AUTOMATIC WEATHER STATIONS

- KME Professional Weather Stations
- Compact Weather Station
- Complete Weather Station

AUTOMATIC WEATHER STATIONS

Environmental Monitoring Solutions

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 Professional 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.

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AUTOMATIC WEATHER STATIONS

Compact Weather Stations

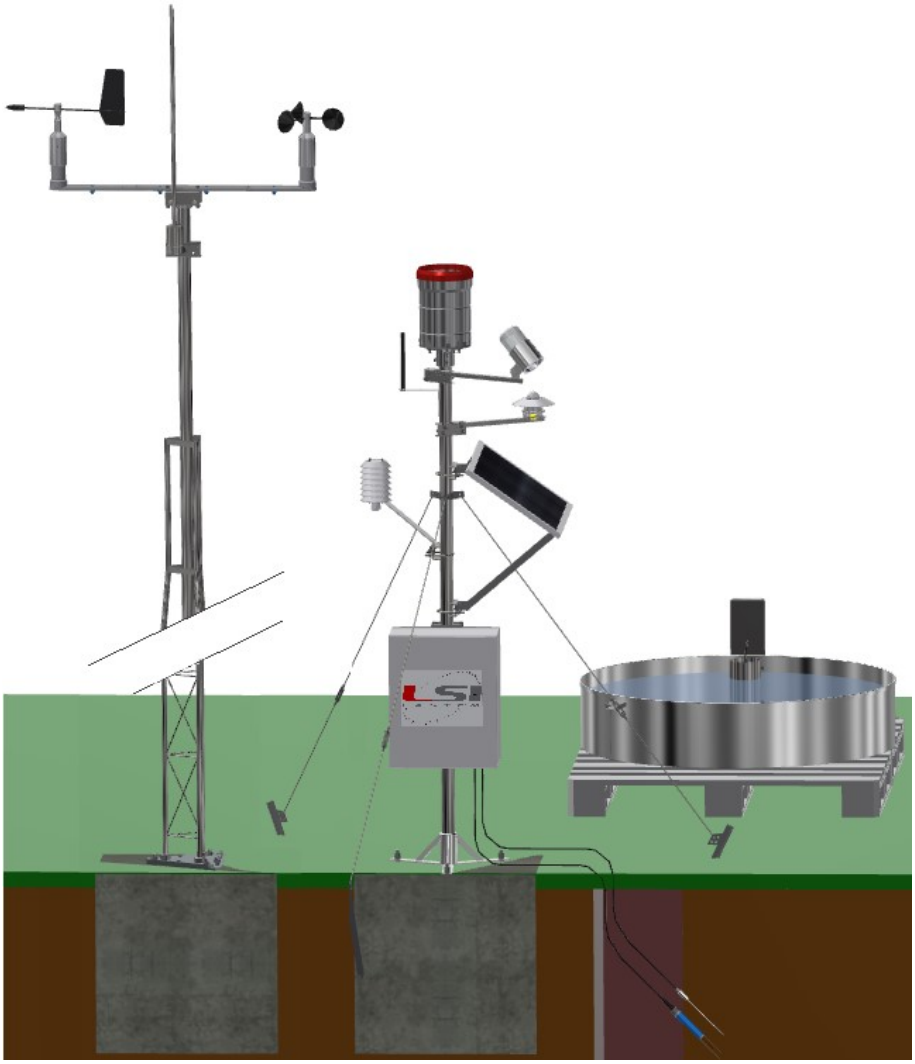
Compact Weather Stations are based on AIO (All-In-One) meteorological sensors and a powerful Alpha-log data logger.

AIO sensors can monitor multiple meteorological parameters. They are compact, maintenance free, and have a long service life. AIO sensor simplifies installation and reduces costs compared with multiple individual weather sensors.

A rain gauge can be selected as additional separate sensor (tipping bucket) for a better accuracy over the total amount of rainfall and intensity. It can also be included inside the All-In-One sensor (optical).

Complete 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.



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KME Professional Weather Stations

- Professional grade weather stations
- Measurement of the seven typical quantities for meteorological applications. Possibility of additional optional sensors
- High-quality sensors designed according to WMO (World Meteorological Organization) directives
- Operational limits suitable for all climatic situations
- Extremely low power consumption
- Stand-alone and portable configurations
- 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 data logger and a software.

Read KME Professional Weather Stations catalogue (ref. MW9044) for more information.

KME packages

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

- E-Log (ELO305) 12-input data logger
- 3DOM software
- Sensors (see below table) with cable
- Bar (DYA046) for sensors installation
- Ground base (DYA039.1) for rain gauge installation

Not included items:

- IP66 enclosure for data logger
- Pole
- Remote data communication device (ie. Modem)

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	DQA240.1	X	X	X
Rain	Tipping bucket rain gauge	DQA230.1		X	X
Solar radiation	2nd Class ISO9060 pyranometer	DPA053			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 (ELO305) 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 KME package.

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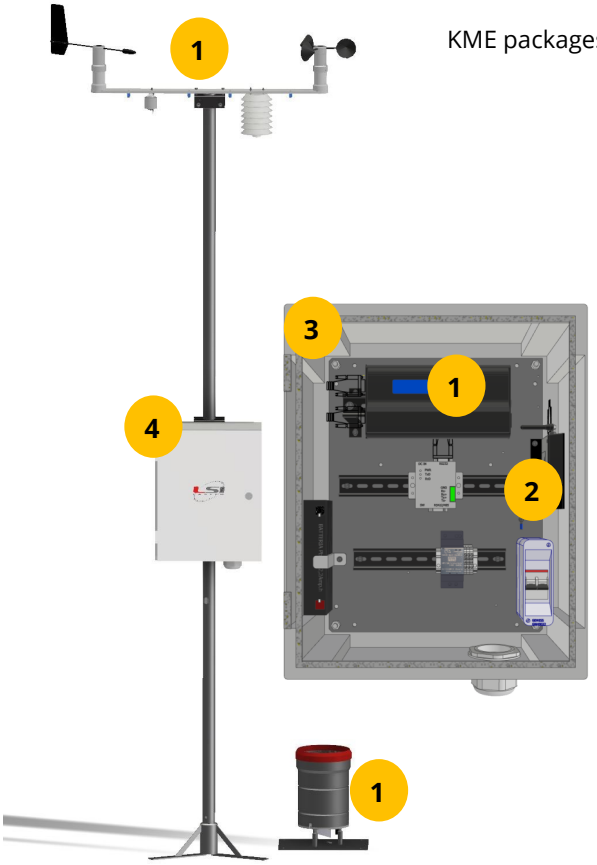
Kit 1 - Stand Alone Weather Station



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 water refill connected to water tap
L	DQA340 already includes temperature sensor, for higher accuracy of the temperature value DLE041 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

Ref. Drw	PN	Description	Kit	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	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		

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Ref. Drw	PN	Description	Kit	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	
	DWA505	Cable/L=5m/sensors	1	
		Net radiation sensor (see catalogue MW9000-ENG-13)	Optional	
	DPA240	Sensor/Net Radiation/µV/Cable L=10 m	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DYA031	Arm/DPA240/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	
	DWA510	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
	DLE041	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

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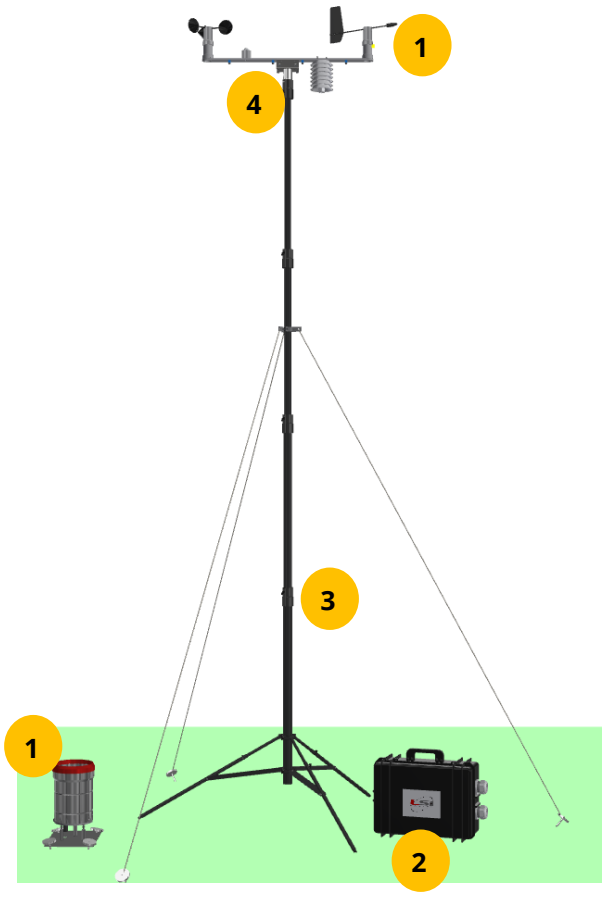
Kit 2 - Portable Weather Station



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	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

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AUTOMATIC WEATHER STATIONS

Compact Weather Stations

- All-In-One weather sensor for easy deployment and size reduction
- Tipping bucket rain gauge for accurate rain monitoring
- Modbus RTU or TCP output to local PLC/SCADA system
- Dash-board on remote PC for real-time data display
- Remote communication to FTP and MQTT servers
- Local electrical outputs for triggering local devices according to programmable events
- SMS and Email in case of alarms

In many applications the size of the meteorological measuring system is a critical issue. LSI LASTEM can supply a compact weather station equipped with only two sensors: one All-in-One sensor to measure Air Temperature and RH%, Wind Speed and Direction, Pressure and Solar Irradiance and a separate Rain gauge to ensure an accurate measurement of the rain totals and intensity. The IP66 enclosure would contain the Alpha-Log, a 3 G modem and a battery. Solar panel and an additional 40 Ah battery can used when the main power supply is not available.

DQA230.1 Rain Gauge (*)	
Principle	Tipping bucket
Resolution	0,2 mm
Collector area	323 cm2
Accuracy over total	0÷20 mm/hr: ±0,2 mm 20÷240 mm/hr: 1% >240 mm/hr: 2%
* other models with different specifications are available	

DNB202.2 All-In-One weather sensor (*)	
Wind Speed	Range: 0÷60 m/s Accuracy: ±0,3 m/s or 5% (<35 m/s); 10% (>35 m/s)
Wind Direction	Range: 0÷360° Accuracy: ±3°
Temperature	Range: -40÷80°C Accuracy: ±0,3°C (-35÷60°C)
RH%	Range: 0÷100% Accuracy: 3%
Pressure	Range: 600÷1100 hPa Accuracy: ±0,5 hPa
Solar Radiation	Range: 0÷2000 hPa Accuracy: 5%
* other models with different specifications are available	

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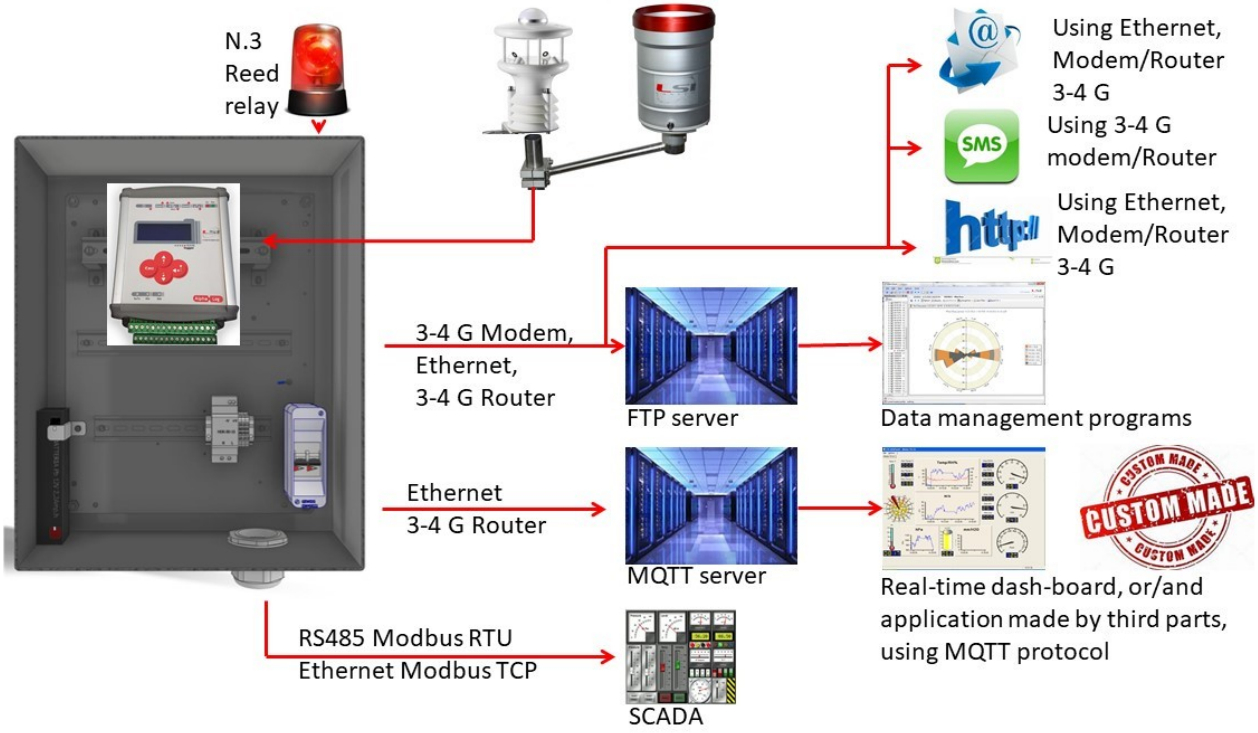
Compact Weather Stations



In the picture above there is a general overview of the Alpha-Log data logger data communication/management possibilities. Communication ports/device and data format (Ethernet, RS232-485 ports. HTTP, Modbus RTU/TCP, FTP MQTT protocols), power outputs and alarms by SMS are available in a single device.

Internal web-server

Master 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 circular memory (400 MB) plus an extractable USB external memory (capacity up to 32 GB) with FAT32 file 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.

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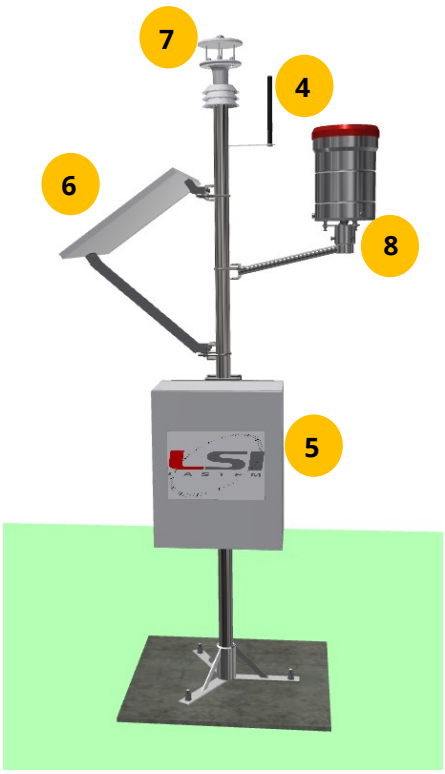
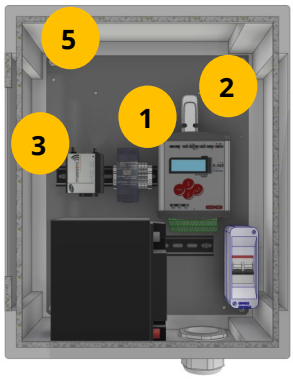
Compact Weather Stations



Compact weather station including data logger with solar panel and 3G modem for data communication. Ethernet, WiFi or 4G-Lte Router are alternative for data communications. The system is mounted on a H.2 m pole fixed on a concrete plinth or to walls.



LSI LASTEM supplies a vast range of mounting accessories including smaller IP66 enclosures. Smaller enclosures can be used when main power supply is available.

NOTES	
A	3G modem is required for data delivery to FTP servers without the need of real-time data. Alpha-Log has Ethernet port
B	Router is required to deliver real-time data to the servers and to access to the internal Alpha-Log data logger web server without any unavailable data service time
C	Wi-Fi is an alternative to LAN when an Ethernet Wi-Fi router is available within few tens of meters distance
D	Different types of All-in-One sensors are available (See MW9000-ENG-08 catalogue)

Ref. Drw	PN	Description	Kit	Ref. Note
		A-Log data Logger (see catalogue MW9005-ENG-01)		
1	**DLALA0100.1**	Alpha-Log/400MB/n.2 RS232/n.1 RS485/n.2 USB/n.1 Ethernet	1	
2	**XLA010**	Pen Driver 8Gb	1	
		Modem (see catalogue MW9005-ENG-07)	Optional	A
3	**TXCMA2200**	Modem/4G/Antenna+Cable/12V	1	
4	**DEA611**	External antenna 2DB/5 m cable/support	1	
		4G-LTE Router (see catalogue MW9005-ENG-07)	Altern. to modem	B
	TXCRA2200	4G LTE cat. 4 Global router, Wi-Fi, 1 Ethernet port, antenna	1	
		WiFi antenna (see catalogue MW9005-ENG-07)	Altern. to modem	C
	DEA551	WiFi antenna	1	
		IP66 enclosure (see catalogue MW9005-ENG-07)		
5	**ELF340**	Box IP66/50x40x16cm/230V->13,8V/50W/batt.2Ah	1	
	DYA074	Arm/ELFxxx/to D=45÷65mm.pole	1	
		Solar panel 60 W and battery (see catalogue MW9005-ENG-07)	Optional	
6	**DYA101**	Solar pannel/50W/cable L=5m	1	
	DYA064	Arm/Solar panel/to D=45÷65mm pole	1	
	MG0560	Battery 12V/40Ah	1	
		AIO (All-in-One) sensor (see catalogue MW9000-ENG-08)		
7	**DNB202.2**	Sensor/AIO Compact/WS+WD+T+RH+Press+Rad/RS232/10÷30V	1	
	DNB200.2	Sensor/AIO Compact/WS+WD+T+RH+Press/RS232/10÷30V	Altern. to DNB202.2	D
	DNB302.2	Sensor/AIO Standard/WS+WD+T+RH+Press+Rad/RS232/10÷30V	Altern. to DNB200.2	D
	DNB300.2	Sensor/AIO Standard/WS+WD+T+RH+Press/RS232/10÷30V	Altern.to DNB200.2	D
	DWA831	Cable/L=5m/DNB20x-30x	1	

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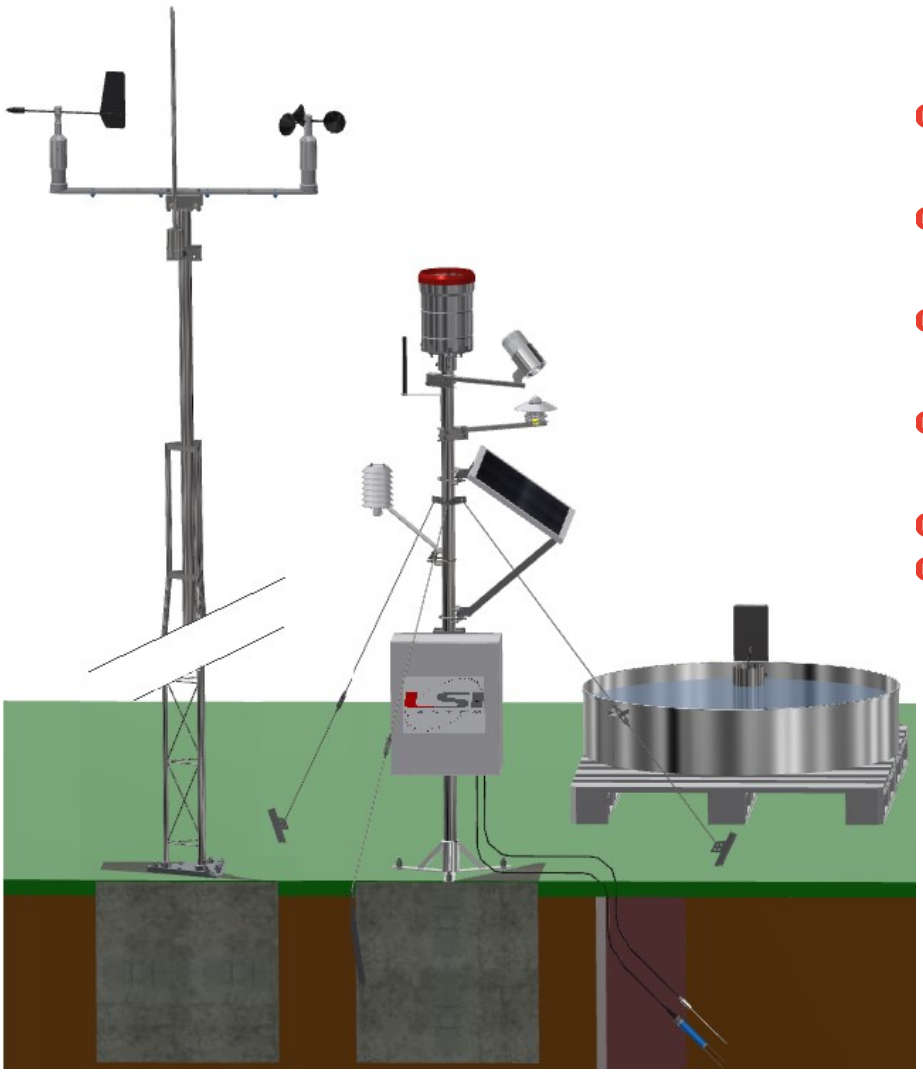
Ref. Drw	PN	Description	Kit2	Ref. Note
		Rain gauge (Tipping bucket) (see catalogue MW9000-ENG-18)		
8	**DQA230.1**	Sensor/Rain gauge/324cmq/Siphon/Hz	1	
	DWA505	Cable/L=5m/sensors	1	
	DYA040.2	Arm/DQA230-231/to D=50mm.pole	1	
	DYA058	Lateral bar	1	
		Pole H.2 m (see catalogue MW9007-ENG-01)		
	DYA006.1	Pole/H=2m/D=50mm	1	
		Tripod for pole fixed on concrete plinth (see catalogue MW9007-ENG-01)		
	DYA020	Tripod/concrete installation/pole D= 50 mm	1	
	DYA020.1	Anchoring bolts for tripod/3 set	1	
		Tripod for pole fixed directly on the soil (see catalogue MW9007-ENG-01)	Altern. to DYA020 +DYA020.1	
	DYA021	Tripod/soil installation/pole D=50 mm		
	DYA023	Ground picket/L=0,6m/3set		
		Arm for masts installation on wall (see catalogue MW9007-ENG-01)	Altern. to DYA020 +DYA020.1	
	DYA004	Arm for mast wall installation/D=50mm/ 1set		

Complete 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)
- H.10 tower for wind sensors and lightning rod, separate H.2 m poles for the rest of the monitoring system
- 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.

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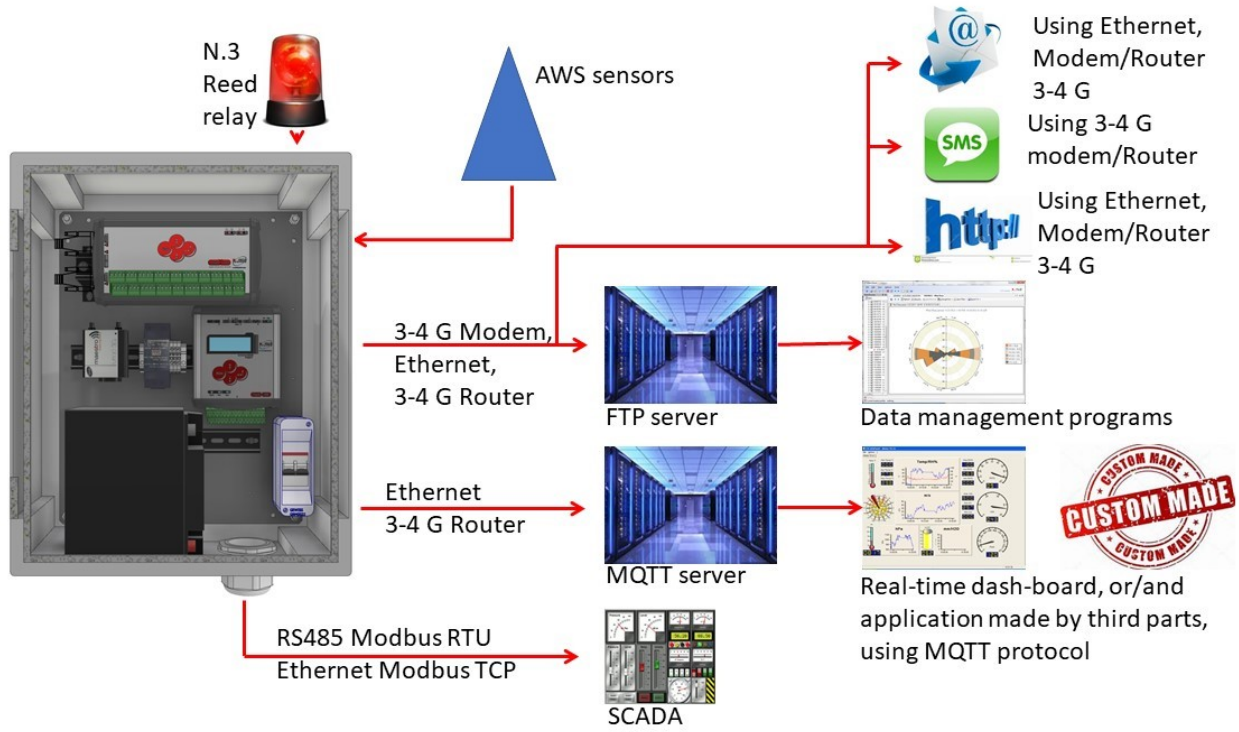

General overview of the Alpha-Log data logger data communication/management capabilities. Communication ports/device and data format (Ethernet, RS232-485 ports. HTTP, Modbus RTU/TCP, FTP, SFTP, MQTT protocols), power outputs and alarms by email and SMS are available in a single device.

Internal web-server

Master 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

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Data memory

Large internal circular memory (400 MB) plus an extractable USB external memory (capacity up to 32 GB) with FAT32 file 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 through ALIEM (Alpha-Log Input Extensione Module) modules. LSI LASTEM provide a wide range of meteorological sensors.

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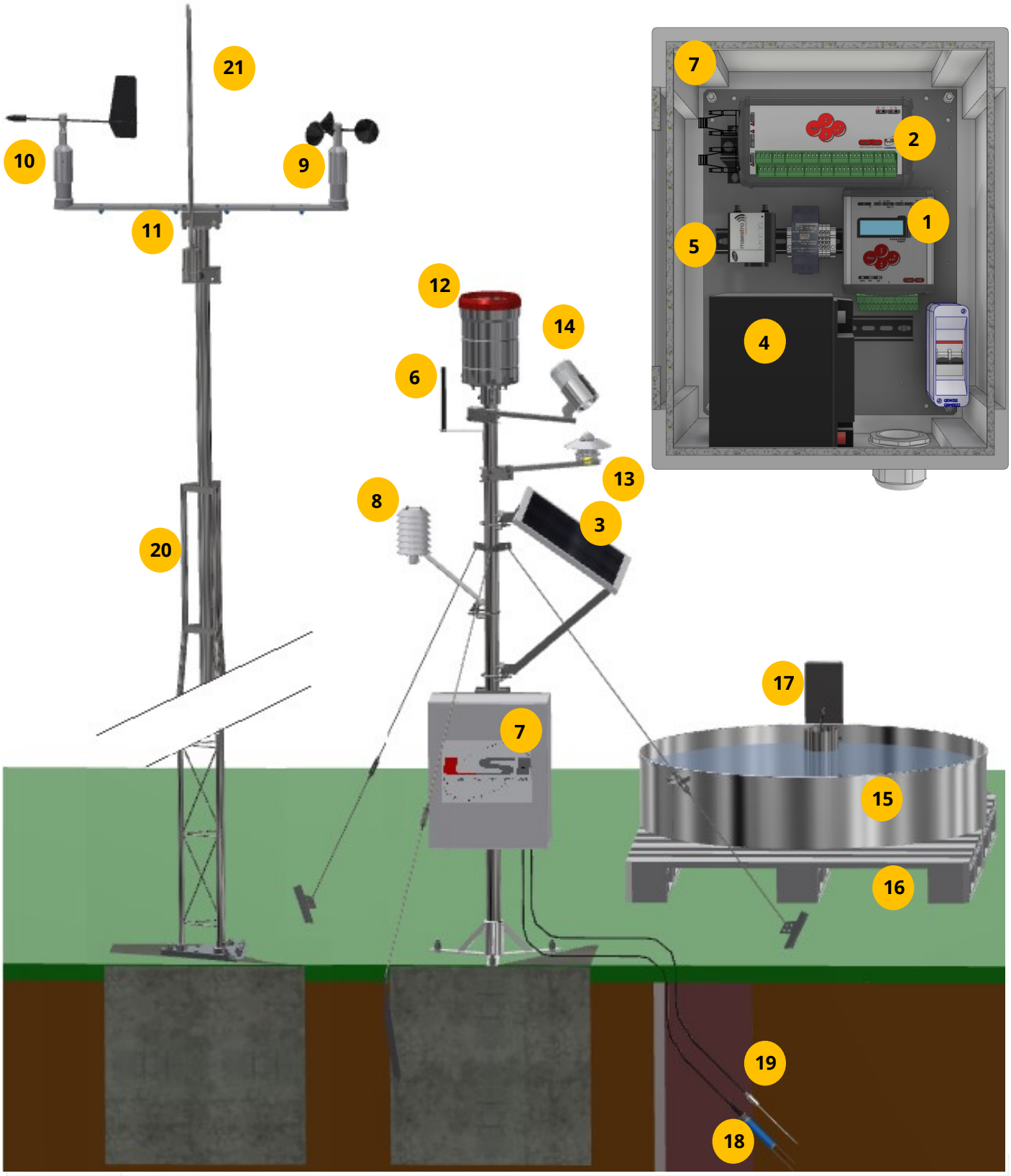

NOTES

A	Number of ALIEM depends on the number of sensors in the system. Starting from second ALIEM module, one ELF345.1 IP66 enclosure and solar panel are needed for each module. DEA504 converter and MN1510 cable are required to connect the second and next ALIEM modules to the Alpha-Log data logger
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

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NOTES	
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	DLE041 can be used when only soil temperature is required, or when better accuracy then the one declared for the DQA340 temperature element is required
G	Wind sensors can be mounted on top of 10 m tower as the WMO's requirements . Lightning rod is mounted on the same tower

Ref. Drw	PN	Description	Kit	Ref. Note
		A-Log data Logger (see catalogue MW9005-ENG-01)		
1	**DLALA0100.1**	Alpha-Log/400MB/n.2 RS232/n.1 RS485/n.2 USB/n.1 Ethernet	1	
	XLA010	Pen Driver 8Gb	1	
2	**MDMMA1110**	Alpha-Log/Inputs extension/N.8 Analog.+4 Digitals/RS232-Modbus	1	
		ALIEM modules (additional) (see catalogue MW9005-ENG-01)	Optional	A
	MDMMA1110	Alpha-Log/Inputs extension/N.8 Analog.+4 Digitals/RS232-Modbus	1	
	DEA504	Converter	2	
	MN1510	Cable/Lan 4X2Xawg24/I-S/Ftp-Cmx Cat5-Sch	10	
	ELF345.1	Box IP66/50x40x16cm/230V->13,8V/50W/solar panel regulator	1	
	DYA074	Arm/ELFxxx/to D=45÷65mm.pole	1	
		Solar panel 60 W and battery (see catalogue MW9005-ENG-07)	Optional	A
3	**DYA101**	Solar panel/50W/cable L=5m	1	
	DYA064	Arm/Solar panel/to D=45÷65mm pole	1	
4	**MG0560**	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	
	TXCMA2010	Modem/4G/Antenna+Cable/12V	Altern. to TXCMA2200	
		4G LTE Router (see catalogue MW9005-ENG-07)	Altern. to Modem	B
	TXCRA2200	Router 4G LTE cat. 4 Global/Wi-Fi/Antenna/9÷30 Vdc		
		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 sensor (cups) (see catalogue MW9000-ENG-09)		
9	**DNA301.1**	Sensor/Cup.anem.-Standard/WS/Hz/10÷30V	1	
	DWA525	Cable/L=25m/sensors	1	
		Wind Direction sensor (vane) (see catalogue MW9000-ENG-10)		
10	**DNA310.1**	Sensor/Vane-anem.Standard/WD/0÷1V/10÷30V	1	
	DWA525	Cable/L=25m/sensors	1	
11	**DYA046**	Arm/Multiplesensors/to D=45÷65mm.pole	1	
		Wind speed and direction sensor (cup&vane) (see catalogue MW9000-ENG-06)	Altern. to DNA301.1+DNA310.1	
	DNA121	Sensor/cup&vane anem./WS+WD/Hz+0÷1V/ 10÷30V	1	
	DWA525	Cable/L=25m/DNA121	1	
		Ultrasonic wind sensor (see catalogue MW9000-ENG-07)	Altern. to cup&vane	
	DNB205	Sensor/Sonic Compact/WS+WD/RS485/12÷30V	1	
	DNB305	Sensor/Sonic/WS+WD/RS48512÷30V	Altern. to DNB205	
	DWA833	Cable/L=25m/DNB20x-30x	1	

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Ref. Drw	PN	Description	Kit	Ref. Note
		Rain gauge (Tipping bucket) (see catalogue MW9000-ENG-18)		
12	**DQA230.1**	Sensor/Rain gauge/324cmq/Siphon/Hz	1	
	DWA505	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
13	**DPA154**	Sensor/Pyranometer/First Class/µV/Cable L=10 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 A pyranometer) (see catalogue MW9000-ENG-11)	Altern. to Class B	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 Class B	D
	DPA053	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	
		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	
	DWA410	Cable/L=10 m/DPA154-855-870-863-873-817-822	1	
		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	
	DWA410	Cable/L=10 m/DPA154-855-870-863-873-817-822	1	
		Sunshine duration sensor (see catalogue MW9000-ENG-16)	Optional	
14	**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	
	DWA505	Cable/L=5m/sensors	1	
		Net radiation sensor (see catalogue MW9000-ENG-13)	Optional	
	DPA240	Sensor/Net Radiation/µV/Cable L=10 m	1	
	DYA049	Collar/for sensor arm to D=45÷65mm pole	1	
	DYA031	Arm/DPA240/to DYA049	1	
		Evaporimeter (see catalogue MW9000-ENG-23)		
15	**DYI010**	Evaporation pan/calm well	1	
16	**DYI013**	Plastic base for DYI010 pan	1	
17	**DQC102**	Sensor/Evaporat.level/0÷20cm/4÷20mA/12V	1	
	DWA510	Cable/L=10m/sensors	1	
	DYI012	Elettrovalve water top-up/12V	1	
		Soil moisture and temperature sensor (see catalogue MW9000-ENG-25)		E
18	**DQA340**	Sensor/Material % water content+Temp./DTR/2x0÷1V/6÷24V	1	
		Soil temperature (see catalogue MW9000-ENG-24)	Optional	F
19	**DLE041**	Soil Temperature sensor	1	

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Ref. Drw	PN	Description	Kit	Ref. Note
		Tower H.10 m for wind sensor (see catalogue MW9007-ENG-03)		G
20	**DYA318**	Meteo tower/H=10m/Tiltable	1	
	DYA020.1	Anchoring bolts for tripod/3 set	1	
	DYA026	Ground picket/L=1m/3set	1	
		Lightning rod with terminal (see catalogue MW9007-ENG-02)		G
21	**DYA091**	LightningRod/Rod/L=1.25m/to D=50 mm.pole	1	
	DYA094	LightningRod/Copper cable/50 mm2/D=9mm/ L=13m	1	
	DYA098	LightningRod/Discharger rod/L=1.5m	1	
	DYA058	Arm/D=50 mm.sensors/to D=45÷65mm. pole	1	
		Pole H.2 m (see catalogue MW9007-ENG-01)		
	DYA006.1	Pole/H=2m/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	