**Order code**
ME-AC-SMS-32

IntesisBox®
SMS - Mitsubishi Electric air conditioners

Controller with SMS interface for monitoring and control Mitsubishi Electric air conditioners.

Control your Mitsubishi Electric air conditioning system from your mobile phone by means of sending/receiving simple SMS messages.

Up to 32 AC indoor units

ME-AC-MBS-1

IntesisBox®
ME-AC-SMS-32

SMS

Bus RS485
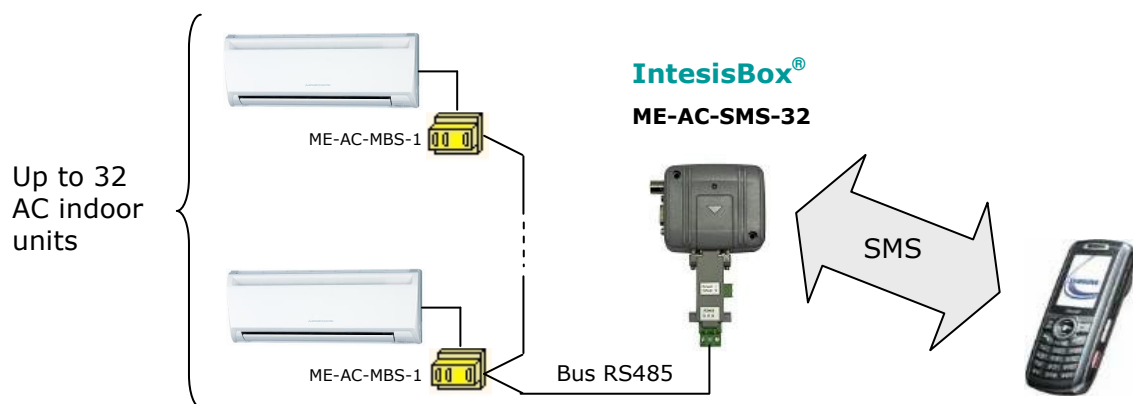
IntesisBox® ME-AC-SMS-32 has been designed to monitoring and control Mitsubishi Electric AC indoor units by means of sending and receiving simple SMS messages from any mobile phone or PDA. It is compatible with all models of *Domestic* & *Mr.Slim* lines. Requires the installation of one ME-AC-MBS-1 interface in each AC indoor unit to control.

The communication with the AC indoor units is over standard RS485 bus, allowing a bus distance of up to 1.200 meters. ME-AC-SMS-32 performs a continuous monitoring of internal operation parameters and alarm status of the AC units, allowing to immediately send an SMS, to one or more recipients, after detection of an alarm in any AC unit.

Security in front of unwanted access: Allows configuring a list of phone numbers with permitted access to the system, any phone that is not in the list can not access the system.

Alarms notification fully configurable: Allows configuring one or more phone numbers (recipients) to notify the alarms, notification of alarms restoration (back to normal), and a maximum quota of alarms to notify per day.

Automatic control of A.C. units: Powerful and flexible automatic management of the A.C. units (Start/Stop, Set Temp and Mode) based on calendar.

Different languages: Language for SMS messages is selectable.

Simple configuration and setup: The interface comes pre-configured from factory; just the number of A.C. units to control must be configured for a simple operation. The entire configuration is done through simple SMS messages.

Intesis software

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Description

IntesisBox® ME-AC-SMS-32 is an interface that will allow you to monitor and control your Mitsubishi Electric air conditioning installation by means of sending and receiving simple SMS massages.

IntesisBox® ME-AC-SMS-32 can only control the indoor units of your installation, and is compatible with all models of Domestic and Mr.Slim series.

IntesisBox® ME-AC-SMS-32 communicates with the AC indoor units through RS485 bus, and allows connection to up to 32 AC indoor units and a maximum bus distance of 1200 meters.

☞   It is necessary to install an ME-AC-MBS-1 interface in each AC indoor unit to be controlled, and to configure all these interfaces with a unique address inside the bus (1, 2, 3… , from 1 ascending and consecutively). Consult your IntesisBox provider for details on how to acquire and configure the ME-AC-MBS-1 interfaces.

IntesisBox® ME-AC-SMS-32 will allow you to:

Monitor the status of one, some or all the AC indoor units in any moment by simply sending an SMS message from your mobile phone.

Command, i.e. start/stop, change operation mode or set temperature, one, some or all the AC indoor units in any moment by simply sending an SMS message from your mobile phone.

Notify any alarm occurred in the installation to one or various recipients by means of an SMS message sent by the interface, and also the alarm restorations.

Configure a powerful and flexible automatic management of the AC indoor units. ME-AC-SMS-32 can start/stop, change the operation mode and the setpoint temperature of the AC indoor units automatically based on calendar, in a "day of the week" basis (Monday to Sunday), and also in a specific-day-profile basis that can be freely assigned to any period of time (between two dates).

Restrict access to unauthorized users.

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Contents

IntesisBox® ME-AC-SMS-32 includes the following components:

1. Modem GSM.
2. RS232/RS485 converter.
3. Antenna, with magnetic support and interchangeable rod, incorporating a 3 meters long cable with connector.
4. Power supply 110-230Vac / 50-60Hz.

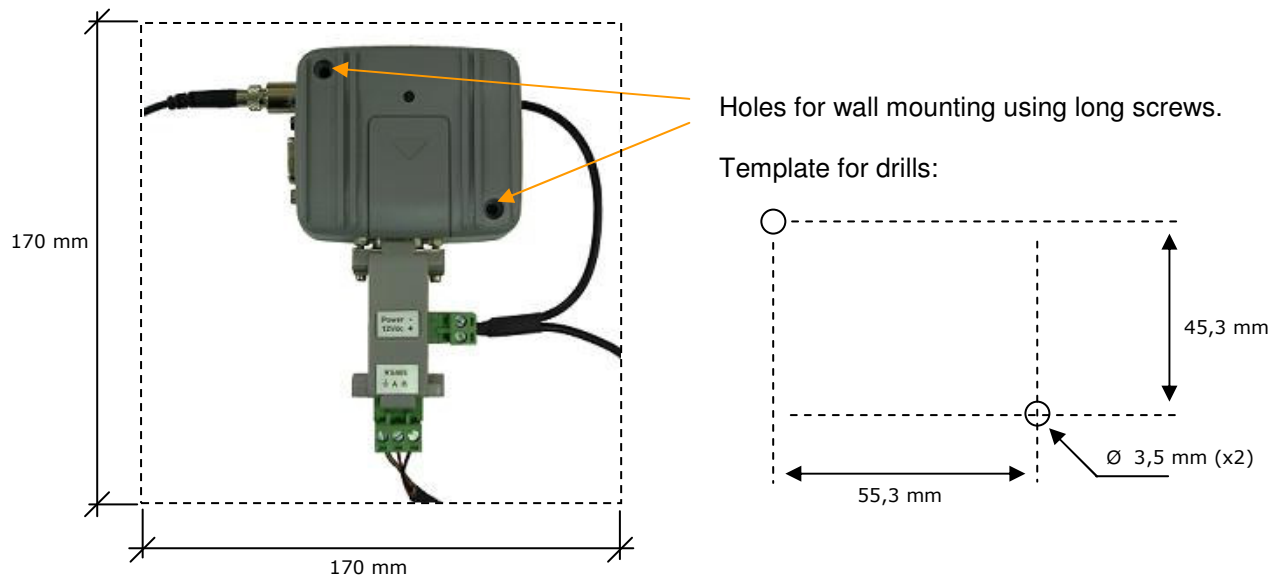URL | http://www.intesis.com
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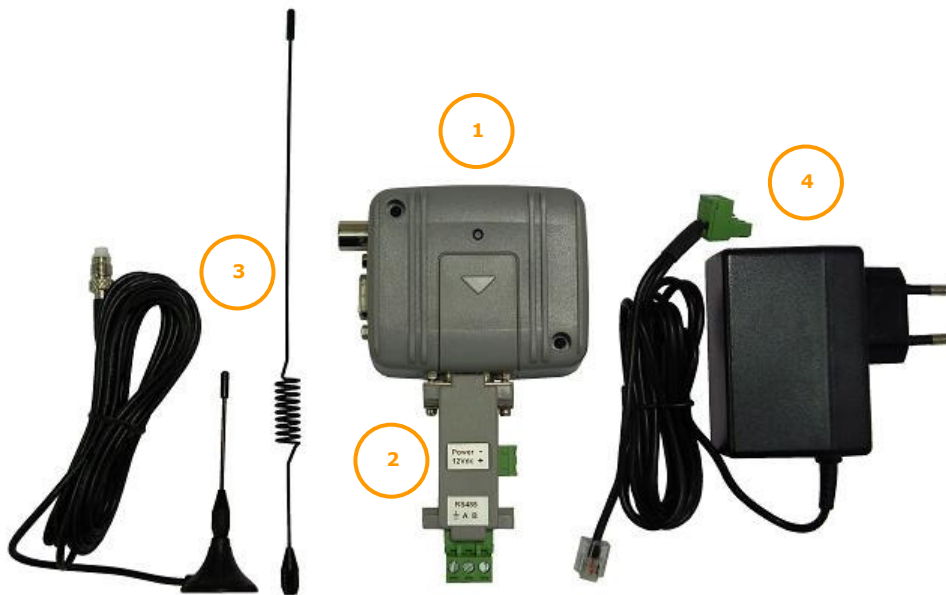
Installation

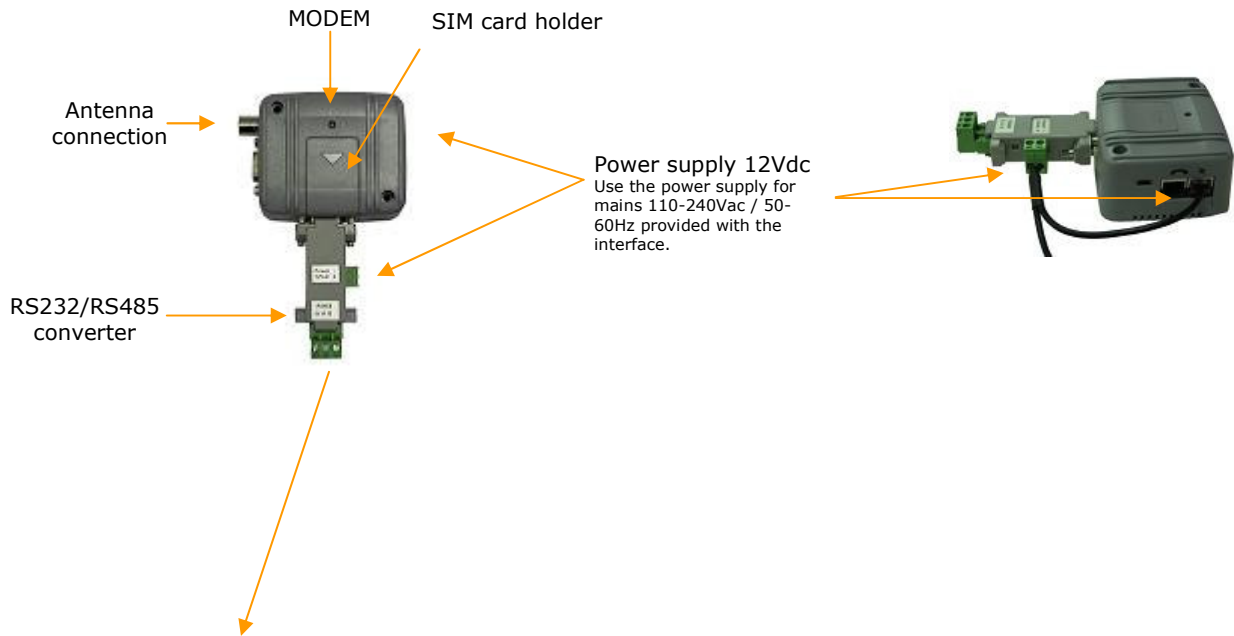Dimensions:
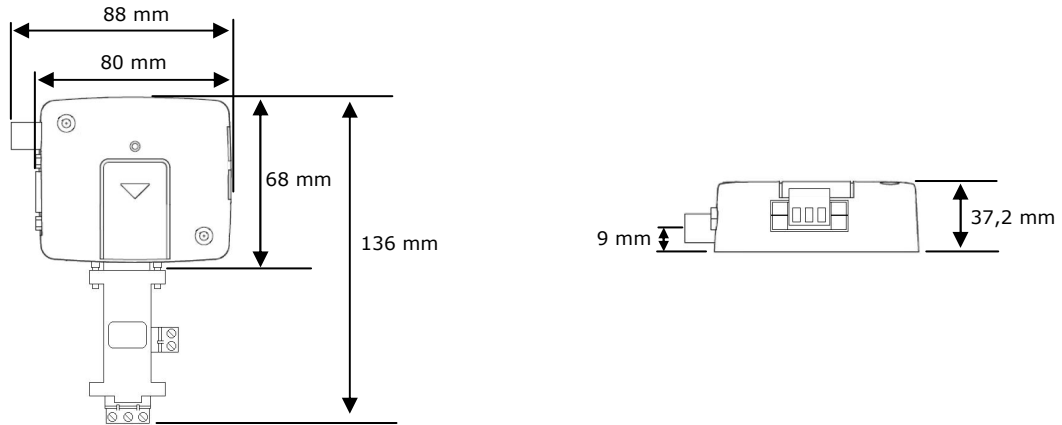
Minimum space recommended for installation of the interface, with space enough for external connections:

Holes for wall mounting using long screws.

Template for drills:

Connections

MODEM

SIM card holder

Antenna connection

Power supply 12Vdc
Use the power supply for mains 110-240Vac / 50-60Hz provided with the interface.

RS232/RS485 converter

RS485 connection with ME-AC-MBS-1 interfaces
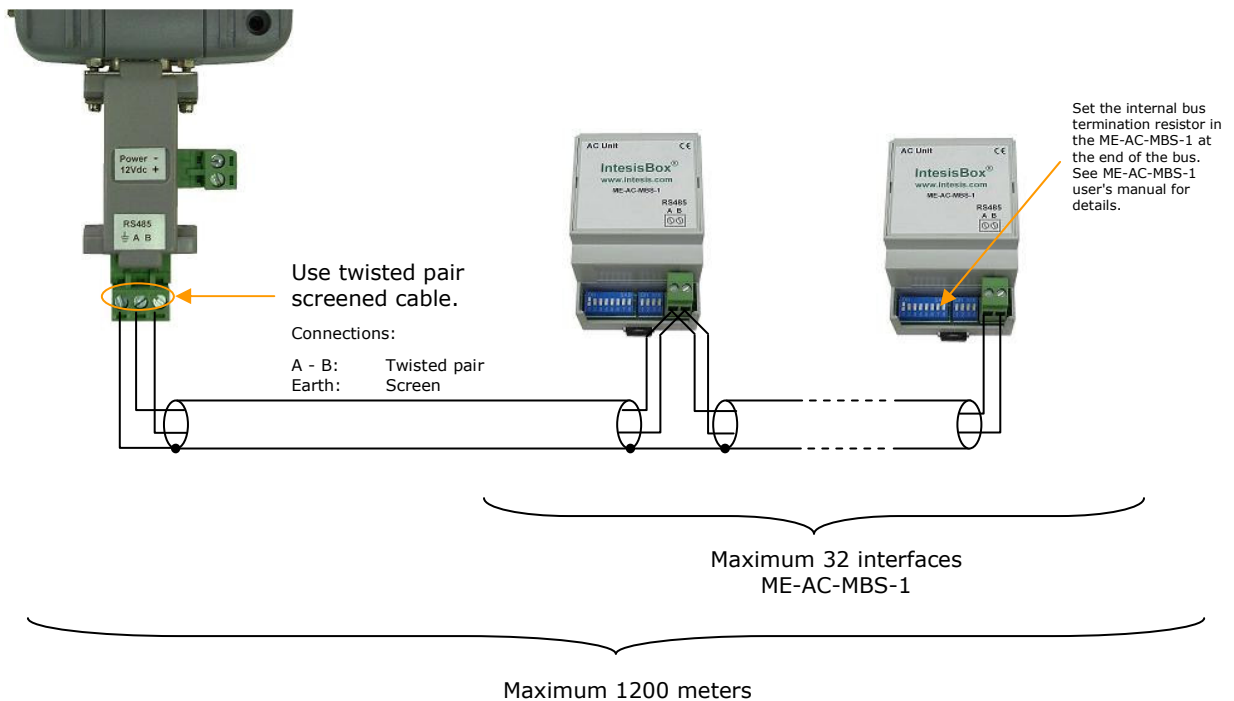
Set the internal bus termination resistor in the ME-AC-MBS-1 at the end of the bus. See ME-AC-MBS-1 user's manual for details.

Use twisted pair screened cable.

Connections:

A - B: Twisted pair
Earth: Screen

Maximum 32 interfaces
ME-AC-MBS-1

Maximum 1200 meters

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Basic Configuration

The interface is configured through SMS messages sent from any mobile phone, messages must be sent to the phone number assigned to the SIM card into the interface.

It is only necessary to configure in the interface the number of AC units to be controlled, the rest of basic configuration comes preset from factory. To configure in the interface the number of AC units, just send to it an SMS with the following command:

CONF_DISP x

Where **x** is the number of AC units of the installation (1 to 32). As commented before, do not forget to set appropriately the bus addresses of the ME-AC-MBS-1 interfaces, from 1, ascending, consecutively, and uniquely.

The interface comes from factory configured in Spanish language, to change the language use the command:

 # CONF_LNG x   Where **X** is: **0** for English, **1** for Spanish, **2** for Catalan.

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Basic Functionality

1) To consult the status of one, some or all the AC units, send to the interface an SMS with the command:

Aa

Where **a** is the AC unit number (1 to 32). The interface allows to consult the status of some AC units by sending a single SMS, for example send the command **# A1 A5 A10** if you want to consult AC units 1, 5 and 10, or send **# A0** if you want to consult the status of all the AC units.

In response to this command the interface will answer (in one or various SMS depending on the volume of information to send) the required information. The number of parameters per AC unit sent in response to this command is configurable, by default are the following:

Parameter	Values	Description	Example
OnOff	On…Off	State (On/Off)	On
Mode	Cool..Heat…Fan…Auto	Mode (Cool, Heat, Dry, Auto, Fan)	Cool
Set Temp.	18..30 ºC	Set Temperature	22ºC
Ambient Temp.	0..60 ºC	Ambient Temperature	22ºC
Fan speed	0..3	Fan Speed	High
Func.Hours	0..65535	Functioning Hours of the AC unit	0
OnOff Calendar	Yes..No	control by calendar activated	No
Error	None…65535	Error code of the AC unit	None

2) To execute orders in one, some, or all the AC units, send an SMS with the command:

Aa Dd Mm Ttt

Where:
- **a** is the AC unit number (1 to 32). The interface can execute orders in more than one AC unit by sending a single SMS, for example specify **A1 A5 A10** if you want to execute the order in AC units 1, 5 and 10, or specify **A0** to execute the order in all the AC units.
- **d** is the State of the unit (0=Off, 1=On). This parameter is optional, if it is not specified then the state of the AC unit will not be modified.
- **m** is the Operation Mode (0 or A => Auto, 1 or H => Heat, 2 or D => Dry, 3 or F => Fan, 4 or C => Cool). This parameter is optional, if it is not specified then the operation mode of the AC unit will not be modified.
- **tt** is the Set Temperature in ºC (18..30). This parameter is optional, if it is not specified then the setpoint temperature of the AC unit will not be modified.

In response to this command the interface will answer (in one or various SMS depending on the volume of information to send) with the current status of the units after the execution of the order (if it is an order for all the units then there will be no response of the interface). These are some examples of SMS messages with commands of orders:

Command	Description
# D1 M4 T20 A1	On AC unit 1 in Cool Mode and Set Temp=20ºC
# D1 MC T20 A1	The same as above
# d1 m4 t20 a1	The same as above
# D0 A1 A3	Off AC units 1 and 3
# T22 A0	22 ºC to all AC units
# A0 D0	Off all AC units
# D0 A1	Off AC unit 1
# A1 D1 A2	On AC units 1 and 2

3) To enable the interface to notify the alarms occurred in the system, one or more recipients must be configured, to do so send an SMS with the command:

 # CONF_NALAR x…x

Where:
x…x is the phone number recipient of the alarms. The interface can send the alarms to more than one recipient, just specify all the desired recipient's phone numbers separated by space in the command, for example **# CONF_NALAR 609010203 609010204**, the format of the phone numbers can be national (i.e. 609010203), international (i.e. +34609010203), or short numbers of GSM Corporative Telephony Service provided by some GSM network providers (i.e. Movistar Corporativo in Spain).

Later you can:
Add a number to the list of recipients, use the command with the modifier +, i.e. **# CONF_NALAR + 609010205**
Delete a number from the list, use the command with the modifier -, i.e. **# CONF_NALAR - 609010205**
Consult the numbers currently in the list, use the command **# CONF_NALAR ?**

Full Functionality

Monitoring and controlling the air conditioning system			
Function	**Related Commands**	**Description**	**Examples**
Consult the status of AC units	#A	Command to consult the status of the AC units, of one, some or all the units.	# A1 # A2 A10 # A0
Execute orders in the AC units	# A D M T	Command to execute orders in the AC units, i.e. On/Off, selection of the operation mode, and change of the setpoint temperature, in one, some or all the units.	# A1 D1 MC T22 # A1 A2 D1 # A0 D0
Automatic management of the AC units based on calendar		The interface allows configuring an automatic management of the AC units based on calendar (On/Off, select the operation mode and the setpoint temperature). This management can be in a day-of-the-week basis (the same management for all Mondays, Tuesdays, etc.) or in a special-day-profile basis that can be later assigned to any period between two dates. This functionality comes disabled from factory. See below the commands related to enable and configure it.	
Reception of the system alarms		The interface can notify the alarms occurred in the AC units to one or more recipients, and also can notify the restoration of alarms. A maximum number of notifications per day can also be configured. This functionality comes disabled from factory. See below the commands related to enable and configure it.	
Configuration of the interface			
Function	**Related Commands**	**Description**	**Examples**
Consult the commands accepted by the interface	# HELP	Returns the list of commands accepted by the interface	# HELP
Selection of language	# CONF_LNG	Configuration of the language used by the interface	# CONF_LNG 0
Number of AC units to be controlled	# CONF_DISP	Configuration of the number of AC units connected to the RS485 bus, to be controlled by the interface	# CONF_DISP 10
Internal parameters per AC unit offered by the interface	# CONF_PAR	Configuration and consultation of the internal parameters per AC unit offered by the interface in response to a consult of status command.	# CONF_PAR P1 P2 P5 # CONF_PAR P0 # CONF_PAR ?
Automatic management of the AC units based on timetable and calendar	# CONF_HOR # CONF_ASG # CONF_NUM	Configuration of the automatic management of AC units based on timetable and calendar. This management can be in a day-of-the-week basis (the same management for all Mondays, Tuesdays, etc.) or in a special-day-profile basis that can be later assigned to any period between two dates	# CONF_HOR 1 # CONF_HOR + WD10 M0 T24 A1 ON08:00:00 OFF19:00:00 # CONF_ASG + SA01/06/2008 EA30/09/2008 WD10 # CONF_NUM 609010203
List of phone numbers with access to the interface	# CONF_ACCESS # SPC_CLRLIST	Configuration and consultation of the list of phone numbers with access to the interface functions	# CONF_ACCESS 609010203 # CONF_ACCESS - 609010204 # CONF_ACCESS ? # SPC_CLRLIST
Alarms notification	# CONF_NALAR # CONF_RALAR # CONF_MAXALAR	Configuration of the alarms notification, recipients, and alarms restorations, as well as the maximum number of notifications allowed per day	# CONF_NALAR 609100203 609100204 # CONF_RALAR 1 # CONF_MAXALAR 20

Alarm Codes

These are the possible alarm codes, referent to the AC units, offered by the interface.

Code	Description
8000	No error active
8001	Communication error between ME-AC-MBS-1 and the AC indoor unit. Revise connection.
1102	Discharge Temperature high
1108	Internal thermostat detector working (49C)
1110	Outdoor unit fail
1300	Pressure low
1302	Pressure high (High pressure probe working 63H)
1503	Protection against freeze or battery high temperature
1504	Protection against freeze or battery high temperature
1504	Over heating protection
1509	High pressure error (ball valve closed)
1520	Super heating anomaly due to low temp. of discharge. (TH4)
2500	Erroneous operation of drain pump
2502	Erroneous operation of drain pump
2503	Drain sensor anomaly (DS)
4030	Serial transmission error
4100	Compressor pause due to excess of current (initial block)
4101	Compressor pause due to excess of current (overload)
4102	Phase detection opened
4103	Anti-phase detection
4108	Phase opened in phase L2 or connector 51CM opened
4118	Error in the anti-phase detector (electronic board)
4124	Connector 49L opened
4210	Cut due to over-current of compressor
4220	Voltage anomaly
4230	Radiator panel temperature anomaly (TH8)
5101	Ambient temperature probe anomaly (TH1), indoor unit
5102	Liquid probe anomaly (TH2)
5102	Cond/Evap probe anomaly (TH5)
5104	Error detection in discharge temperature
5105	Outdoor probe error TH3
5106	Outdoor probe errorTH7
5107	Outdoor probe errorTH6
5110	Outdoor probe errorTH8
5202	Connector 63L opened
5300	Current probe error
6600	MNET duplicated address definition
6602	MNET Line transmission hardware error
6603	MNET BUS busy
6606	MNET Line transmission error
6607	MNET transmission error
6607	MNET without ack
6608	MNET transmission error
6608	MNET without response
6831	IR remote control transmission error (reception error)
6832	IR remote control transmission error (transmission error)
6840	Transmission error with the indoor/outdoor unit (reception error)
6841	Transmission error with the indoor/outdoor unit (transmission error)
6844	Error in inter-connection cable in the indoor/outdoor unit, indoor unit number deactivated (5 min or more)
6845	Error in inter-connection cable in the indoor/outdoor unit (cabling error, disconnection)
6846	Initial timer deactivated
8010	Communication error between ME-AC-SMS-32 and ME-AC-MBS-1. Revise connection.
8011	CRC error in communication between ME-AC-SMS-32 and ME-AC-MBS-1. Revise connection.
8012	Frame too short in communication between ME-AC-SMS-32 and ME-AC-MBS-1. Revise connection.
8013	Frame too long in communication between ME-AC-SMS-32 and ME-AC-MBS-1. Revise connection.
8100	Internal error in ME-AC-SMS-32, in the communication objects. Reset the device.

Intesis software

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Technical data

Envelope	Plastic. Dimensions: 88 x 136 x 37,2 mm.
Colour	Grey.
Power supply	External power supply for 110-230Vac / 50-60Hz 15W (euro plug) is supplied.
Mounting	Wall
RS485 port	1 x Standard RS485 bus (master) with bus fail safe biasing.
LED indicators	1 x Operating status.
GSM networks compatibility	Quad-Band GSM 850/900/1800/1900 MHz.
GSM output power	- Class 4 (2 W) for EGSM850 & EGSM900. - Class 1 (1 W) for GSM1800 & GSM1900.
SIM card compatibility	SIM card interface 3 V, 1.8 V.
Console port	RS232(DCE). DB9 female. Only used for operation monitoring and maintenance under the indications of Intesis Software.
Configuration	Via SMS messages.
Firmware	Allows firmware upgrades "over-the-air".
Operational temperature range	-30℃ to +75℃.
Operational relative humidity range	5% to 95%, non condensation.
Protection	IP20 (IEC60529).
RoHS conformity	Conforms to RoHS directive (2002/95/CE).
Certifications	CE