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EW(A/Y)T-CZ

Air cooled chiller and
heat pump with inverter
scroll compressor

Accesory
manual

EWAT-CZ
EWYT-CZ

D-EIOOC00110-21_07EN

Rev	7
Date	Aug 2023
Supersedes	D-EIOOC00110-21_06EN

Contents

1   MAIN OVERVIEW

1.1   Introduction
This manual provides the information for the correct installation of each accessory for EWAT – EWYT CZ unit

1.2   Accessories list
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1	Input / Output Expansion Pack	EKRSCIO
2	Connectivity KIT	EKRSCBMS
3	Differential Pressure Transducer for Variable Primary Flow Control	EKRSCDP
4	Temperature Sensor for Master Slave control function	EKRSCTMS
5	Kit DoS router with antenna	EKRSCSM
6	Smart Grid Ready Box	EKSCSGW
7	Restricted Application Definer	EKDAGBL
8	Temperature sensor for DHW application	EKRSCTDH
9	I/O extension for Heating Application	EKRSCIOH

2 INPUT / OUTPUT EXPANSION PACK

2.1 General Description

POL468.85/MCQ can be connected to an input/output extension module to increase the amount of customer functions. The control functions that are managed with the input/output extension module are the following

1	Domestic Hot Water
2	Demand Limit
3	Variable Primary Flow
4	Setpoint Reset
5	Double Setpoint
6	Cooling / Heating digital output indication
7	Defrost digital output indication

The Input / Output Expansion Pack is not compatible with the following function:

|	
1	BACNet MSTP
2	Modbus RTU
3	PLC configured as Slave unit for the Master Slave function

The following table report all the component

Item	Code	Quantity	Description
1	POL965.00/MCQ	1	Main Board
2	FKCT 2,5/ 8-ST x 2	2	Connectors for terminals T4 and T5
3	FKCT 2,5/ 7-ST	1	Connector for terminals T1
4	FKCT 2,5/ 3-ST	1	Connector for terminals T2
5	FKCT 2,5/ 2-ST	1	Connector for terminals T3
6	ZEC 1,0 / 4-ST-3,5 GY35AUC1R1,4	1	Side connector for power supply and serial communication with POL468.85/MCQ 24V/GND → Power Supply B-/A+ → Serial communication with POL468.85/MCQ
7	ZEC 1,0 / 4-LPV-3,5 GY35AUC2CI1	1	Not used

2.2 Electrical Connection

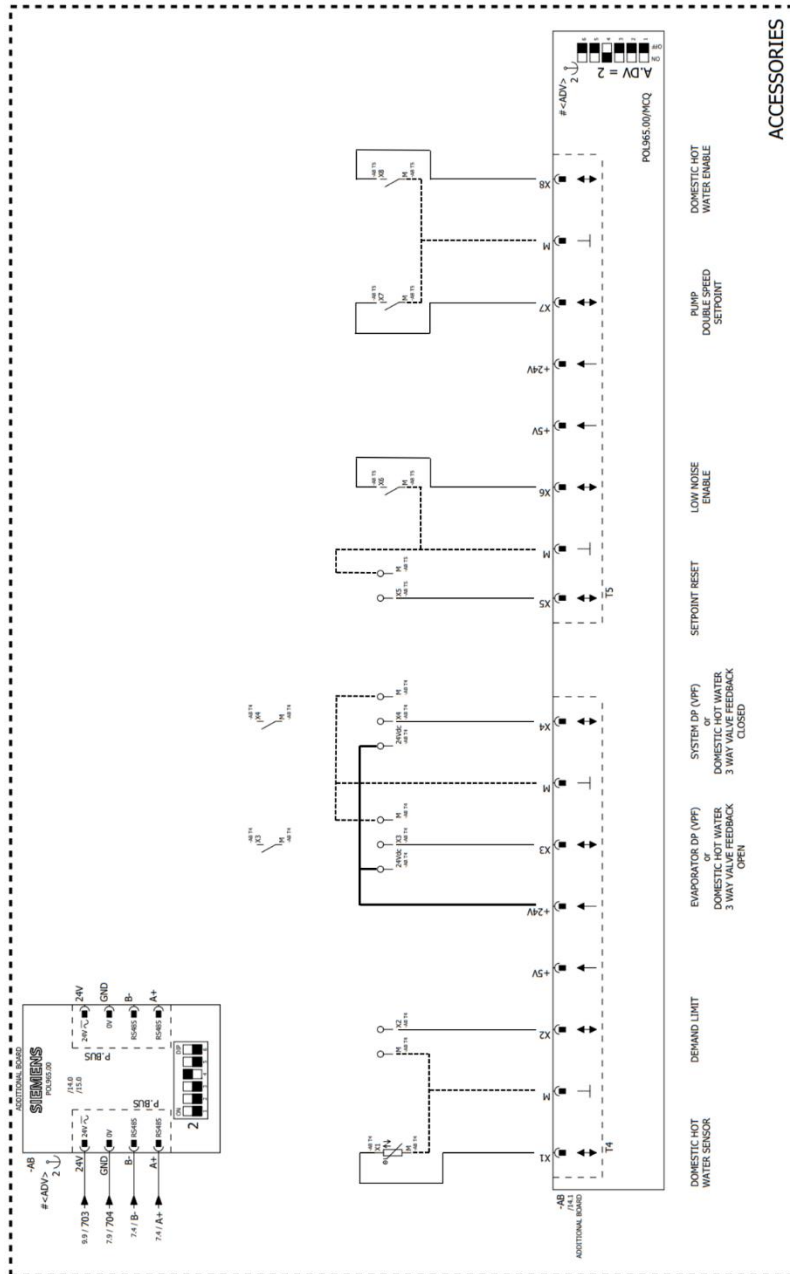The Input / Output expansion module needs to be electrical connected to:
1. Power Supply
2. Serial communication with POL468.85/MCQ.

Both, power supply and serial communication, can be connected through item 6 of previous table, using the lateral port on module right side. Refer to the picture below.
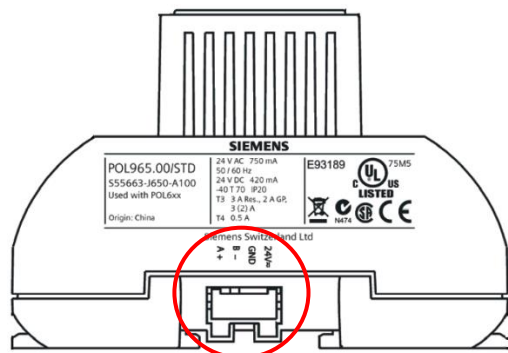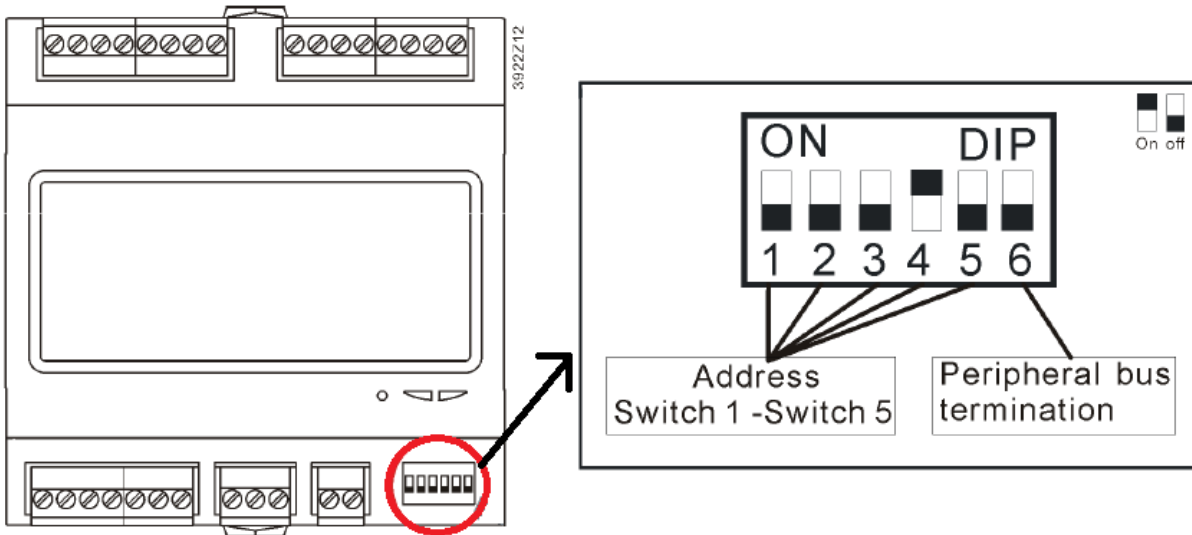

Refer to the following unit wiring diagram for detailed reference of wiring harness.
* Figure doesn't show Domestic Hot Water 3WV connection. Follow same configuration of other digital input.

⚠ **Remember to set all DIP Switches of the module as shown below to configure the proper Board Address**

DIP Switch Index	Position
1	off
2	off
3	off
4	On
5	off
6	off

2.2.1 Master Slave temperature sensor

For common leaving water temperature sensor positioning please refer to specific documentation.

### 2.2.2 Variable Primary Flow

For unit differential pressure sensor positioning please refer to chapter 4.

2.2.3 Domestic Hot Water

For water tank temperature sensor positioning please refer to specific documentation.

2.3   Mechanical Connection

The Input / Output expansion module can be installed in the unit switch box, control plate, using the DIN rail in the left top corner
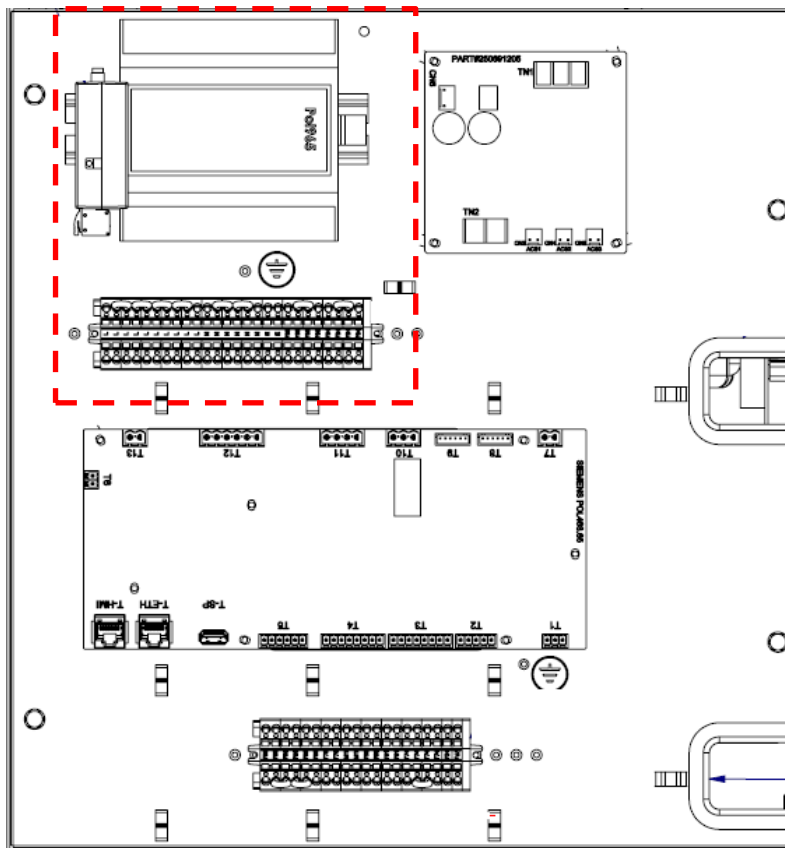
3 CONNECTIVITY KIT

The connectivity kit it is used to enable the following features on the unit controller:

1. Modbus TCP-IP
2. BACNet MSTP
3. BACNet TCP-IP
4. Web Server – Web HMI

This kit consists of a Connectivity Card with an associated Activation ID.

> ⚠️ ***Every connectivity card can be linked to only one POL468.85/MCQ. Link is not pre-defined; it means there is no relationship between connectivity card and POL468.85/MCQ of your specific unit. Once the connectivity card is used to enable the previous function, its usage is no more valid for new boards***

Connectivity Kit can be enabled via *License Manager* app which can be downloaded from the App Store for iOS and Play Store for Android devices.

> ℹ️ **For additional information regarding *License Manager* installation, configuration and usage please refer to specific documentation and dedicated section in the mobile app itself**

4 DIFFERENTIAL PRESSURE TRANSDUCER

The differential pressure transducer is used in the VPF function and returns a 0-10V output voltage depending on the measured water pressure delta.

4.1 Electrical Connection

To connect the transducer to the PLC it is necessary to follow the diagram in chapter 2.2 bearing in mind the following diagram:
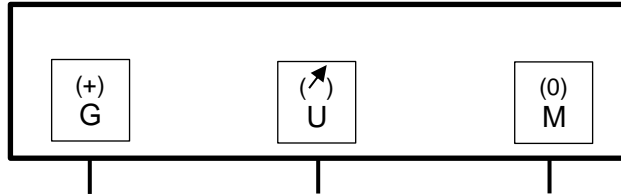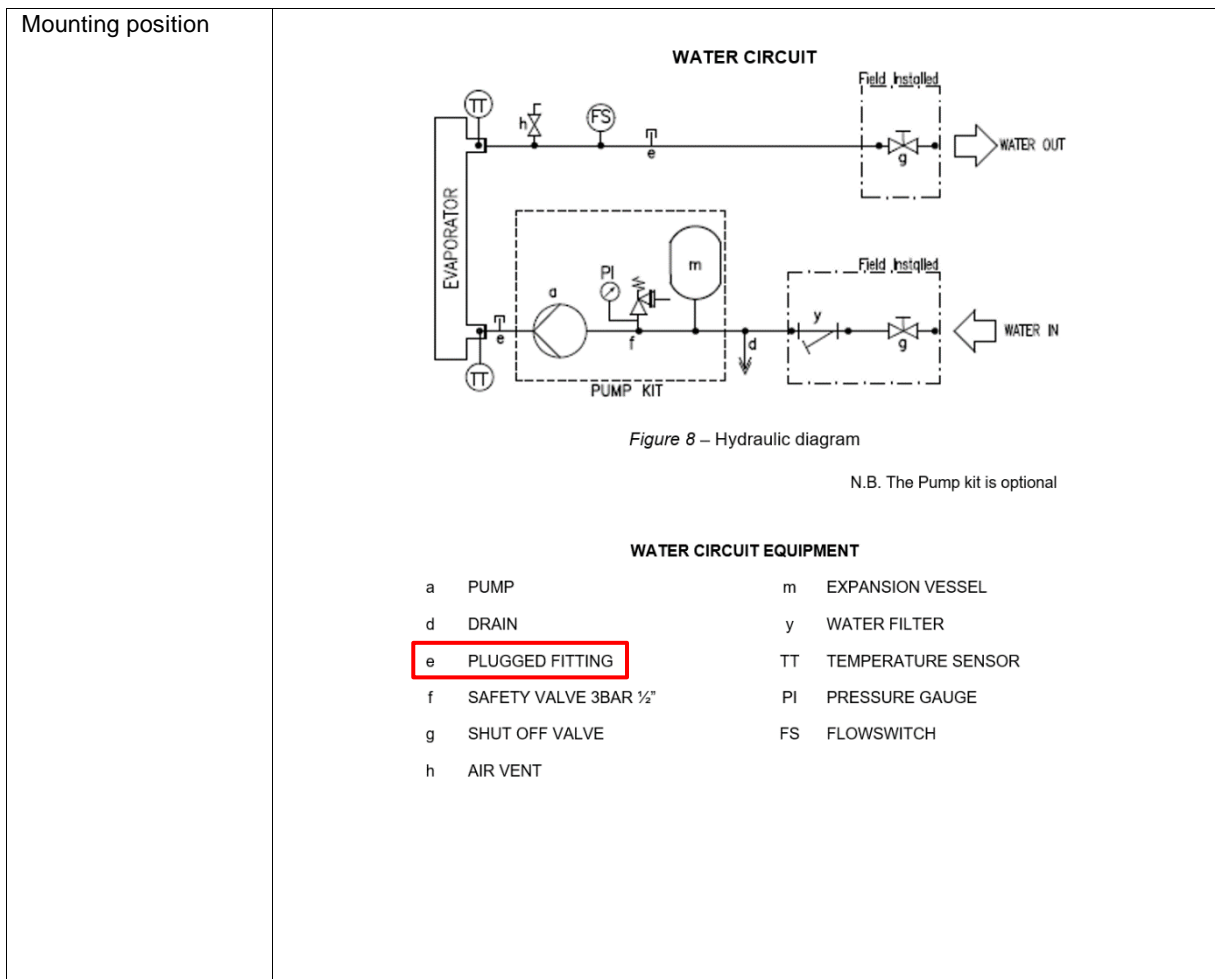

Symbols legend:

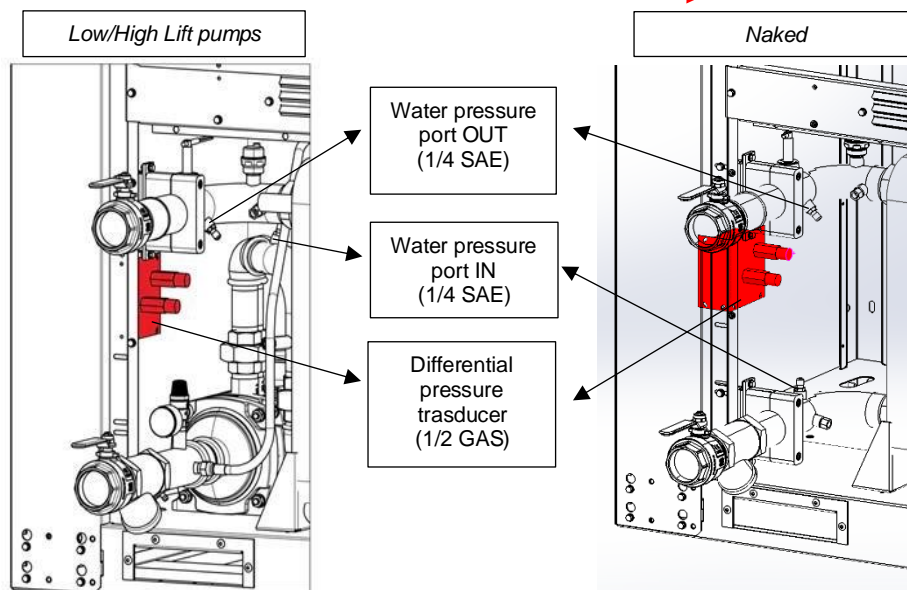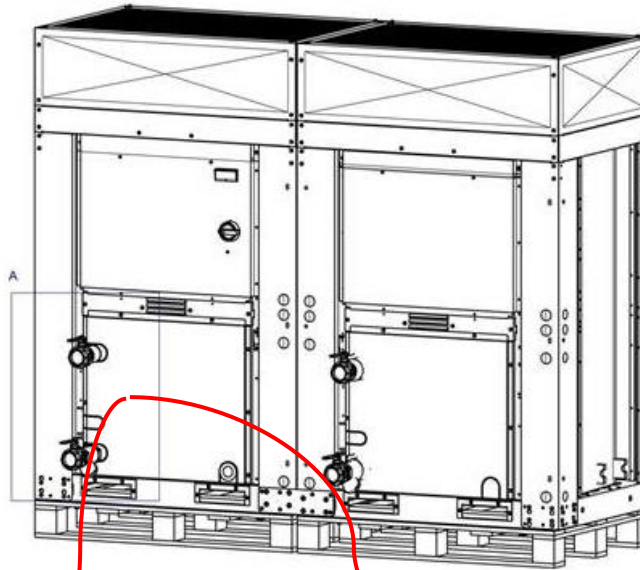| G (+)	Power supply AC 24 V or DC 18..33 V
U (↗)	Measured signal output DC 0..10 V
M (0)	G0/G-, measuring

> ⚠ **The symbols in parenthesis correspond to the terminal marking on the terminal block**

4.2 Mechanical connection

For a proper installation of the transducer inside the unite and a correct acquisition of the differential pressure in liquids please follow the table below:

Mounting position	

WATER CIRCUIT

Figure 8 – Hydraulic diagram

N.B. The Pump kit is optional

WATER CIRCUIT EQUIPMENT

a	PUMP	m	EXPANSION VESSEL
d	DRAIN	y	WATER FILTER
e	PLUGGED FITTING	TT	TEMPERATURE SENSOR
f	SAFETY VALVE 3BAR ½"	PI	PRESSURE GAUGE
g	SHUT OFF VALVE	FS	FLOWSWITCH
h	AIR VENT			

Low/High Lift pumps

Naked

Water pressure port OUT (1/4 SAE)

Water pressure port IN (1/4 SAE)

Differential pressure trasducer (1/2 GAS)

| Medium temperatures	Above 80 °C (steam) or below −15 °C are necessary to install a water trap pipe between piping and sensor
Connection "+"	higher pressure/smaller vacuum.
Connection "−"	lower pressure/higher vacuum
EKRSCDP (shipped loose)	This accessory includes only the differential pressure trasducer. EKRSCDP doesn't include the installation cabling and capillaries*.
*	*The installation of the capillaries should be done using a mechanical reductor ¼ SAE -> ½ GAS

⚠️ - **Mount the sensor below the level of pressure measurement on a vibration-free surface**
- **Device water connections have to be protected against freezing by user**
- **Remove all remaining air from capillaries before hydronic connection with differential pressure sensor**

5   DAIKIN ON SITE MODEM

Daikin on site kit can be used to connect the unit to Daikin on site cloud. Cloud connection offers the possibility to monitor and control the unit by remote. In order to enable Daikin On Site, refer to instructions showed in the Operating Manual.

5.1   Modem Kit

Modem Teltonika Kit is used to establish the connection to Daikin On Site. No SIM are provided within the Modem Kit.

SIM Box

Button for SIM Box opening
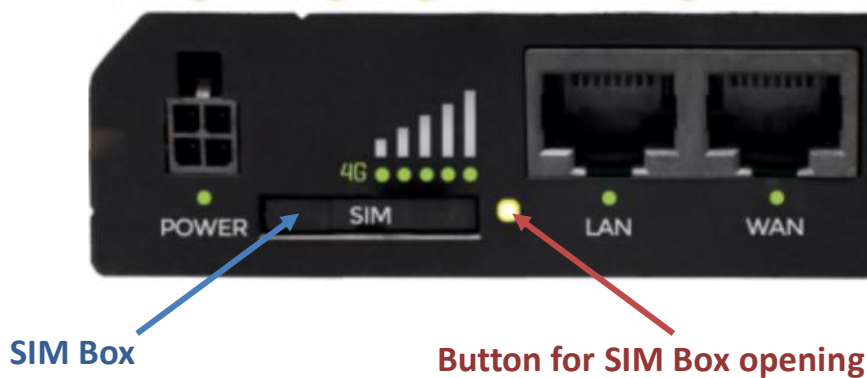
| 1 -Modem Teltonika RUT240	2 –Ethernet Cable	3 –Powe Supply Cable Tamiya 4 pols	4 –Assembly adapter DIN + screws
5 -Tool For SIM remove	6A -2x Antenna LTE 6B -Antenna WiFi	7 –Guide	8 –Kit Box RUT240

5.2 Electrical Connection

The data connection between Router and Microtech will be made using a network patch cable of category 5S or higher (2) also included in the Teltonika kit. Evaluate whether it is of sufficient length or replace it with a suitable one. This connection on the Teltonika RUT240 Router side must be made by connecting the cable exclusively to the port indicated as "LAN".

Ethernet Port
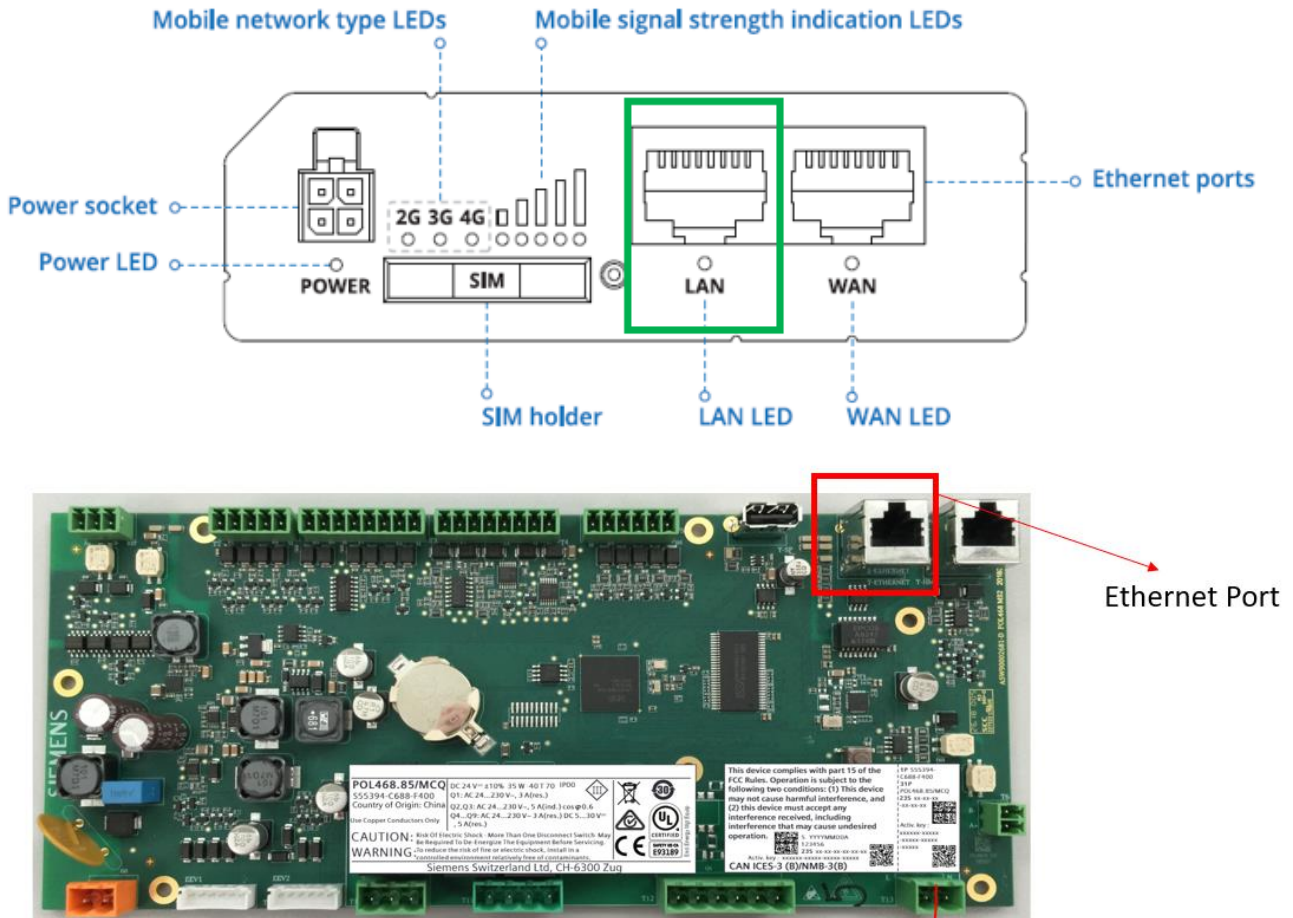
The power supply will be provided by the electrical cabinet and brought to the Router through the connection using the special 4-pole Tamiya connector (3) included in the kit. It will be sufficient to connect only the red (+) and black (-) cable to the power supply, respecting the polarity, while the other two cables must be properly insulated (e.g. with heatshrink or on terminal board if the cable is originally equipped with it).

POWER SOCKET PINOUT

Power / Red wire — Ground / Black wire
Input / Green wire — Output / White wire
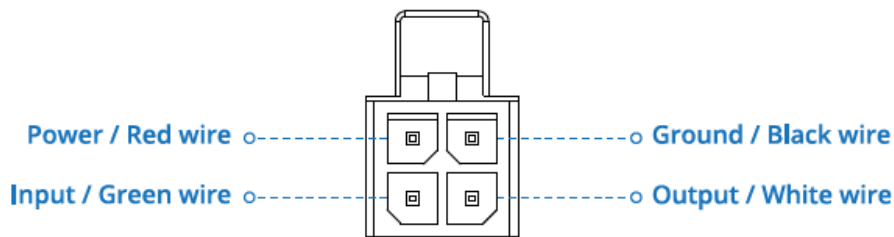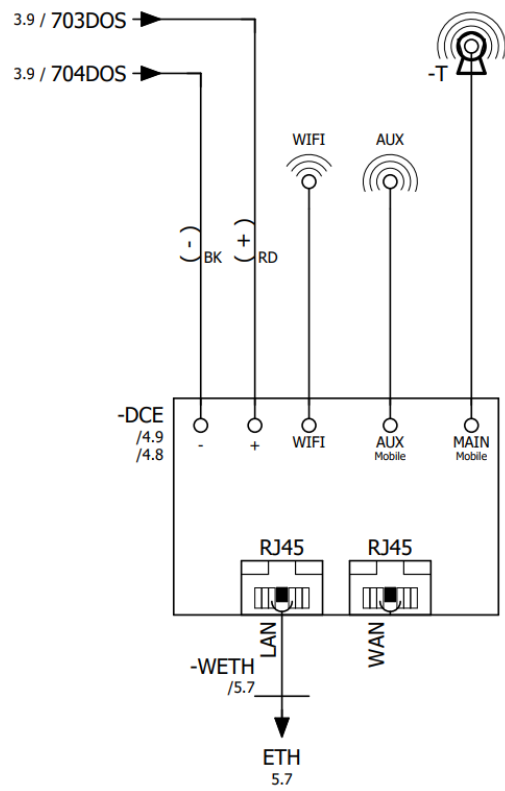
5.3 Mechanical Connection

No Mechanical connection is required.

6   SMART GRID READY BOX

The gateway box is an accessory needed to allow the proper communication between units and an Interface-compatible system components in accordance with Smart Grid applications.

> ⚠ ***In order to enable Smart Grid functionalities please refer to instructions showed in the unit's Operating Manual***

> ⚠ ***Specific mechanical and electrical installation notes can be found in Smart Grid Ready Box Installation & Operating Manual D–EIOCP00301-23***

7   RESTRICTED APPLICATION DEFINER

By activating EKDAGBL software option, the unit envelope keeps following compliancy to Ecodesign regulation No. 813/2013 and the standard EN14825:2018, accordingly the unit falls within the definition of Low Temperature Heat Pump. Please refer to the dedicated Envelope.

> ⚠ *For EKDAGBL activation please refer to "Daikin License Manager" manual*

8   TEMPERATURE SENSOR FOR DHW APPLICATION

This accessory is composed by an engineered sensor with integrated transducer which allows the positioning of the tank for the production of domestic hot water up to a maximum distance of 50m.

The internal signal transducer is not present in the "standard" DHW's probe and requires to be connected at supply voltage as shown in the diagram of "*I/O EXTENSION FOR HEATING APPLICATION*" chapter.

> ⚠ ***This is an active probe is compatible only with EKRSCIOH accessory, not available in combination with EKRSCIO.***

9 I/O EXTENSION FOR HEATING APPLICATION

POL468.85/MCQ can be connected to an input/output extension module dedicated for heating application to increase the amount of customer functions. The control functions that are managed with the input/output extension module are the following:

1	Domestic Hot Water Enhanced
2	Demand Limit
3	Variable Primary Flow
4	Setpoint Reset
5	Double Setpoint
6	Cooling / Heating digital output indication
7	Defrost digital output indication
8	Bivalent Operation

The I/O Extension for Heating Application is not compatible with the following function:

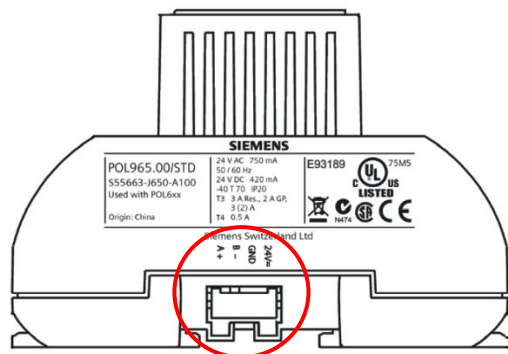|	
1	BACNet MSTP
2	Modbus RTU
3	PLC configured as Slave unit for the Master Slave function

The following table report all the component

Item	Code	Quantity	Description
1	POL965.00/DAE	1	Main Board
2	FKCT 2,5/ 8-ST x 2	2	Connectors for terminals T4 and T5
3	FKCT 2,5/ 7-ST	1	Connector for terminals T1
4	FKCT 2,5/ 3-ST	1	Connector for terminals T2
5	FKCT 2,5/ 2-ST	1	Connector for terminals T3
6	ZEC 1,0 / 4-ST-3,5 GY35AUC1R1,4	1	Side connector for power supply and serial communication with POL468.85/MCQ 24V/GND → Power Supply B-/A+ → Serial communication with POL468.85/MCQ
7	ZEC 1,0 / 4-LPV-3,5 GY35AUC2CI1	1	Not used

9.1 Electrical Connection

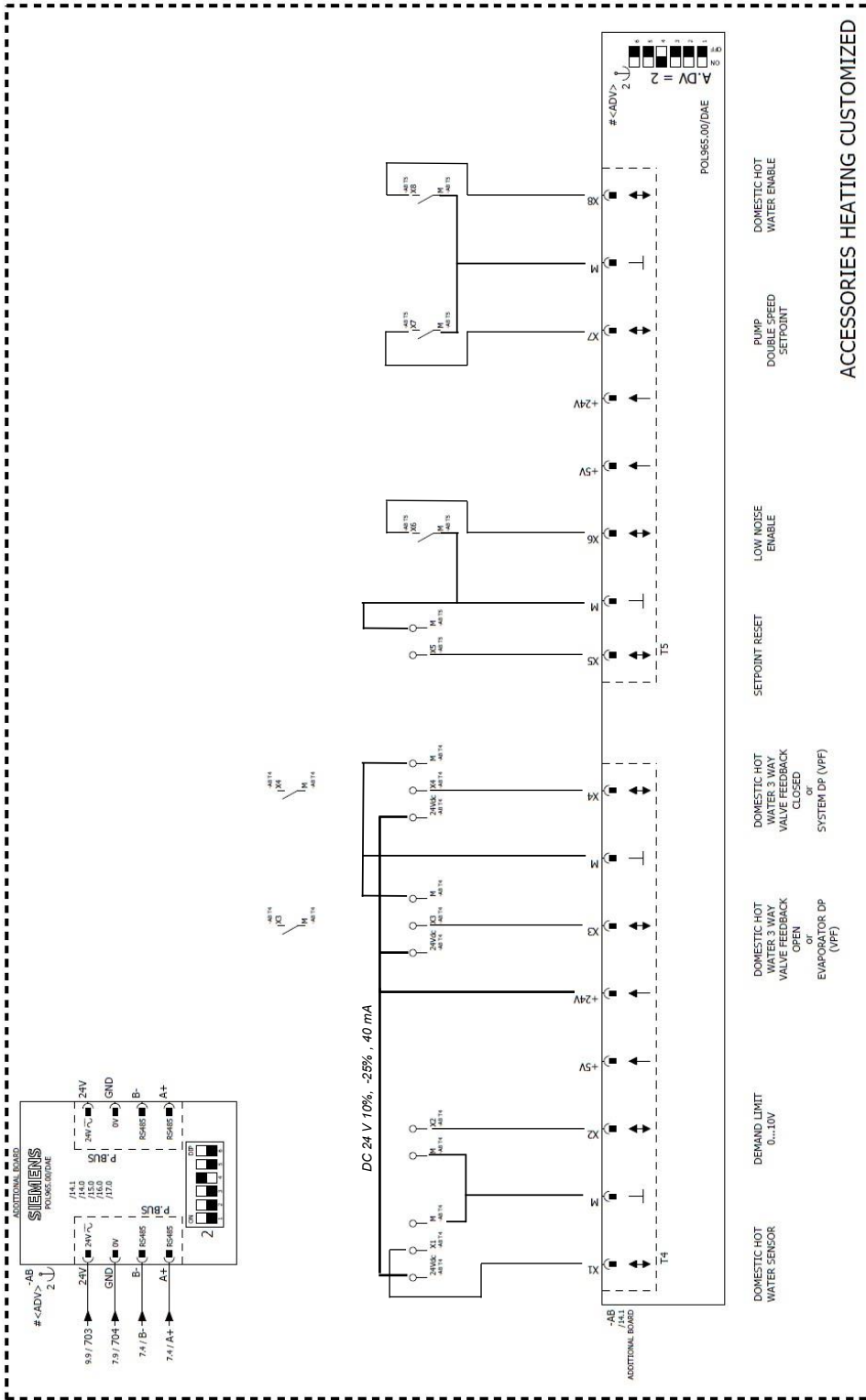The Input / Output expansion module needs to be electrical connected to:
1. Power Supply
2. Serial communication with POL468.85/MCQ.

Both, power supply and serial communication, can be connected through item 6 of previous table, using the lateral port on module right side. Refer to the picture below.
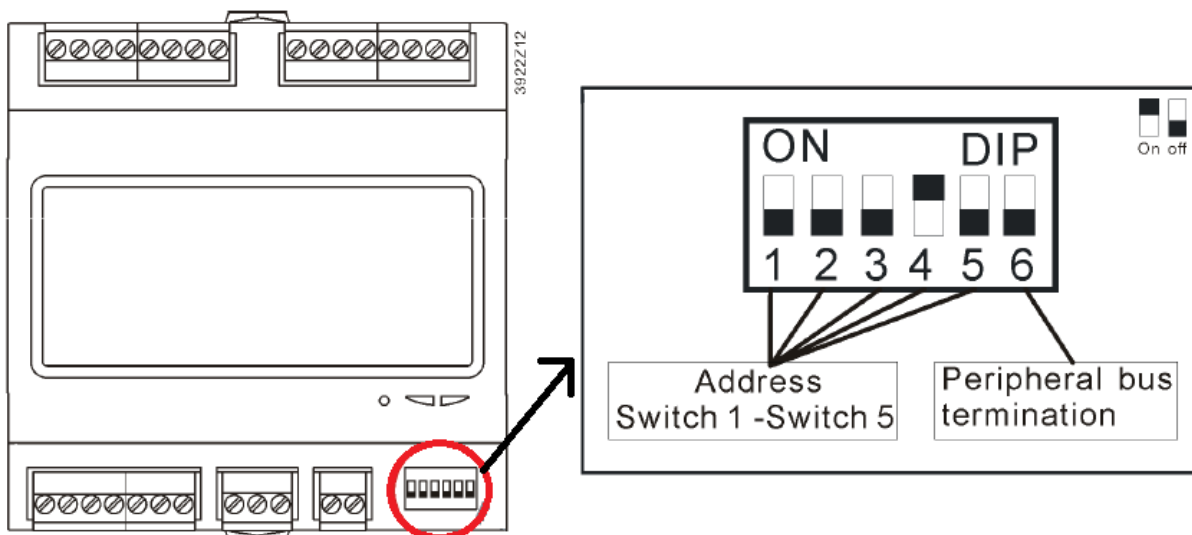

Refer to the following unit wiring diagram for detailed reference of wiring harness.
- Figure doesn't show Domestic Hot Water 3WV connection. Follow same configuration of other digital input.

ACCESSORIES HEATING CUSTOMIZED

Remember to set all DIP Switches of the module as shown below to configure the proper Board Address

DIP Switch Index	Position
1	off
2	off
3	off
4	on
5	off
6	off

9.1.1 Master Slave temperature sensor

For common leaving water temperature sensor positioning please refer to specific documentation.

9.1.2 Variable Primary Flow

For unit differential pressure sensor positioning please refer to chapter 4.

9.1.3 Domestic Hot Water

For water tank temperature sensor positioning please refer to specific documentation.

9.2 Mechanical Connection

The I/O Extension for Heating Application can be installed in the unit switch box, control plate, using the DIN rail.

⚠️ ***EKRSCIOH accessory cannot be used in combination with EKRSCIO accessory.***

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