3 independent electrical outputs that can be activated with configurable logics. Outputs are usefull to trigger external devices such as acustic/visual alarms.

ASCII file data format

The main data stream from the Master data logger to the server (one or more servers) is made using ASCII (*txt) file by FTP protocol. LSI LASTEM provides software applications (GIDAS-Viewer) to receive data saved in the FTP server on a remote PC and to produce charts, tables and report of the measurements.

Data memory

Large internal memory (8 GB total), 5 GB circular data memory, plus an extractable USB external memory (capacity up to 32 GB) with FAT32 fi le system.

Modbus RTU and TCP outputs

It is possible to connect the Master data logger to a SCADA by Modbus (RTU or TCP).

Warnings by SMS, E-mail and MQTT

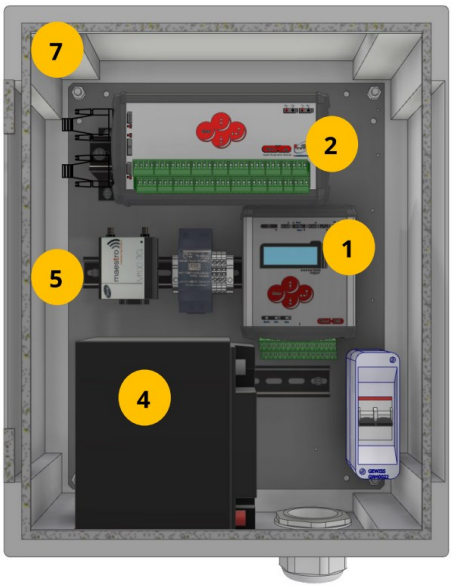
Notifications/alarms delivery:

- E-mail: with editable text, scheduling and distribution lists. E-mail attachment contains the file with the data that generated the event.
- SMS: with editable text, scheduling and distribution lists up to 5 users. Active only when the device is working in low-power mode and connected through 3-4 G modem.
- MQTT: data delivery to a MQTT Broker server: instant values, elaborations and alarm notifiations. LSI LASTEM provides software application (X-Panel) to get real-time dash bord of the online values.

Additional sensors

The weather station is open to receive different kind of sensors connected to Alpha-log data logger. LSI LASTEM provide a wide range of meteorological sensors.





NOTES	
A	Number of ALIEM depends on the number of sensors in the system.
B	A 4G-LTE Router can be a useful alternative to modem when real-time data communication is required
C	The Alpha-Log data logger features an integrated atmospheric pressure sensor with a 0,3 hPa accuracy. For a better accuracy, it is also possible to add our DQA251 pressure sensor
D	Choice regarding pyranometer quality depends on the user's requirements
E	It is possible to connect multiple DQA340 sensors for soil moisture and temperature profile measurements. Each DQA340 needs one free analogue channel in the ALIEM module
F	DLE041A can be used when only soil temperature is required, or when better accuracy then the one declared for the DQA340 temperature element is required

Ref. Drw	PN	Description	Kit	Ref. Note
		A-Log data Logger (see catalogue MW9005-ENG-01)		
1	**DLALB0100**	Alpha-Log/7GB/n.2 RS232/n.1 RS485/n.2 USB/n.1 Ethernet	1	
	XLA010	Pen Driver 8Gb	1	
2	**MDMMB1110.1**	Alpha-Log/Inputs extension/N.8 Analog.+4 Digitals/RS232-Modbus	1	A
		Solar panel 80 W and battery (see catalogue MW9005-ENG-07)	Optional	
3	**DYA109**	Solar panel/80W/cable L=5m	1	
	DYA064	Arm/Solar panel/to D=45÷65mm pole	1	
4	**MG0560.R**	Battery 12V/40Ah	1	
		Modem (see catalogue MW9005-ENG-07)	Optional	
5	**TXCMA2200**	Modem/4G/Antenna+Cable/12V	1	
6	**DEA611**	External antenna 2DB/5 m cable/support	1	
		4G LTE Router (see catalogue MW9005-ENG-07)	Altern. to Modem	B
	TXCRB2200	Router 4G LTE cat. 4 Global/Wi-Fi/Antenna/9÷30 Vdc	1	
	TXCRB2210	4G LTE cat. 4 Global router, Wi-Fi, 4 Ethernet ports, antennas, power 9...30 Vdc, DIN rail mount	Altern. to TXCRB2200	
	TXCRB2200.1	ROUTER 4G LTE cat. 4, Wi-Fi, 1 Ethernet, antennas, power. 9..30 Vcc, mounting DIN rail Router 4G LTE, 9..30 Vdc	Altern. to TXCRB2200	

Ref. Drw	PN	Description	Kit	Ref. Note
		IP66 enclosure (see catalogue MW9005-ENG-07)		
7	**ELF340**	Box IP66/50x40x16cm/230V->13,8V/50W/batt.2Ah	1	
	DYA074	Arm/ELFxxx/to D=45÷65mm.pole	1	
		Temperature and RH% sensor (see catalogue MW9000-ENG-05)		
8	**DMA672.1**	Sensor/T+RH%/Pt100+0÷1V/12V/Cable L.3m	1	
	DYA230	Radiant screen/NV/DMA67x-033	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
		Wind speed and direction sensor (cup&vane) (see catalogue MW9000-ENG-06)	1	
	DNA121	Sensor/cup&vane anem./WS+WD/Hz+0÷1V/ 10÷30V	1	
	DWA505A	Cable/L=5m/DNA121	1	
		Ultrasonic wind sensor (see catalogue MW9000-ENG-07)	Altern. to DNA121	
	DNB205	Sensor/Sonic Compact/WS+WD/RS485/12÷30V	1	
	DNB305	Sensor/Sonic/WS+WD/RS48512÷30V	Altern. to DNB205	
	DWA831	Cable/L=5m/DNB20x-30x	1	
		Rain gauge (Tipping bucket) (see catalogue MW9000-ENG-18)		
9	**DQA230.1**	Sensor/Rain gauge/324cmq/Siphon/Hz	1	
	DYA058	Lateral arm/D=50 mm.sensors/to D=45÷65mm. pole	1	
	DWA505A	Cable/L=5m/sensors	1	
	DYA040.2	Arm/DQA230-231/to D=50mm.pole	1	
		Pressure sensor (included inside Alpha-Log unit) (see catalogue MW9000-ENG-22)		C
		Radiation sensor (Class B pyranometer) (see catalogue MW9000-ENG-11)		D
10	**DPA154**	Sensor/Pyranometer/First Class/µV/Cable L=10 m	1	
	DWA605A	Cable L=5 m/DPA154 sensor		
	DYA034	Arm/DPA154-855-870-863-873-252-952-817- 822/Horiz./to DYA049	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
		Radiation sensor (Class A pyranometer) (see catalogue MW9000-ENG-11)	Altern. to DPA154	D
	DPA252	Sensor/Pyranometer/Secondary Standard/µV	1	
	DWA205	Cable L.5 m	1	
	DYA034	Arm/DPA154-855-870-863-873-252-952-817- 822/Horiz./to DYA049	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
		Radiation sensor (Class C pyranometer) (see catalogue MW9000-ENG-11)	Altern. to DPA154	D
	DPA053A	Sensor/Pyranometer/Second Class/µV/Cable L=5 m	1	
	DYA032	Arm/DPA053/Horiz./to DYA049	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
		Soil moisture and temperature sensor (see catalogue MW9000-ENG-25)		E
11	**DQA340**	Sensor/Material % water content+Temp./DTR/2x0÷1V/6÷24V	1	
		Soil temperature (see catalogue MW9000-ENG-24)	Optional	F
	DLE041A	Soil Temperature sensor	1	
		UV-A radiometers (see catalogue MW9000-ENG-14)	Optional	
	DPA817	Sensor/UV÷A radiat./0÷70Wm-2/4÷20mA/10÷ 30V	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DYA034	Arm/DPA154-855-870-863-873-252-952-817- 822/Horiz./to DYA049	1	
	DWA410A	Cable/L=10 m/DPA154-855-870-863-873-817-822	1	

Ref. Drw	PN	Description	Kit	Ref. Note
		UV-B radiometers (see catalogue MW9000-ENG-14)	Optional	
	DPA822	Sensor/UV÷B radiat./0÷5Wm-2/4÷20mA/10÷30V	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DYA034	Arm/DPA154-855-870-863-873-252-952-817- 822/Horiz./to DYA049	1	
	DWA410A	Cable/L=10 m/DPA154-855-870-863-873-817-822	1	
		Sunshine duration sensor (see catalogue MW9000-ENG-16)	Optional	
	DPD504.1	Sensor/Sunshine+Direct Radiation/On-Off+4:20mA/12V	1	
	DYA041	Arm/DPD504/to DYA049	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DWA505A	Cable/L=5m/sensors	1	
		Net radiation sensor (see catalogue MW9000-ENG-13)	Optional	
	PRRDA0100A	Sensor/Net Radiation/µV/Cable L=10 m	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DYA031	Arm/PRRDA0100A/to DYA049	1	
		Evaporimeter (see catalogue MW9000-ENG-23)		
	DYI010	Evaporation pan/calm well	1	
	DYI013	Plastic base for DYI010 pan	1	
	DQC102	Sensor/Evaporat.level/0÷20cm/4÷20mA/12V	1	
	DWA510A	Cable/L=10m/sensors	1	
	DYI012	Elettrovalve water top-up/12V	1	
		Pole H.3 m (see catalogue MW9007-ENG-01)		
12	**DYA010.1**	Pole/H=3m/D=50mm	1	
	DYA020	Tripod/concrete installation/pole D= 50 mm	1	
	DYA020.1	Anchoring bolts for tripod/3 set	1	
		Tie-rods set for mast diam.50 mm (see catalogue MW9007-ENG-01)		
	DYA028	Tie rods/H=2-3m	1	
	DYA026	Ground picket/L=1m/3set	1	



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