1	2	3	4	5	6	7	8	9	10	11	12	13	14

WIRING DIAGRAMS FOR GLOBAL / ESENSA AIR HANDLING UNITS

Caution! This wiring diagram is only an addition to our installation and operation manuals, available on our website for download.

Caution! All internal components (fans, controls, sensors, actuators…) to the control board are pre-wired.
The power supply must be connected to the safety isolating switch by a qualified electrician. Earthing is obligatory.

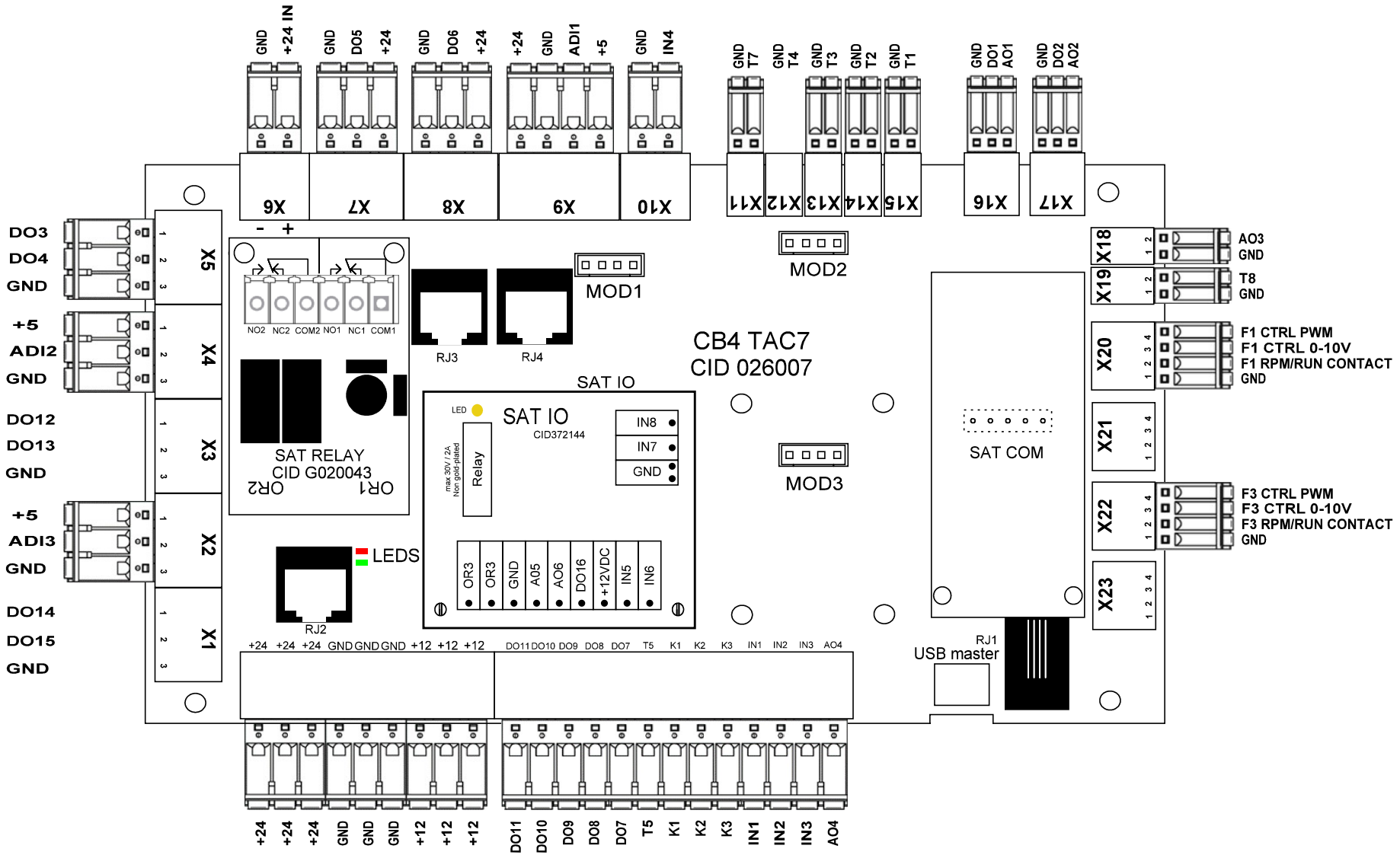
Caution! All electrical connections must be made by a qualified electrician and in accordance with local rules and regulations.

Caution! Residual current circuit breaker 300mA type B

Caution! Fuse protection (D-type, “slow”)
D – 10.000 A – AC3

Electronic boards contains ESD sensitive components.
Use antistatic bracket connected to protective earth in case it is necessary to manipulate them.
In alternative, loose charges by touching the unit and handle boards at corners only.

Changes			Name	Date		Page
Name	Date	Draw.:	msg	17/10/2024		1
		check.:				
		Norm:			Application: General	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					



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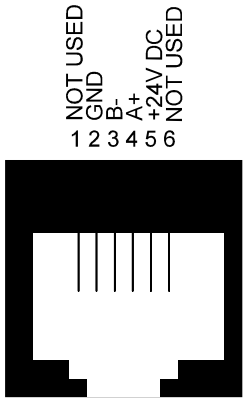
Name	Date	Draw.:	msg	17/10/2024	TAC7	2
		check.:				
		Norm:			Application: Controller	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					

1	2	3	4	5	6	7	8	9	10	11	12	13	14

AO1 - BA+ = outpout 0-10V for external waterborne reheater (option)
DO1 - KWout = output PWM for electric reheater power regulation (option - prewired)
DO2 - KWin- PX = output PWM for electric preheater power regulation (option - prewire
| RX SPEED PWM - RX (prewired)
AO2 - RX SPEED 0-10V - RX (option)
AO3 - BA- = outpout 0-10V for external waterborne recooler or reversible Heat/Cool (o
AO4 - NV = outpout 0-10V for internal hydraulic postheater (option - prewired)
DO3 - BYPASS OPEN- PX (with rotary actuator) (prewired)
DO4 - BYPASS CLOSE - PX (with rotary actuator) (prewired)
DO5 - DAMPER 1 (with or without spring return, Imax = 0,5 A DC) (option - prewired)
DO6 - DAMPER 2 (with or without spring return, Imax = 0,5 A DC) (option - prewired)
DO7 - HEAT CONTACT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO8 - COOL CONTACT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO9 - ALARM CONTACT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO10 - AL dPACONTACT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO11 - FAN ON CONTACT (open collector; Vmax=24 VDC; Imax=0,1 A)
ADI1 - BYPASS POS - PX | RX SPEED FEEDBACK - RX (prewired)
ADI2 - FAN 1 dPa
ADI3 - FAN 3 dPa
T1 - outdoor air T° sensor (prewired)
T2 - extract air T° sensor (prewired)
T3 - exhaust T° sensor - PX (prewired)
T4 - BAin T° sensor
T5 - supply air T° (option)
T7 - BA+ frost protection T° sensor (option -prewired for internal battery)
T8 - BA- frost protection T° sensor (option)

IN1 + 12/24V - FIRE ALARM
IN2 + 12/24V - BOOST
IN3 + 12/24V - BYPASS ACTIVATION OVERRIDE
IN4 + GND - Drain pan full contact (for LP)

K1+ 12/24V - CA MODE: External speed 1 (N.O.)
LS / CP MODE: External start (N.O.)
K2+ 12/24V - CA MODE: External speed 2 (N.O.)
LS / CP MODE: 0-10V (Max. impedance: 1.500 Ohms)
K3+ 12/24V - CA MODE: External speed 3 (N.O.)
LS / CP MODE: 0-10V (Max. impedance: 1.500 Ohms)



RJ12 PINOUT

F1 - FAN 1 (SUPPLY)
F2 - FAN 2 (additional fan for supply flow)
F3 - FAN 3 (EXHAUST)
F4 - FAN 4 (additional fan for exhaust flow)

RJ1: RJ12 connector for TACtouch (option)
RJ2: RJ12 connector for Modbus Pressure CP mode (option)
Modbus Air quality sensors for demand control mode (option)
Modbus Air quality sensors for BOOST in all modes (option)
RJ3: RJ12 connector for ESENSA or GLOBAL LP: free
for GLOBAL PX/RX: Modbus Pressure sensors kit CA (prewired)
and/or filters monitoring (option - prewired), on supply flow
RJ4: RJ12 connector for Modbus Pressure sensors kit CA (prewired)
and/or defrost detecting (option - prewired)
and/or filters monitoring (option - prewired)
NB: for GLOBAL PX/RX: sensor used for extract flow only

SAT IO OR3-OR3:BYPASS STATUS - (option)
SAT IO AO5: 0-10V OUTPUT (airflow / pressure) - (option)
SAT IO AO6: 0-10V OUTPUT (airflow / pressure) - (option)
SAT IO IN5: MASTER SELECTION - (option)
SAT IO IN6: HEAT OFF - (option)
SAT IO IN7: SUPPLY RUN IN FIRE ALARM (open) | dPa ALARM INPUT - (option)
SAT IO IN8: EXHAUST RUN IN FIRE ALARM (open) - (option)

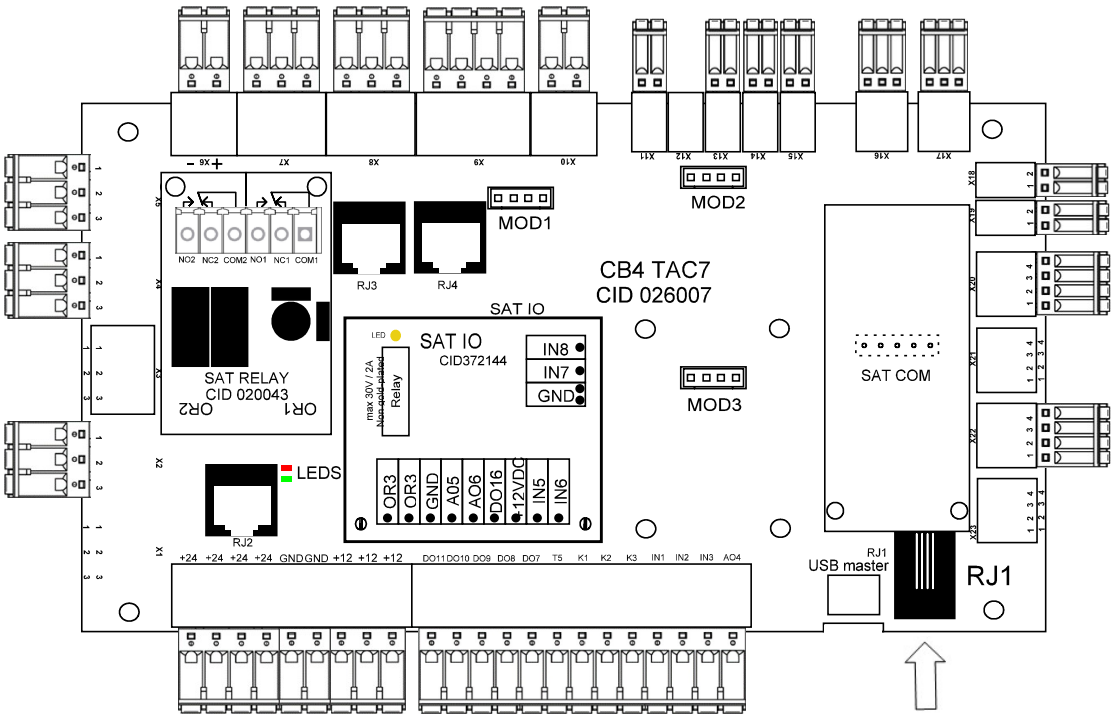
SAT COM - SAT MODBUS or SAT KNX or SAT ETHERNET or SAT WIFI - (option)

SAT RELAY: MANDATORY FOR GLOBAL LP, THEN PREMOUNTED AND PREWIRED.
For other models, output can be mapped thanks to dedicated function "IO mapping" on TACtouch
SAT RELAY OR1 - FOR GLOBAL LP LINEAR ACTUATOR FOR BYPASS - FORWARD (closed) (prewired)
For other models, NC/NO contact MAX 30VDC, 0,45A
SAT RELAY OR2 - FOR GLOBAL LPLINEAR ACTUATOR FOR BYPASS - BACKWARD (closed) (prewired)
For other models, NC/NO contact MAX 30VDC, 0,45A

GREEN LED ON: POWERED ON
RED LED ON: ALARM

+24 : +24V DC (min: +22V DC; max: +26V DC). 0,8 A max
+12 : +12V DC (min: +11,49V DC; max: +12,81V DC). 0,3 A max

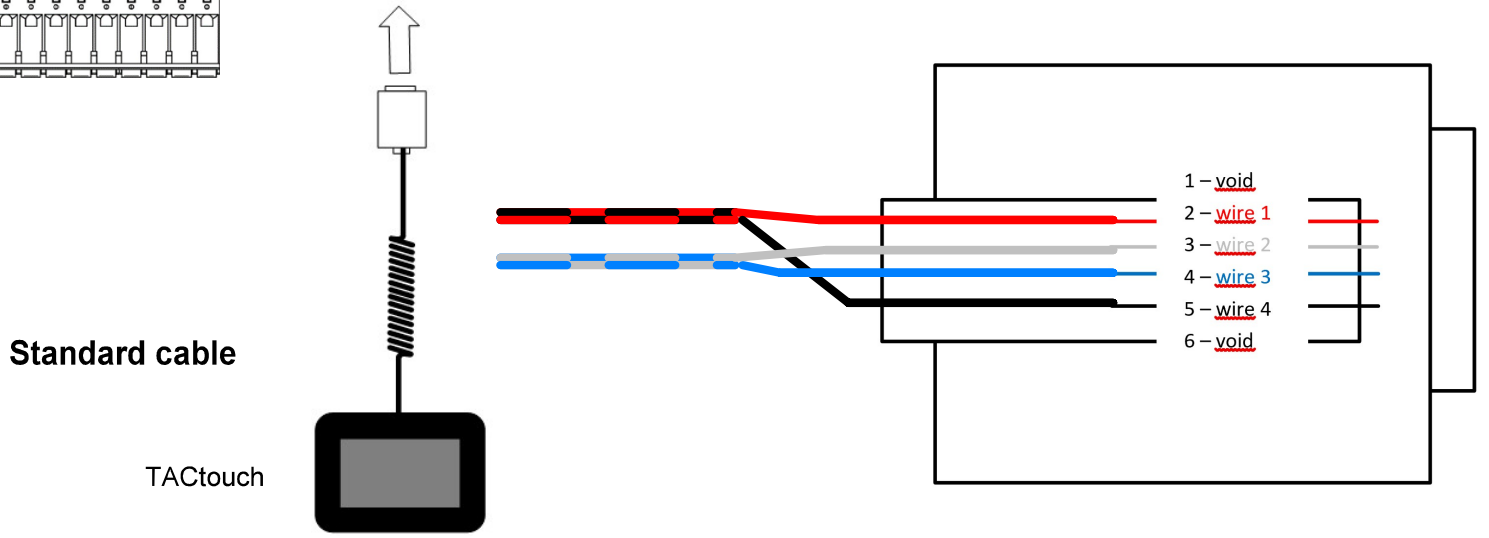
Changes			Name	Date		Page
Name	Date	Draw.:	msg	17/10/2024		3
		check.:				
		Norm:			Application: IO TAC7	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					



Extender cable Wiring

In installation where an extender cable is necessary,
this last one must conform to the RS-485 Standard with twisted pair conductors.
The cable must be shielded.
Conductor Area min 0.2 mm².
The total length must not exceed 100 meters.
Maximum DC resistance on single wire: 8 Ohms
straight wired, 2 pairs connected to RJ12 connectors at cable extremities.
1 pair to the middle pins, the other pair to the extremity pins:

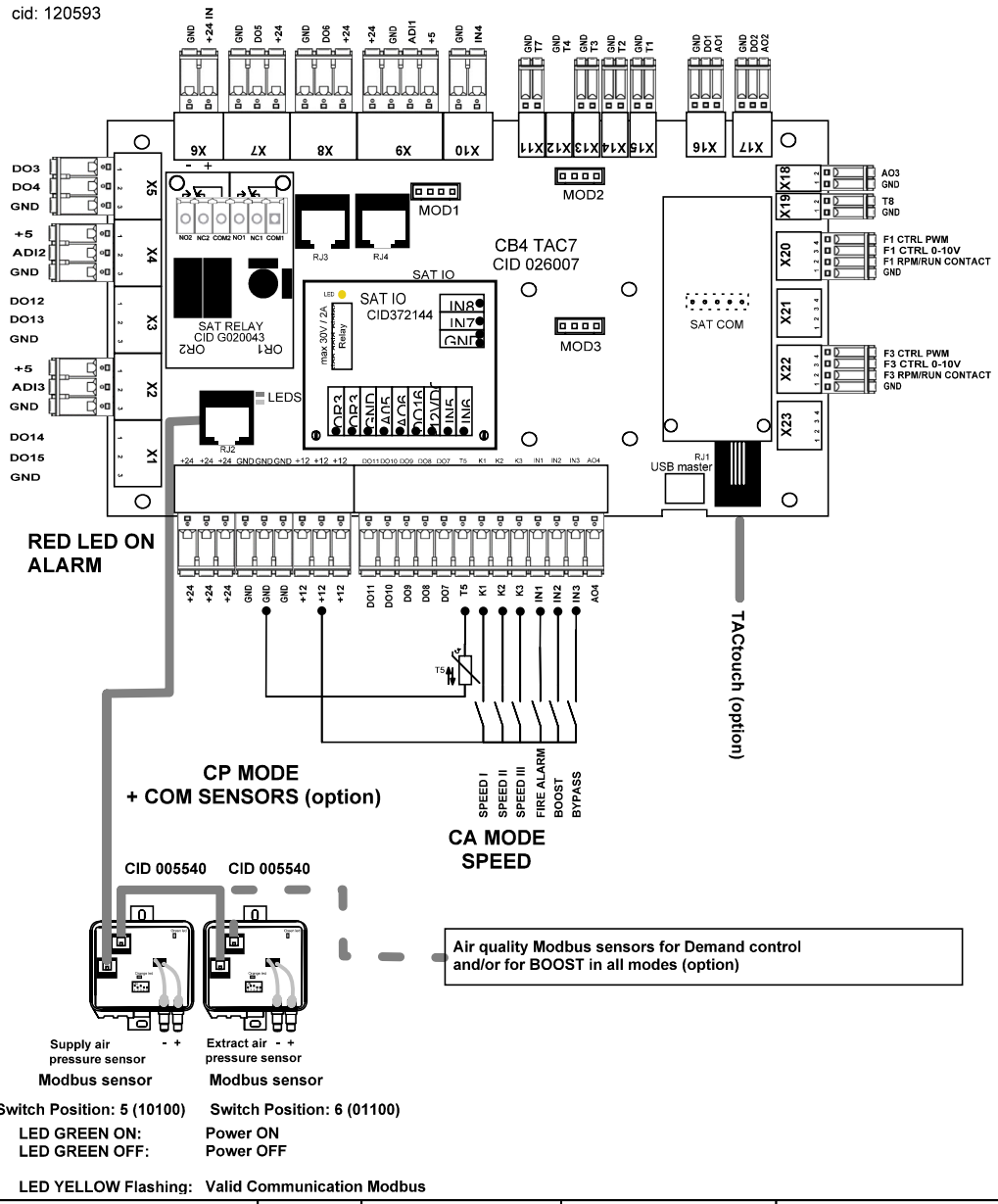
Pinout for each connector as in figure below
(colors are indicative for the wires of the extender cable):



Standard cable

TACtouch

Changes			Name	Date		Page
Name	Date	Draw.:	msg	17/10/2024		4
		check.:				
		Norm:			Application: TACtouch	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					



OPERATION CONNECTIONS

IN1 - FIRE ALARM
IN2 - BOOST
IN3 - BYPASS ACTIVATION OVERRIDE

AO4 - IBA= output 0-10V for internal waterborne reheater (option)

K1 - CA MODE: External speed 1 (N.O.)
DEMAND/ CP MODE: External start (N.O.)
K2 - CA MODE: External speed 2 (N.O.)
DEMAND / CP MODE: 0-10V (Max. impedance: 1.500 Ohms)
K3 - CA MODE: External speed 3 (N.O.)
DEMAND / CP MODE: 0-10V (Max. impedance: 1.500 Ohms)

T5 - supply air T°

DO7 - HEAT OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO8 - COOL OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO9 - ALARM OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO10 - AL dPA OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)
DO11 - FAN ON OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)

+12 : +12V DC (min: +11,49V DC; max: +12,81V DC). 0,3 A max
+24 : +24V DC (min: +22V DC; max: +26V DC). 0,8 A max

OPTIONS CONNECTIONS

X2 | ADI3 - EXTRACT FILTER dPa (option)
X3 | DO12 - Cold Climate Preheater
= output PWM for external electric preheater power regulation (option)
X4 | ADI2 - SUPPLY FILTER dPa (option)
X5 | DO3 - BYPASS OPEN- PX (with rotary actuator - prewired)
| DO4 - BYPASS CLOSE - PX (with rotary actuator - prewired)
X6 | +24 IN - GND: +24 VDC power supply for the board (prewired)
X7 | DO5 - DAMPER 1 (with or without spring return, Imax = 0,5 A DC) (option)
X8 | DO6 - DAMPER 2 (with or without spring return, Imax = 0,5 A DC) (option)
X9 | ADI1 - BYPASS POS - PX | RX SPEED FEEDBACK - RX (prewired)
X10 | IN4 - Drain pan full contact (for LP)
X11 | T7 - IBA/EBA+ frost protection T° sensor (option)
X13 | T3 - Exhaust T° sensor - PX (prewired)
X14 | T2 - Extract air T° sensor (prewired)
X15 | T1 - Eutdoor air T° sensor (prewired)
X16 | AO1 - EBA+ = output 0-10V for external waterborne reheater (option)
| DO1 - KWout = output PWM for electric reheater power regulation (option)
X17 | DO2 - PX: KWin = output PWM for electric preheater power regulation (option)
| DO2 - RX: ROTOR SPEED PWM (prewired)
X18 | AO3 - EBA-/REVERSIBLE = output 0-10V for external waterborne recooler
or reversible battery (option)
X19 | T8 - EBA-/REVERSIBLE frost protection T° sensor (option)
| T8 - DEFROST CONTACT FOR HEAT PUMP (option)
X20 | F1 - FAN 1 (SUPPLY)
X21 | F2 - FAN 2 (SUPPLY - additional fan)
X22 | F3 - FAN 3 (EXHAUST)
X23 | F4 - FAN 4 (EXHAUST - additional fan)

FIELD BUSES

RJ1: RJ12 connector for TACtouch (option)
RJ2: RJ12 connector for Modbus Pressure sensors for CP mode
Modbus Air quality sensors for demand control mode (option)
Modbus Air quality sensors for BOOST in all modes (option)
RJ3: RJ12 connector for ESENSA or GLOBAL LP: free
for GLOBAL PX/RX: Modbus Pressure sensors kit CA (prewired)
and/or filters monitoring (option - prewired), on supply flow
and/or defrost detecting (option - prewired)
RJ4: RJ12 connector for Modbus Pressure sensors kit CA (prewired)
and/or filters monitoring (option - prewired);
NB: for GLOBAL PX/RX: sensor used for extract flow only

SATELLITES CONNECTIONS

SAT IO OR3-OR3: BYPASS STATUS - (option)
SAT IO AO5: 0-10V OUTPUT (airflow / pressure) - (option)
SAT IO AO6: 0-10V OUTPUT (airflow / pressure) - (option)
SAT IO IN5: MASTER SELECTION - (option)
SAT IO IN6: HEAT OFF - (option)
SAT IO IN7: SUPPLY RUN IN FIRE ALARM (open) (option)
SAT IO IN8: EXHAUST RUN IN FIRE ALARM (open) - (option)

SAT COM - SAT MODBUS or SAT KNX or SAT SAT WIFI-ETHERNET or
SAT WIFI-ETHERNET-MQTT - (option)

SAT RELAY
FOR GLOBAL LP, THEN PREMOUNTED AND PREWIRED
SAT RELAY OR1 - LINEAR ACTUATOR FOR BYPASS - FORWARD (closed) (prewired)
SAT RELAY OR2 - LINEAR ACTUATOR FOR BYPASS - BACKWARD (closed) (prewired)
FOR ALL OTHER MODELS
SAT RELAY OR1 : Enable Heat Pump - (option)
SAT RELAY OR2 : Heat/Cool selection for Heat Pump/Chiller - (option)
relais SPDT (COM + NC/NO) – max 0,5A 30V AC/DC
In absence of a heat pump, these outputs can be configured as alternative for
a function assigned by default to DO7...DO11.

Changes			Name	Date		Page
Name	Date	Draw.:	msg	17/10/2024		5
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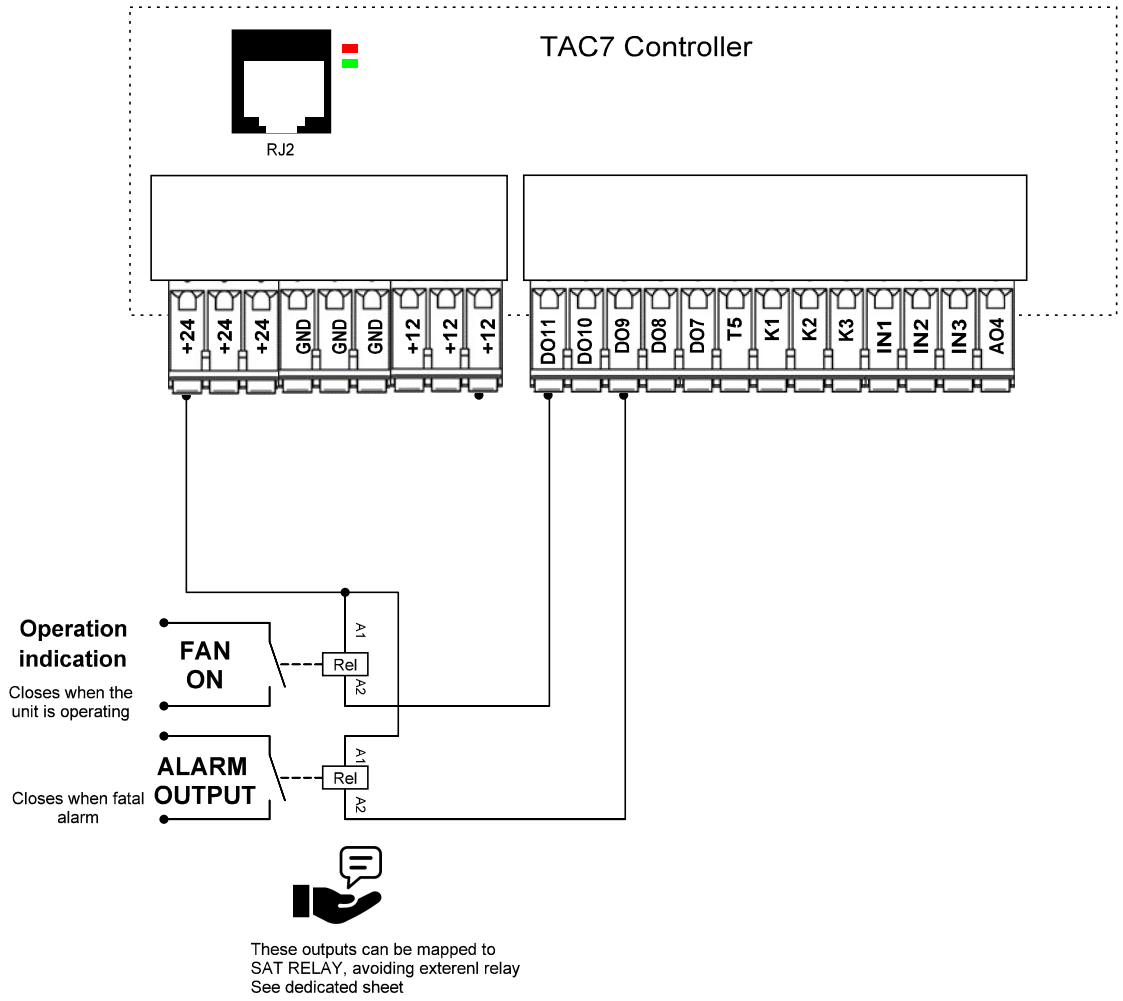
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Product Label	



Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	msg	27/11/2024	Function Alarms	6
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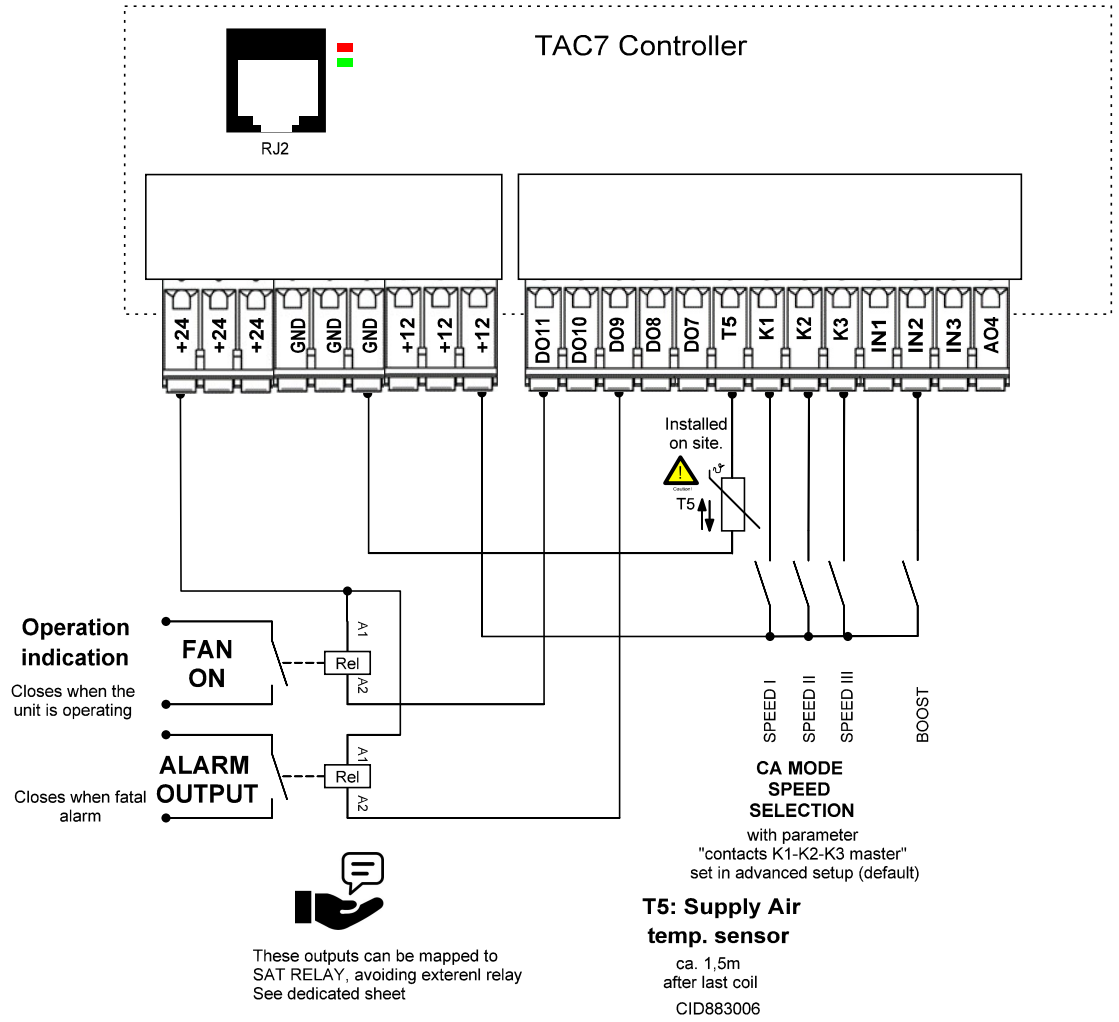
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				ALARM OUTPUT	



Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Regulation mode/ Constant Airflow	7
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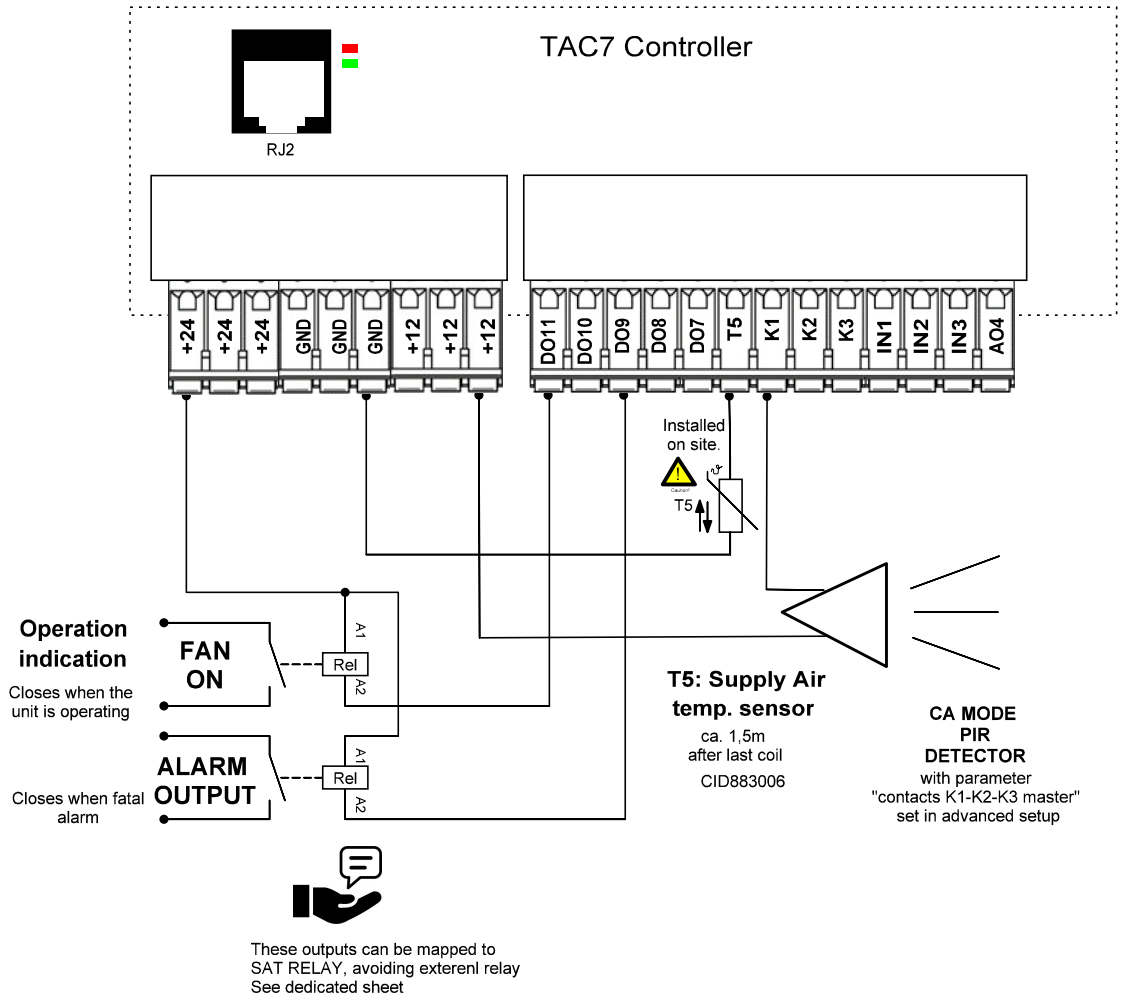
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Constant airflow	66



Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Regulation mode/ Constant Airflow	8
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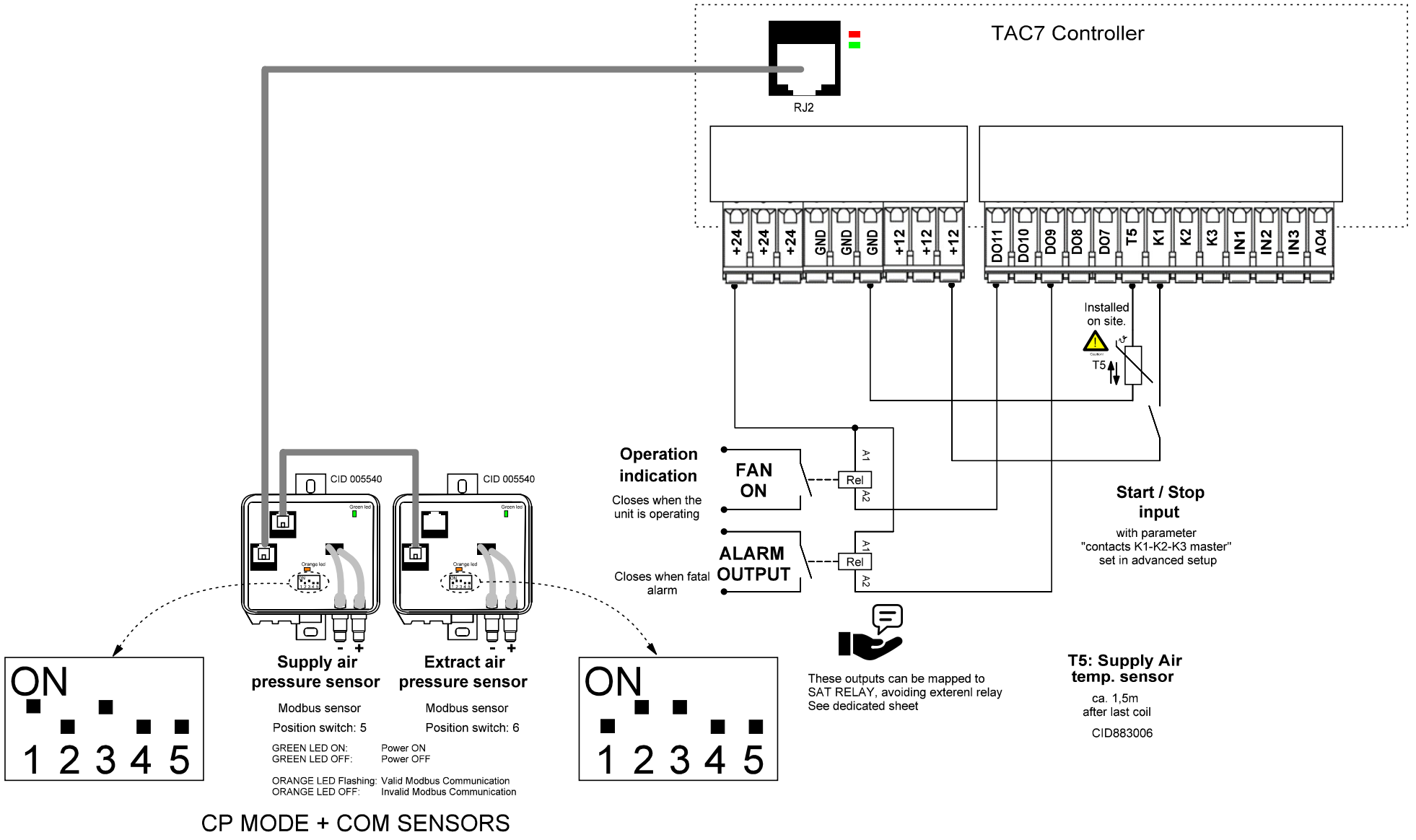
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Constant airflow - PIR	



CP MODE + COM SENSORS

Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Constant Pressure

Application:
Constant pressure Modbus

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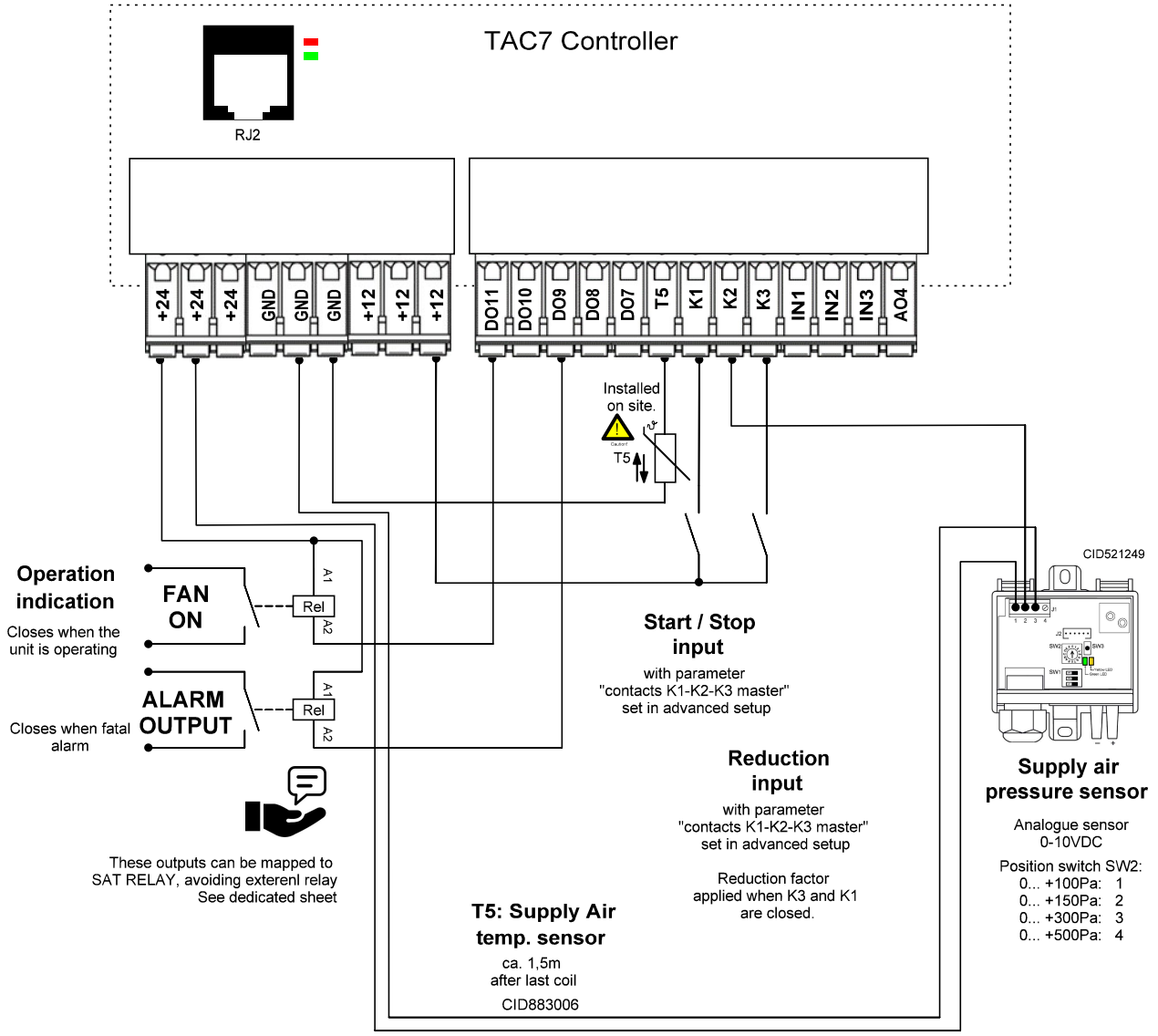

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		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Constant Pressure

Application:
Constant pressure 1x 0-10V

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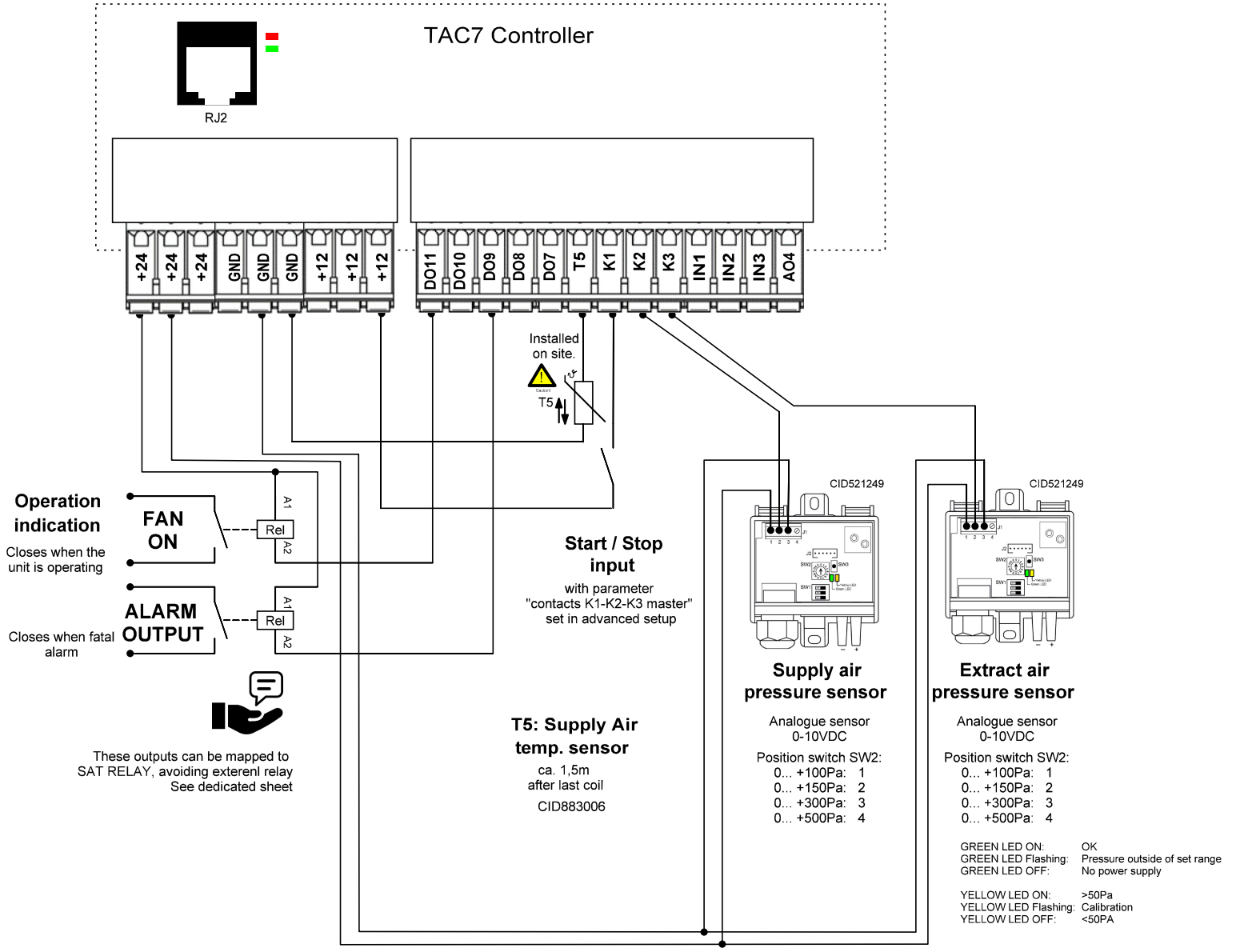

Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Constant Pressure

Application:
Constant pressure 2x 0-10V

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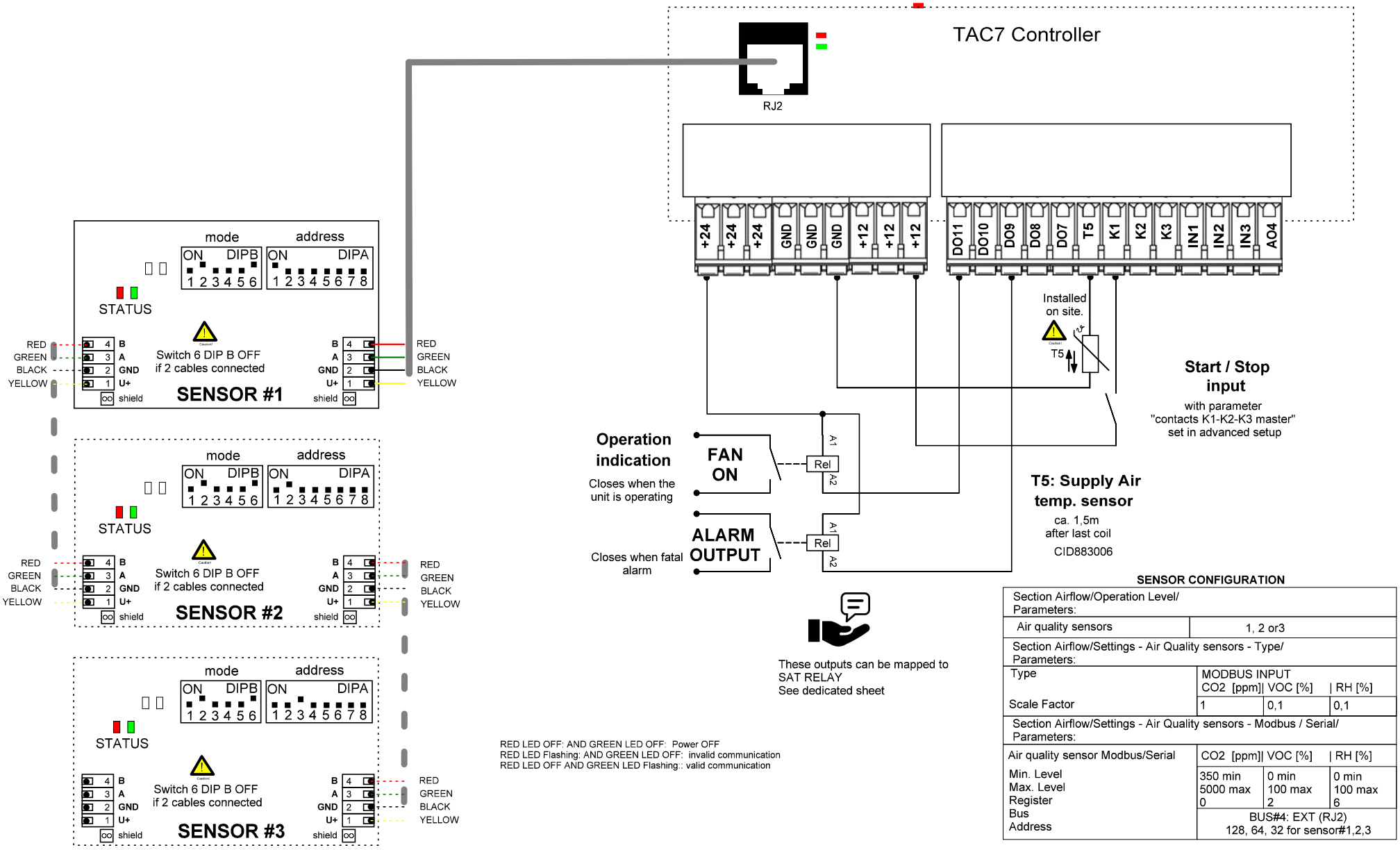

SENSOR CONFIGURATION

Section Airflow/Operation Level/ Parameters:			
Air quality sensors	1, 2 or3		
Section Airflow/Settings - Air Quality sensors - Type/ Parameters:			
Type	MODBUS INPUT CO2 [ppm]	VOC [%]	RH [%]
Scale Factor	1	0,1	0,1
Section Airflow/Settings - Air Quality sensors - Modbus / Serial/ Parameters:			
Air quality sensor Modbus/Serial	CO2 [ppm]	VOC [%]	RH [%]
Min. Level Max. Level Register Bus Address	350 min 5000 max 0	0 min 100 max 2	0 min 100 max 6
	BUS#4: EXT (RJ2) 128, 64, 32 for sensor#1,2,3		

Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Demand control

Application:
Demand control IAQ Modbus (Indoor Air Quality)

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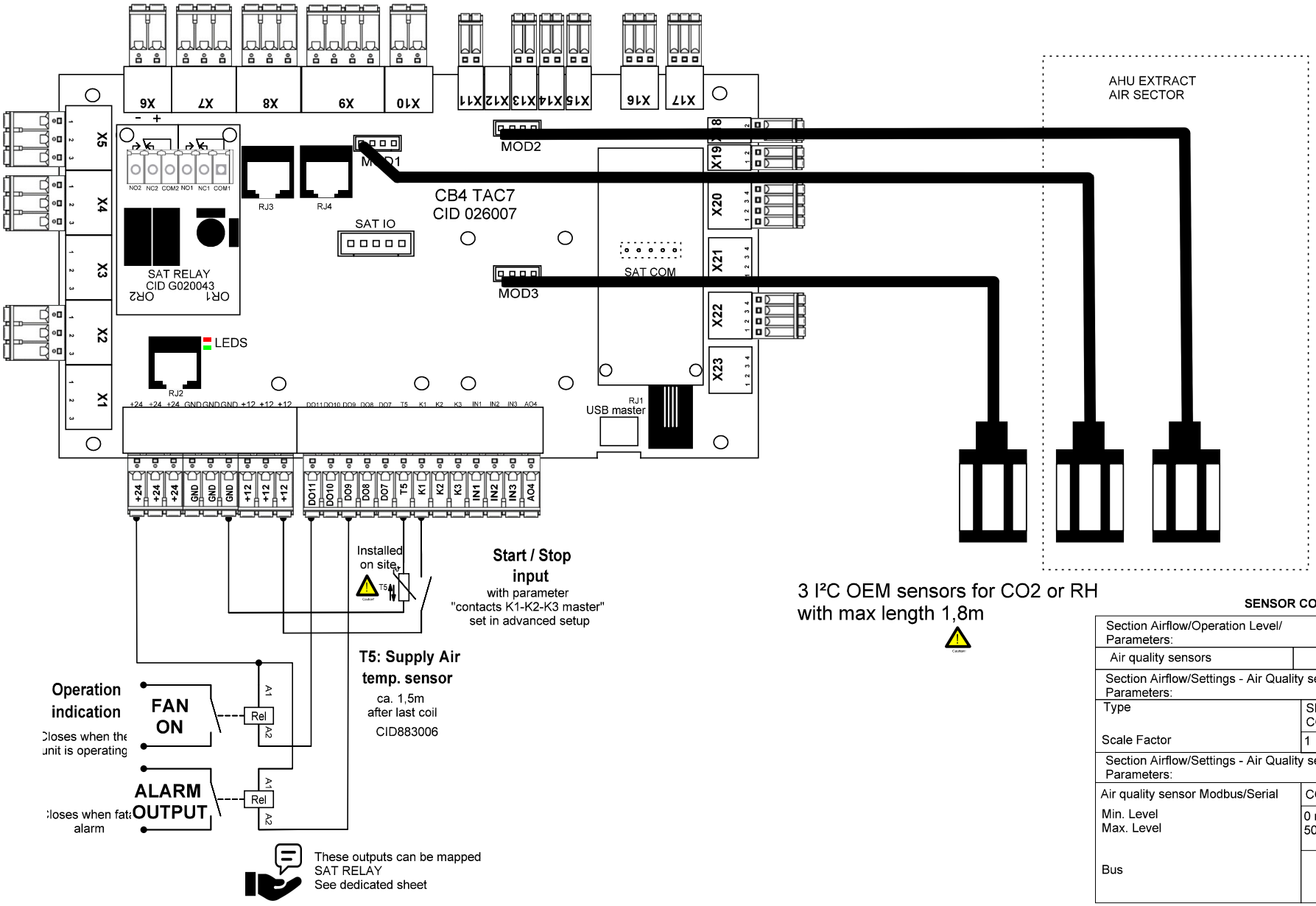

SENSOR CONFIGURATION

Section Airflow/Operation Level/ Parameters:			
Air quality sensors	1, 2 or3		
Section Airflow/Settings - Air Quality sensors - Type/ Parameters:			
Type	SERIAL CO2/Humidity CO2 [ppm]		| RH [%]
Scale Factor	1		1
Section Airflow/Settings - Air Quality sensors - Modbus / Serial/ Parameters:			
Air quality sensor Modbus/Serial	CO2 [ppm]		| RH [%]
Min. Level Max. Level	0 min 5000 max		0 min 95 max
Bus	BUS#1 I2C1 (MOD1)/ BUS#2 I2C2 (MOD2)/ BUS#3 I2C3 (MOD3)		

Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Demand control

Application:
Demand control Serial COM (Indoor Air Quality)

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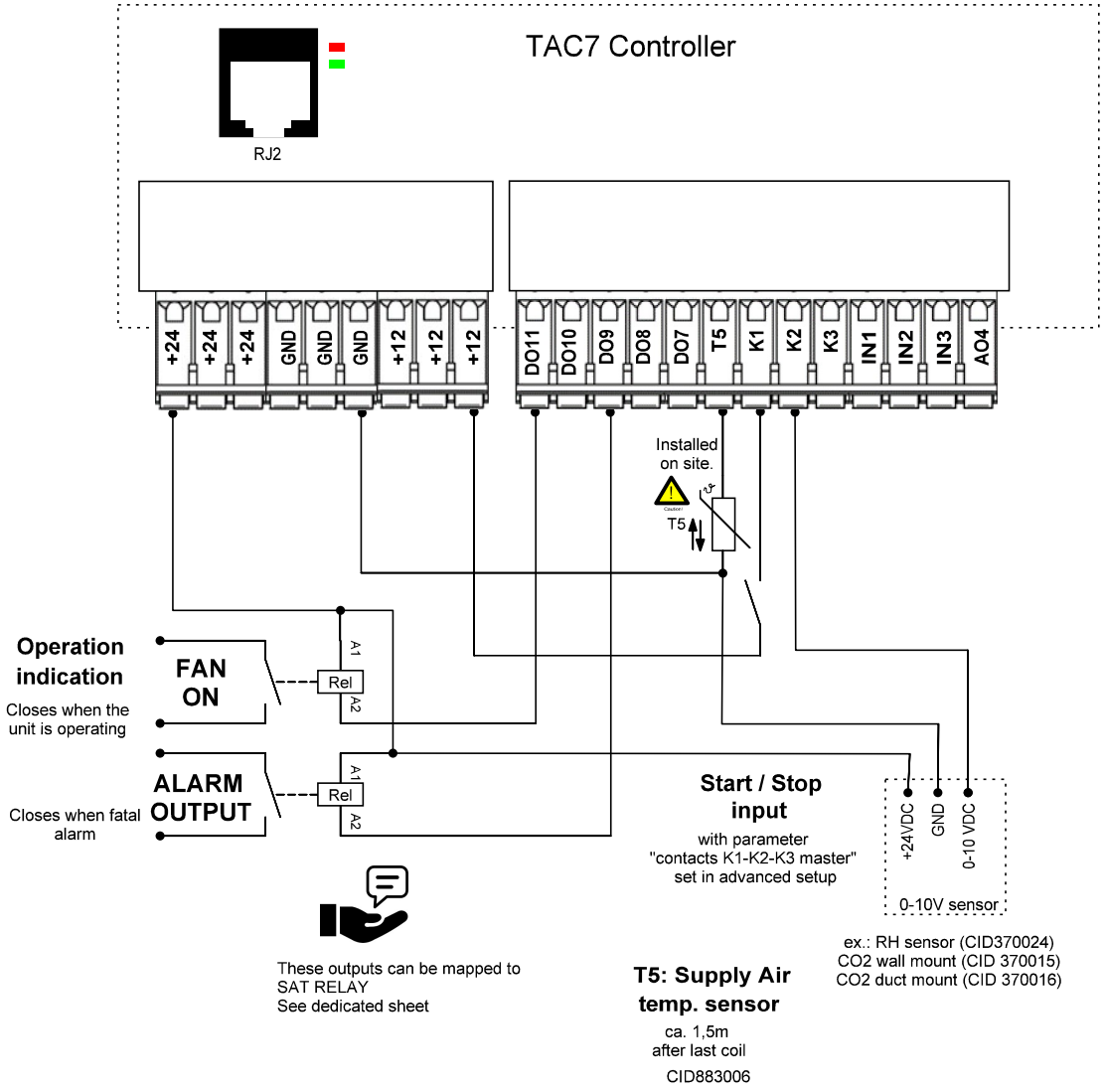
1	2	3	4	5	6	7	8	9	10	11	12	13	14

SENSOR CONFIGURATION

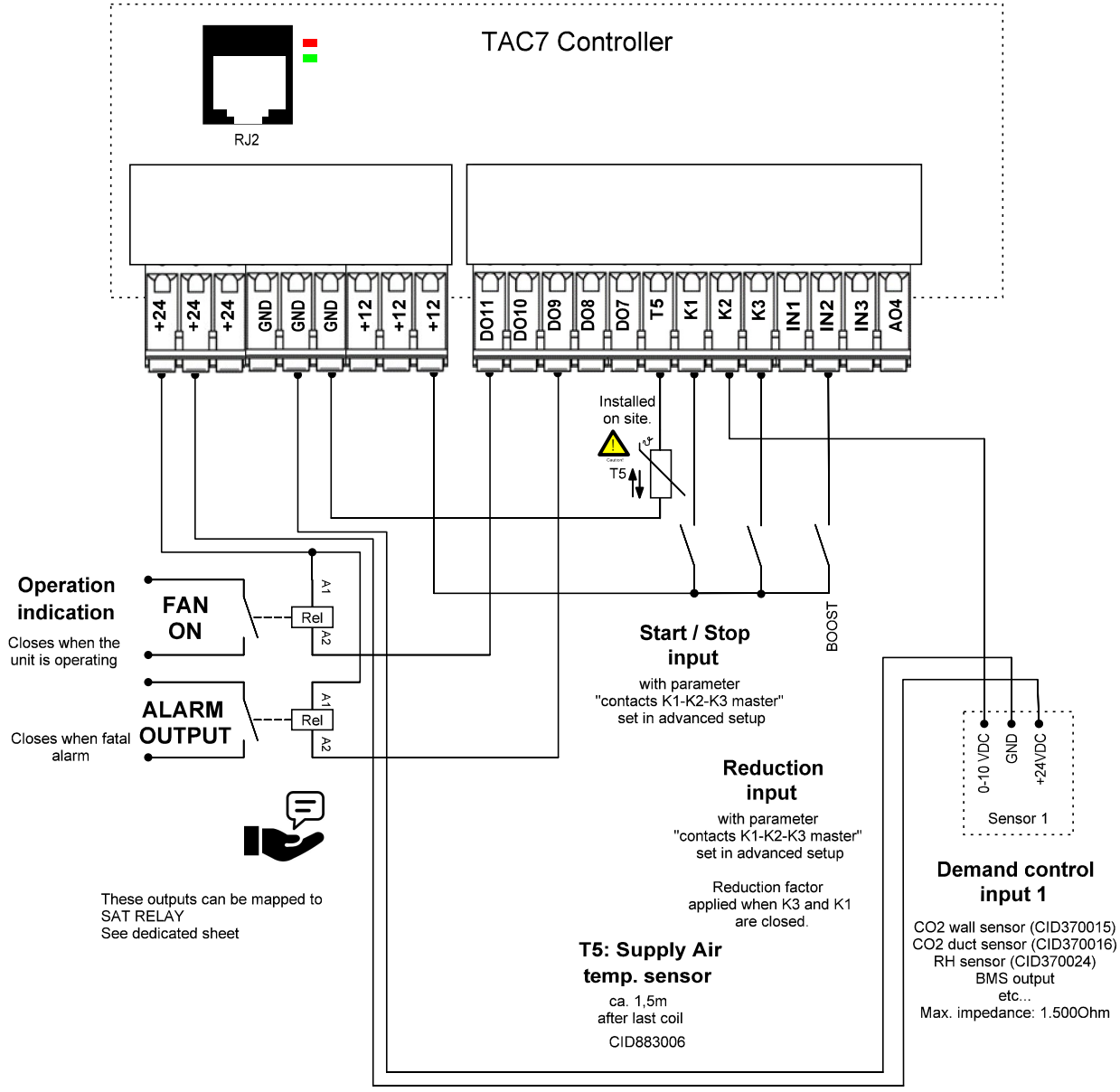
Section Airflow/Operation Level/ Parameters:			
Air quality sensors	1, 2 or3		
Section Airflow/Settings - Air Quality sensors - Type/ Parameters:			
Type	Analogue 0-10V CO2 [ppm]]		| RH [%]
Scale Factor	20		1
Section Airflow/Settings - Air Quality sensors -Analogue/ Parameters:			
I/O Vmin Vmax	K2 or K3 if K2 not free and K3 well 0 V 10 V		
Mininum level Maximum level	0 2000		0 100



Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Demand control

Application:
Demand control IAQ Analogue (Indoor Air Quality)



Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Demand control

Application:
Demand control 1x 0-10V

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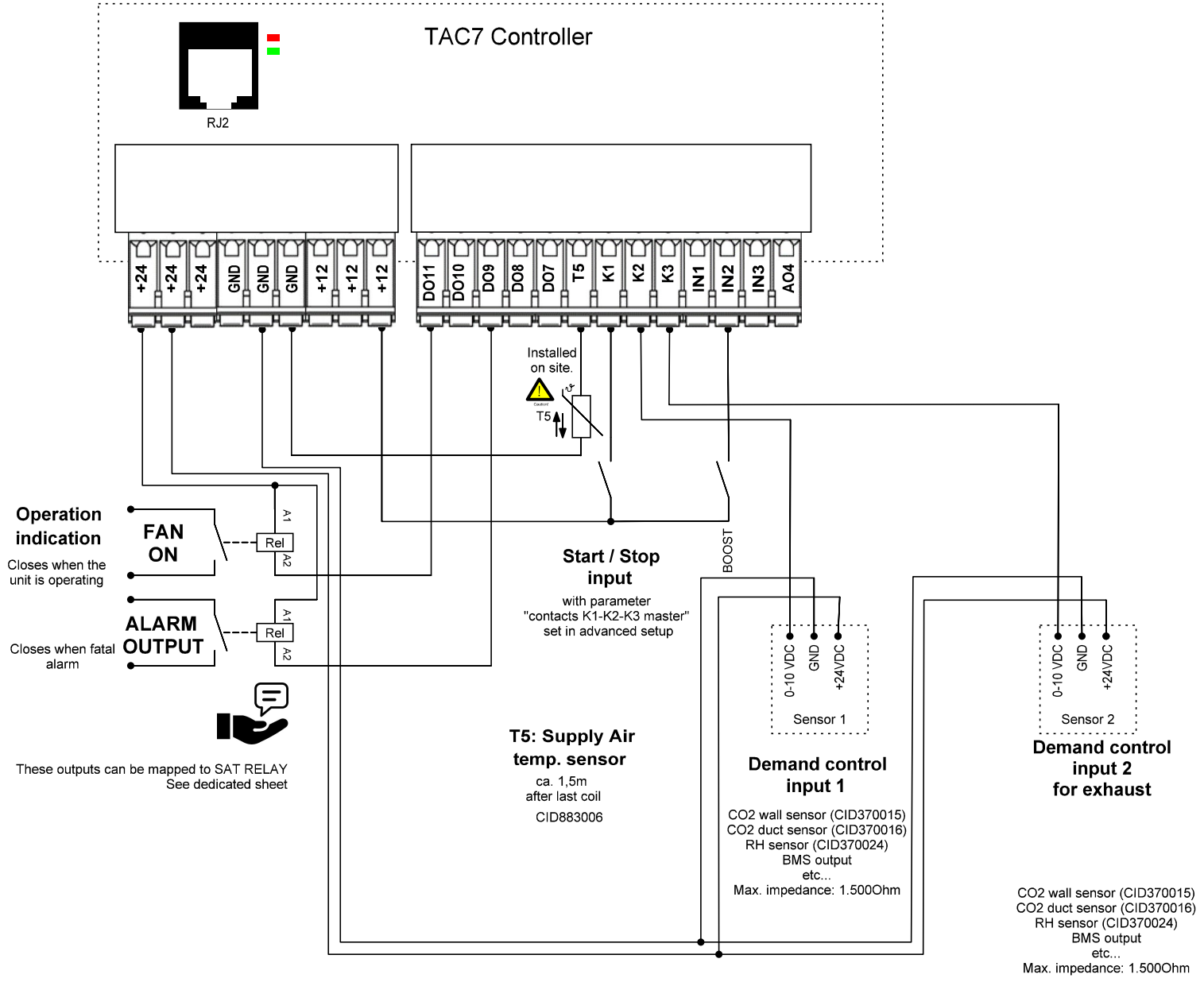

Changes			Name	Date
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		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Regulation mode/ Demand control

Application:
Demand control 2x 0-10V

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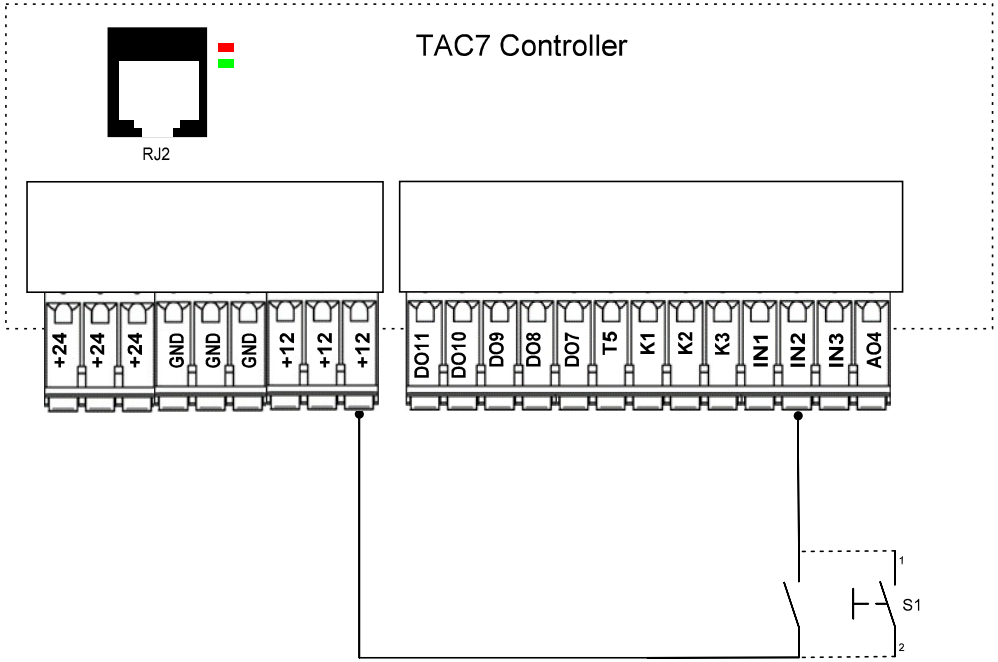


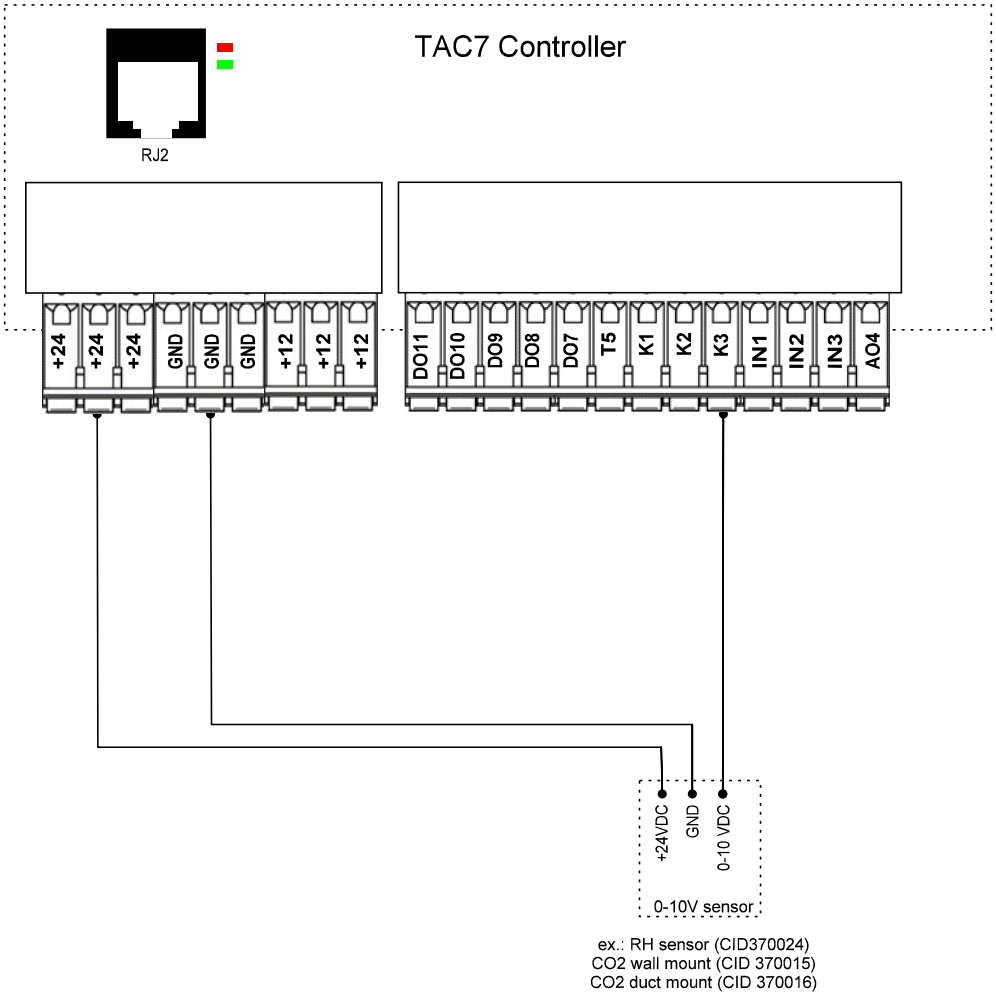
In case a push button is used instead of a switch,
then configure parameter "BOOST duration"
in Function Air flow/BOOST with a delay in minutes.

Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Air flow/BOOST	17
		check.:				
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				BOOST with contact	

1	2	3	4	5	6	7	8	9	10	11	12	13	14

SENSOR CONFIGURATION

Section Airflow/BOOST/ Parameters:			
Air quality sensors	1 or 2		
Section Airflow/BOOST - Air Quality sensors - Type/ Parameters:			
Type	Analogue 0-10V CO2 [ppm]		| RH [%]
Scale Factor	20		1
Section Airflow/BOOST - Air Quality sensors -Analogue/ Parameters:			
I/O Vmin Vmax	K2 or K3 0 V 10 V		
	CO2 [ppm]		| RH [%]
Low level BOOST off High level BOOST on	100 min 1900 max		5 min 95 max



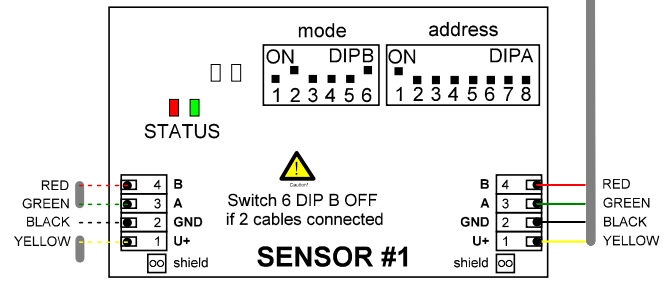
ex.: RH sensor (CID370024)
CO2 wall mount (CID 370015)
CO2 duct mount (CID 370016)

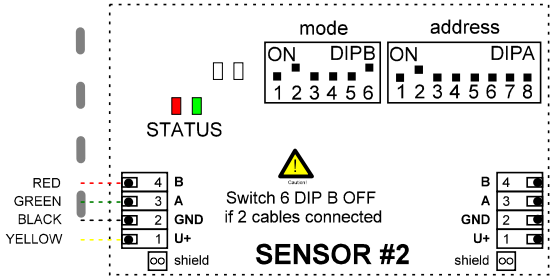
Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Air flow/BOOST	18
		check.:				
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				BOOST with 0-10V sensor	

1	2	3	4	5	6	7	8	9	10	11	12	13	14

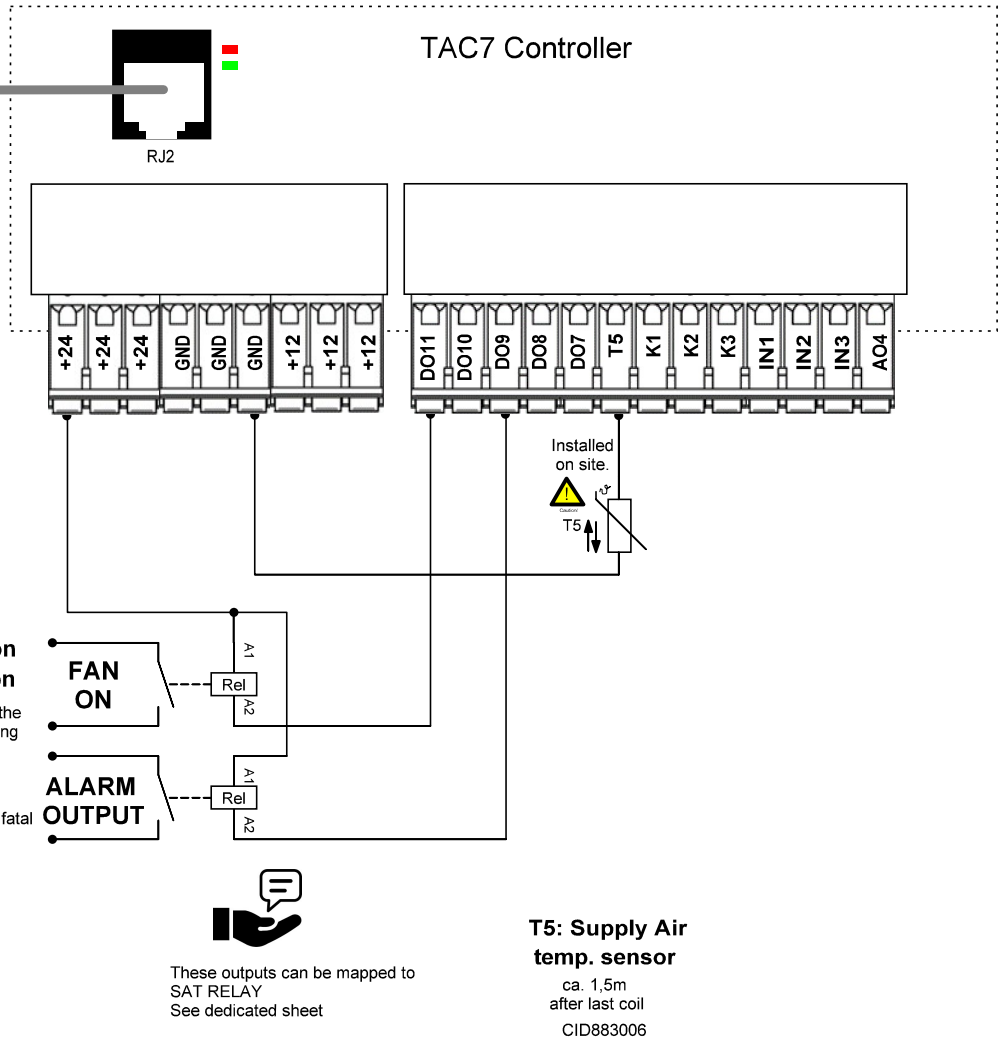
SENSOR CONFIGURATION

Section Airflow/BOOST/ Parameters:			
Air quality sensors	1 or2		
Section Airflow/BOOST - Air Quality sensors - Type/ Parameters:			
Air quality sensor Type	MODBUS INPUT CO2 [ppm]| VOC [%]		| RH [%]
Scale Factor Low level BOOST off High level BOOST on	1 350 min 5000 max	0,1 0 min 100 max	0,1 0 min 100 max
Section Airflow/BOOST - Air Quality sensors - Modbus / Serial/ Parameters:			
Air quality sensor Modbus/Serial	CO2 [ppm]| VOC [%]		| RH [%]
Register Bus Address	0	2	6
	BUS#4: EXT (RJ2) 128, 64 for sensor#1,2		

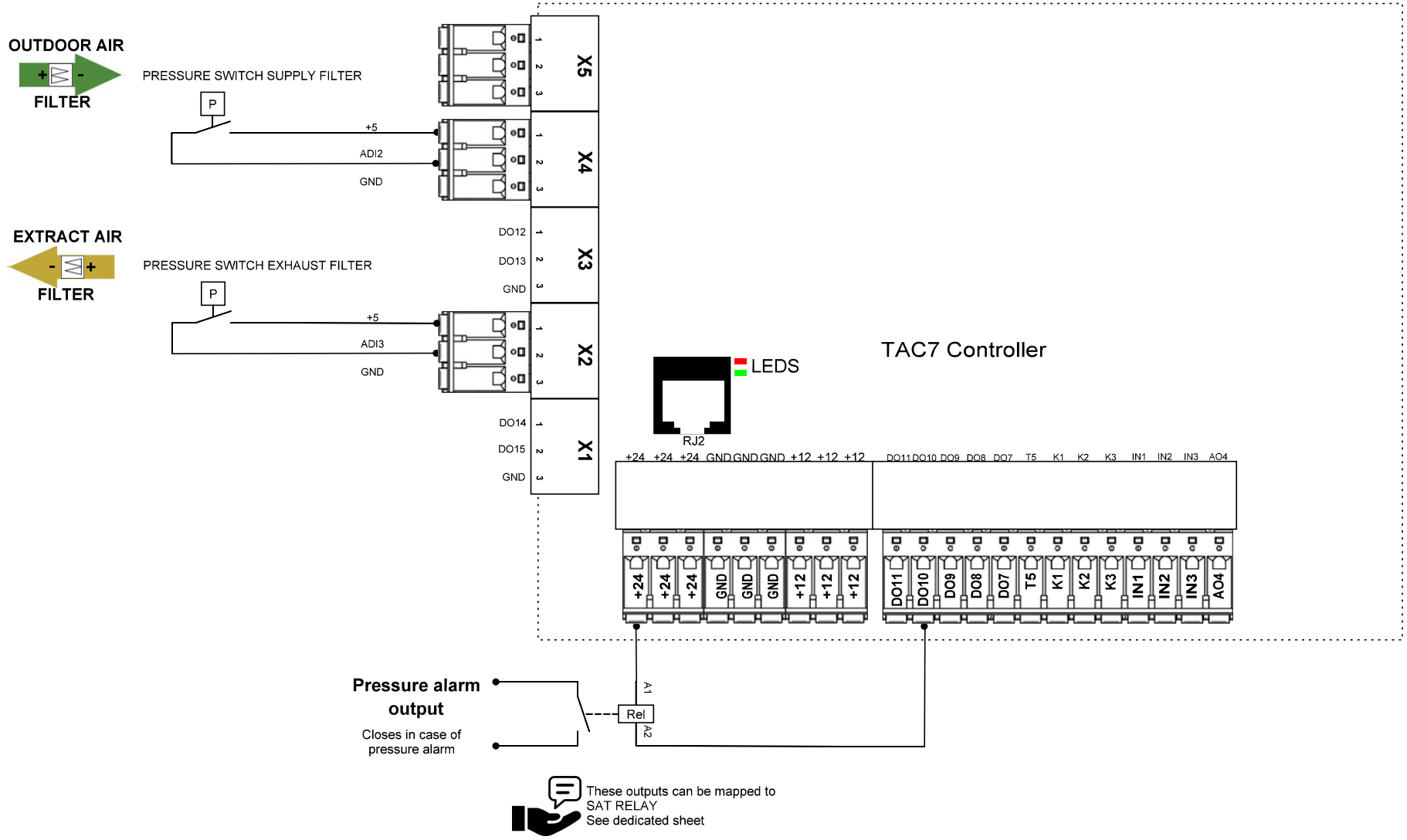




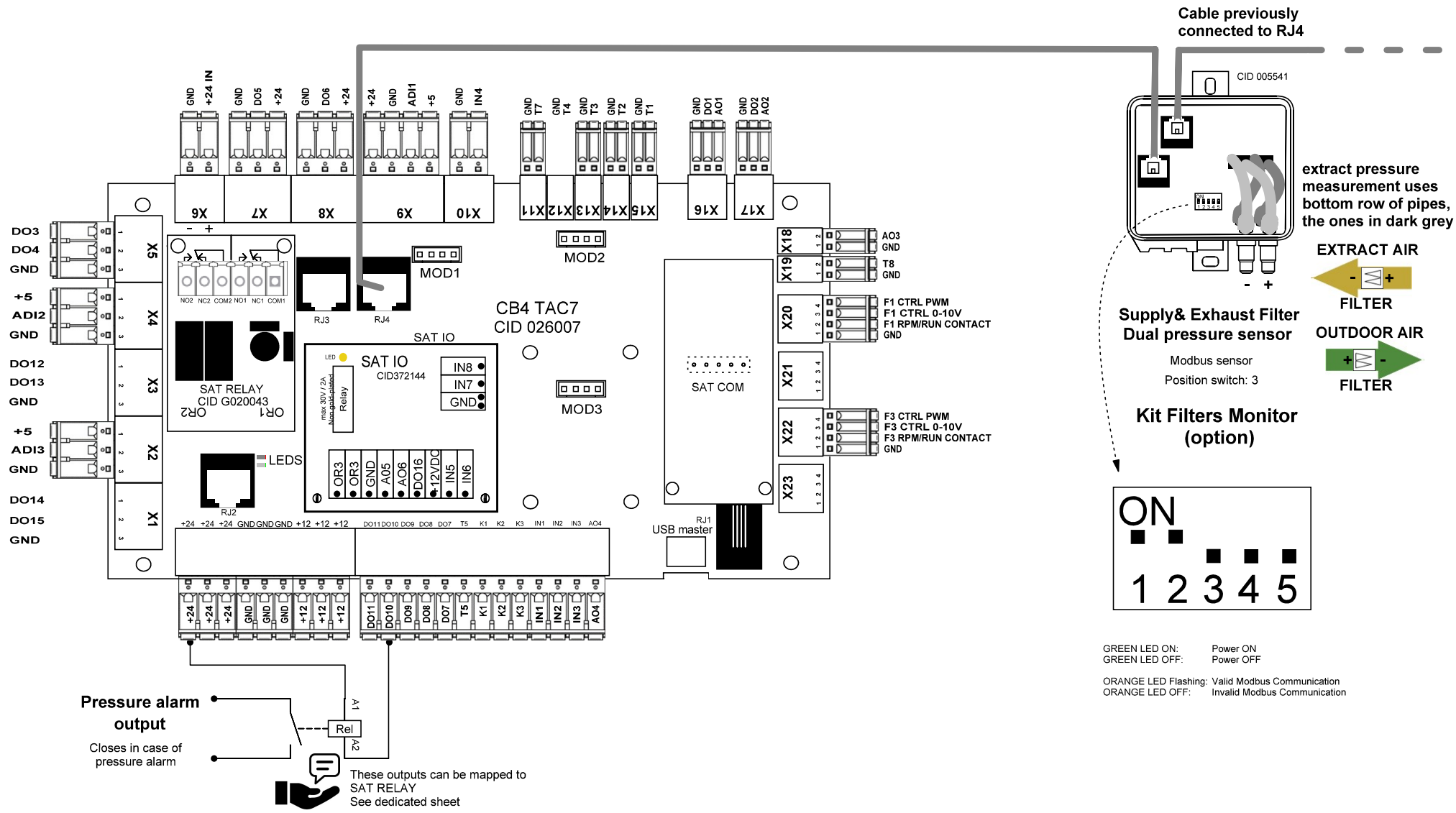
RED LED OFF: AND GREEN LED OFF: Power OFF
RED LED Flashing: AND GREEN LED OFF: invalid communication
RED LED OFF AND GREEN LED Flashing:: valid communication



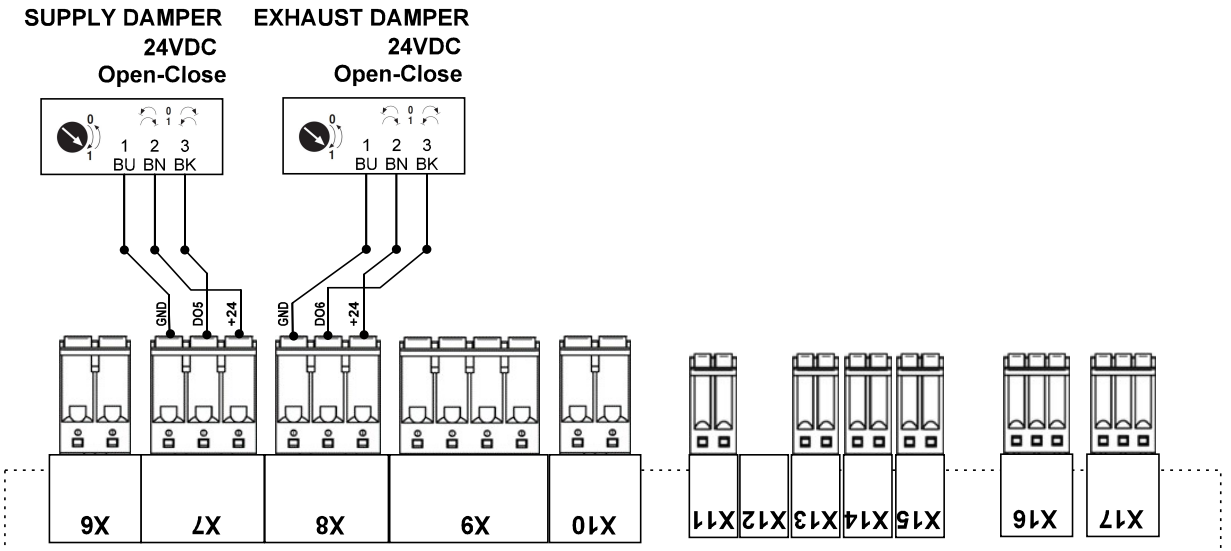
Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Air flow/BOOST	19
		check.:				
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				BOOST with IAQ sensors (Indoor Air Quality)	66



Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024		20
		check.:				
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Filters alarm - Pa switch	



Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Filters/Pressure alarm/Filters pressure revelation with sensors	21
		check.:				
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Filters alarm & monitor	66

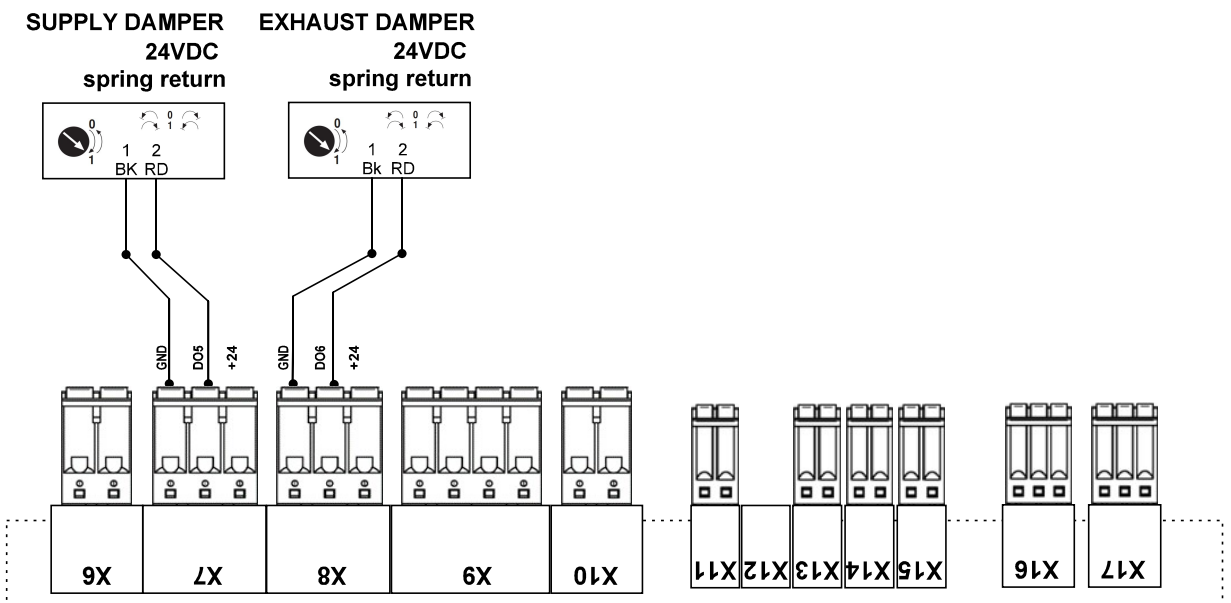


CB4 TAC7

CID 026007

Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Air Handling Unit/Dampers	22
msg	07/04/2023	check.:				
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Motorised damper - standard	

1	2	3	4	5	6	7	8	9	10	11	12	13	14

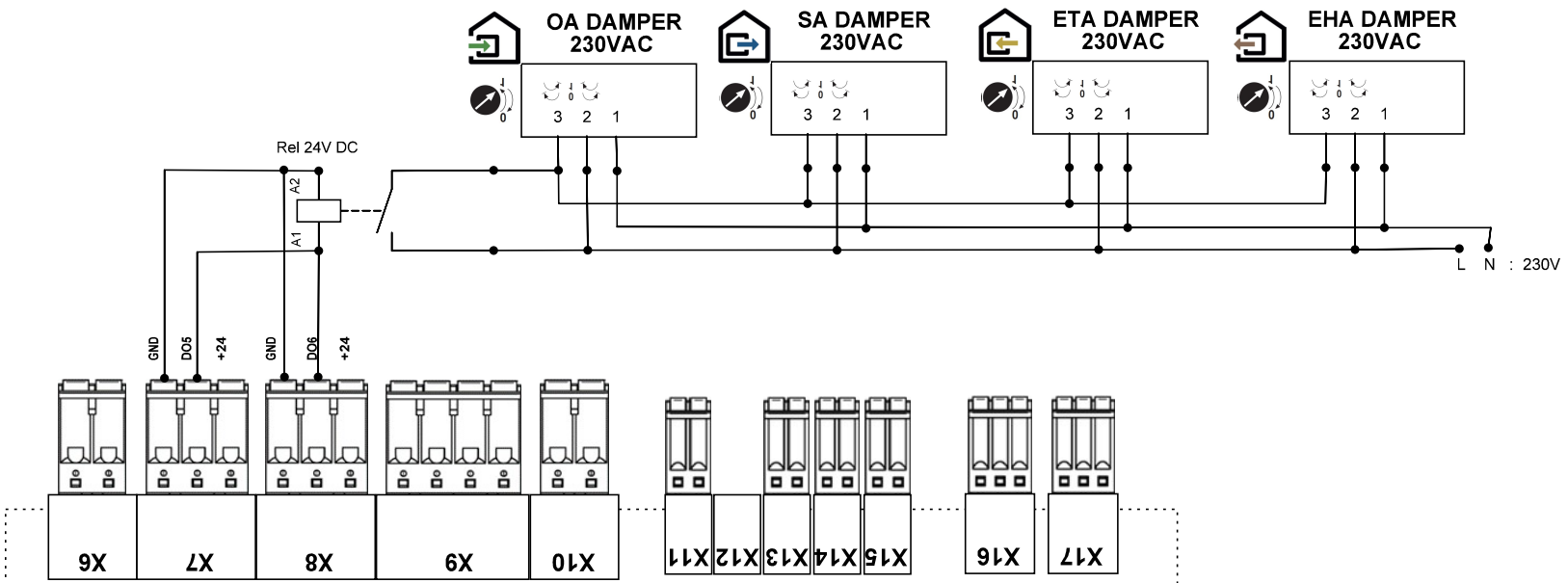


CB4 TAC7

CID 026007

Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	27/09/2024	Function Air Handling Unit/Dampers	23
		check.:				
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Motorised damper - spring ret	

1	2	3	4	5	6	7	8	9	10	11	12	13	14



CB4 TAC7

CID 026007

Changes			Name	Date
Name	Date	Draw.:	ola	27/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Air Handling Unit/Dampers
dampers move simultaneously in same direction (they all close or all open)

Application:
Motorised damper - 230 V AC

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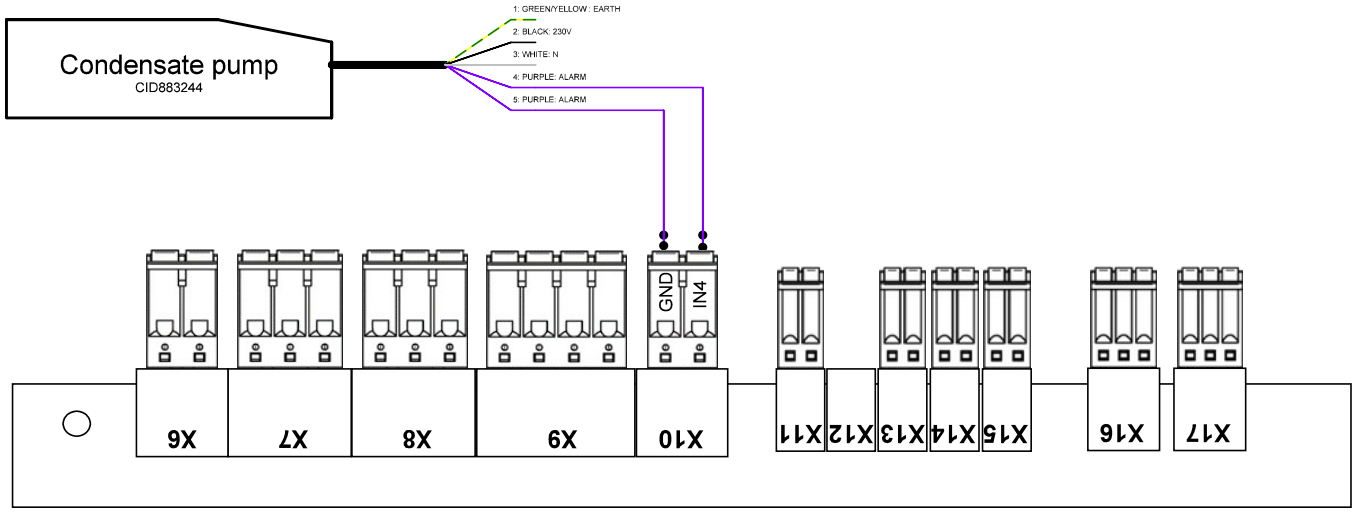
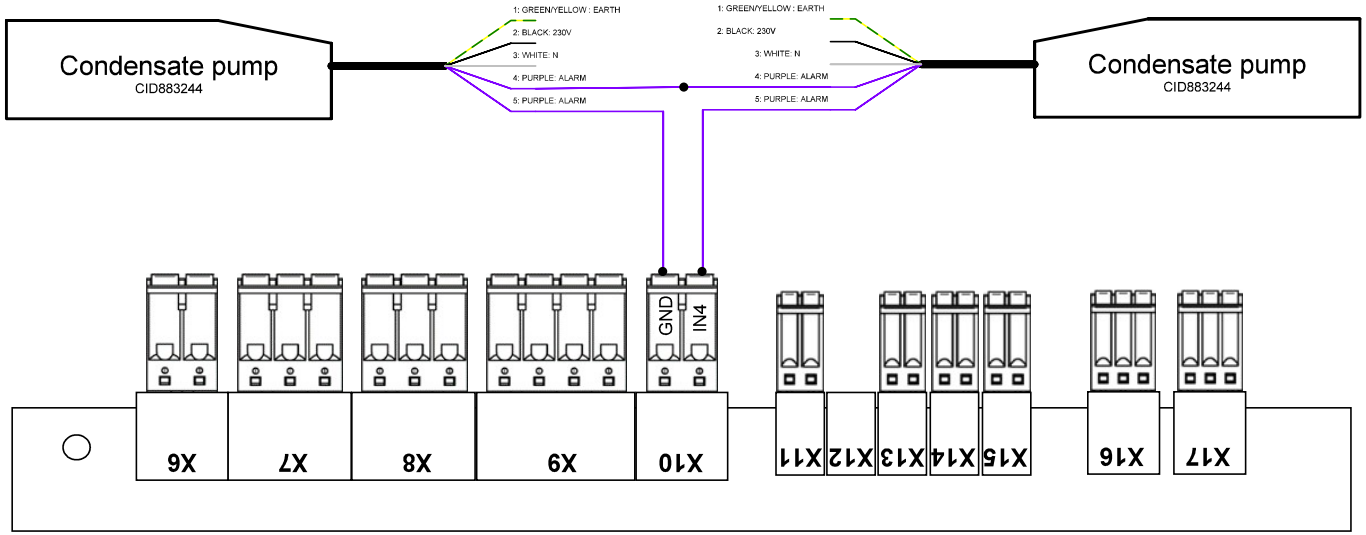
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1 device with drain pump (GLOBAL LP or postcooling coil)

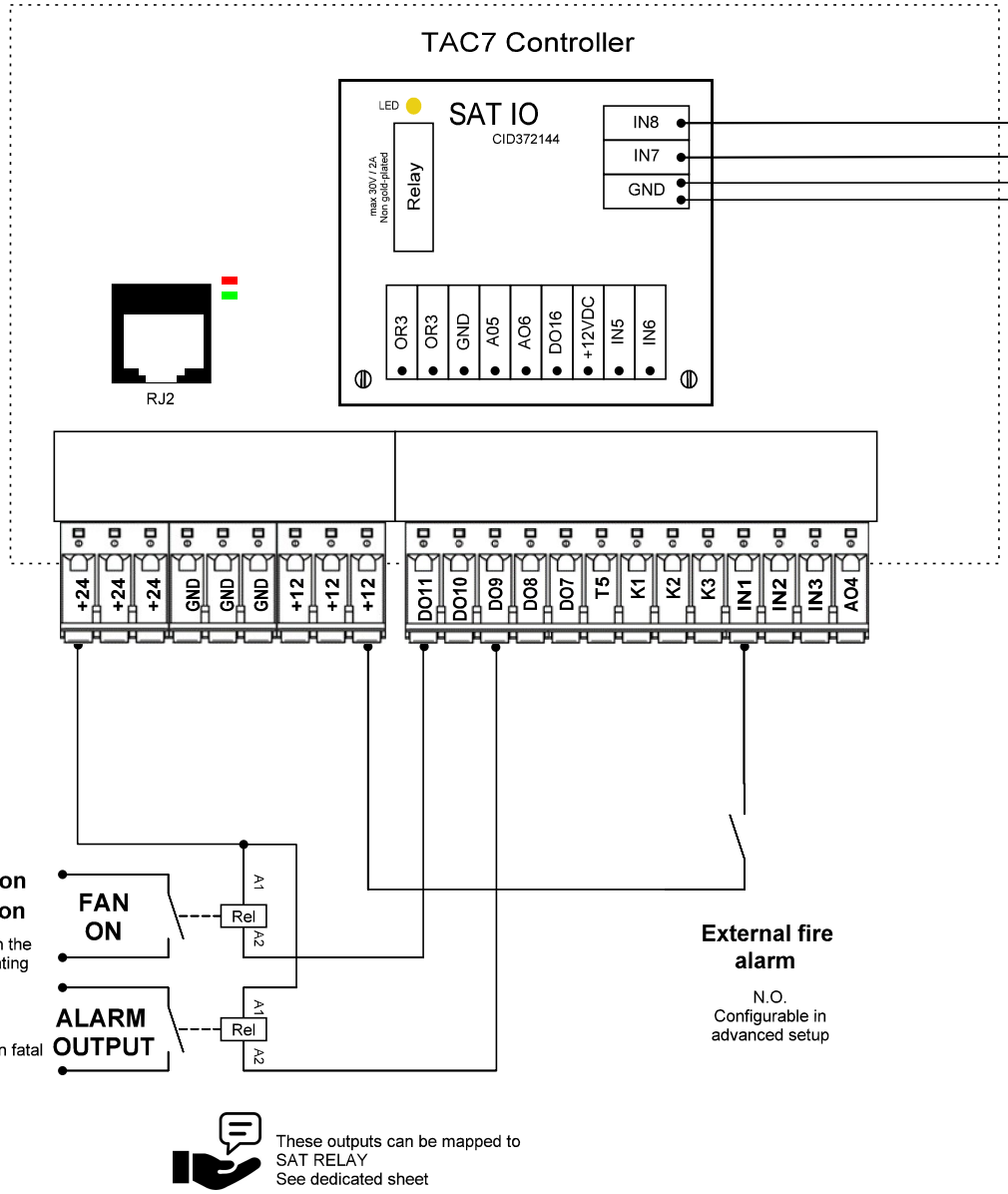


The condensate pump contains an internal sensor that will automatically start the pump when the water level rises above approx. 15 mm and stop the pump when the water level has fallen to approx. 5 mm. The condensate pump is also fitted with a high water level alarm that will operate the alarm relay if the water level rises above approx. 25 mm. The pump will continue to run until the minimum water level is reached and the alarm will reset.

2 devices with drain pump (GLOBAL LP and postcooling coil)



Changes			Name	Date		Page
Name	Date	Draw.:	ola	27/09/2024		25
		check.:				
		Norm:			Application: Condense pump	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					



Changes			Name	Date
Name	Date	Draw.:	ola	30/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Alarm Settings

Application:
Fire alarm

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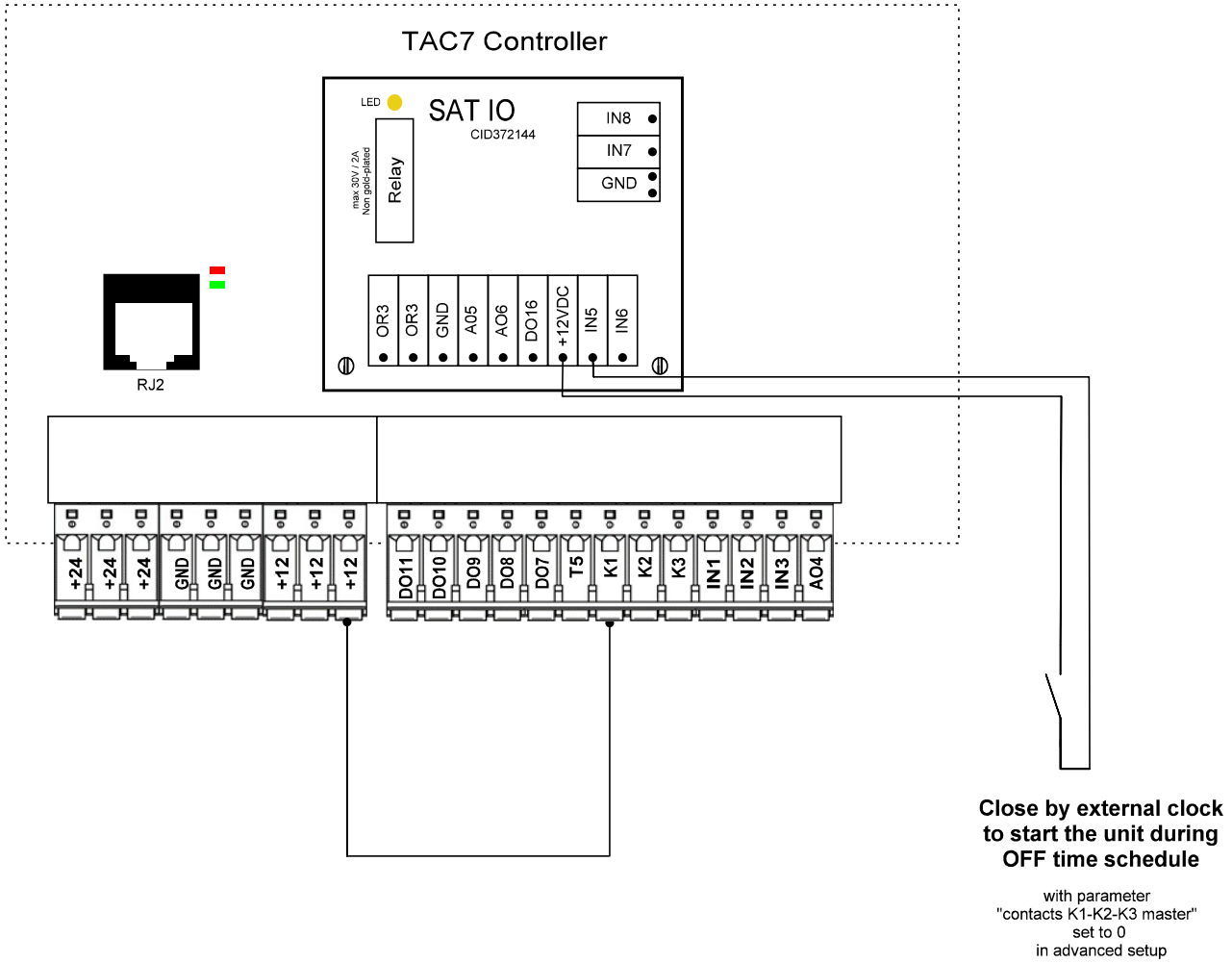

Changes			Name	Date
Name	Date	Draw.:	ola	30/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Timeschedules configured
Control screen of TACtouch: Speed selecion on 'AUTO'

Application:
External Clock

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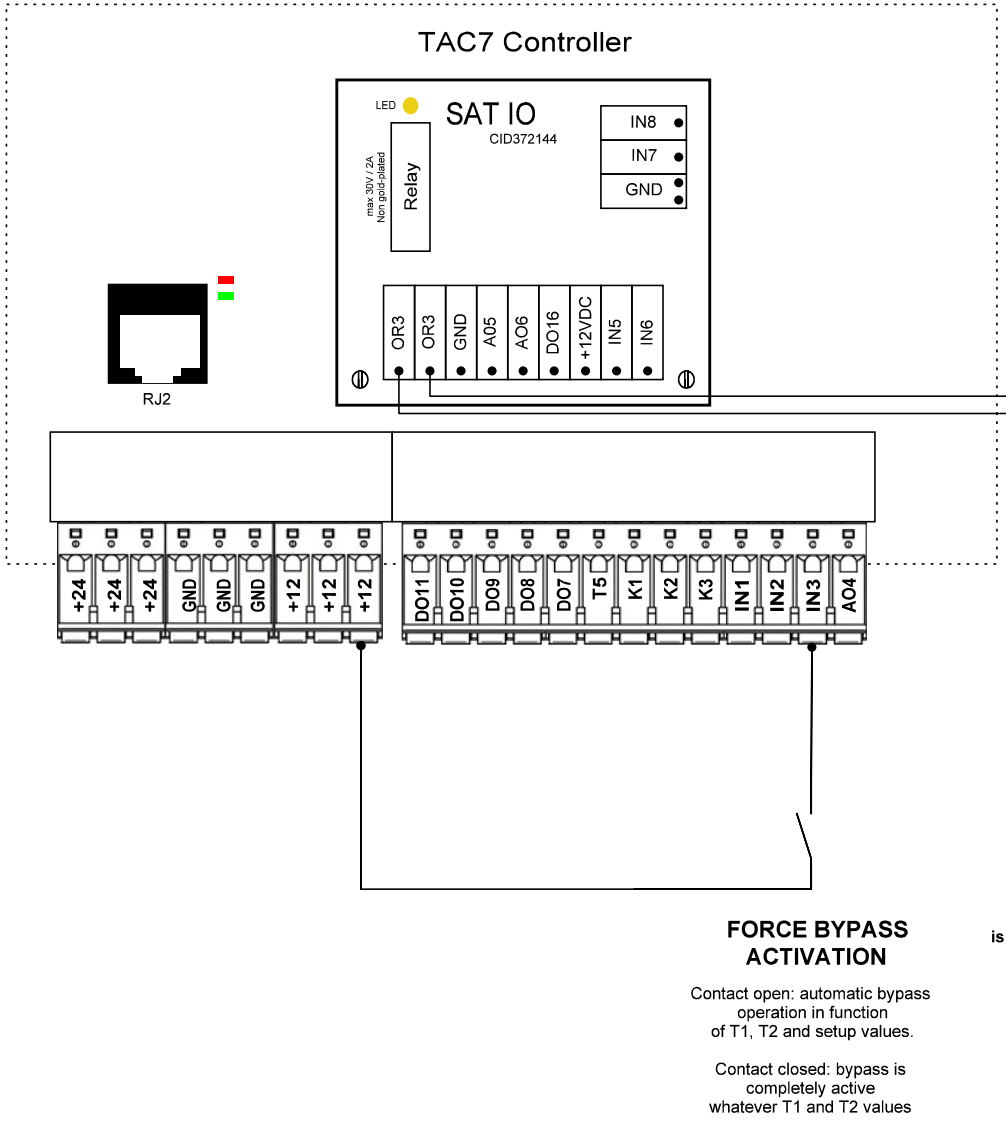

Changes			Name	Date
Name	Date	Draw.:	ola	30/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Temperature/Freecooling

Application:
Bypass

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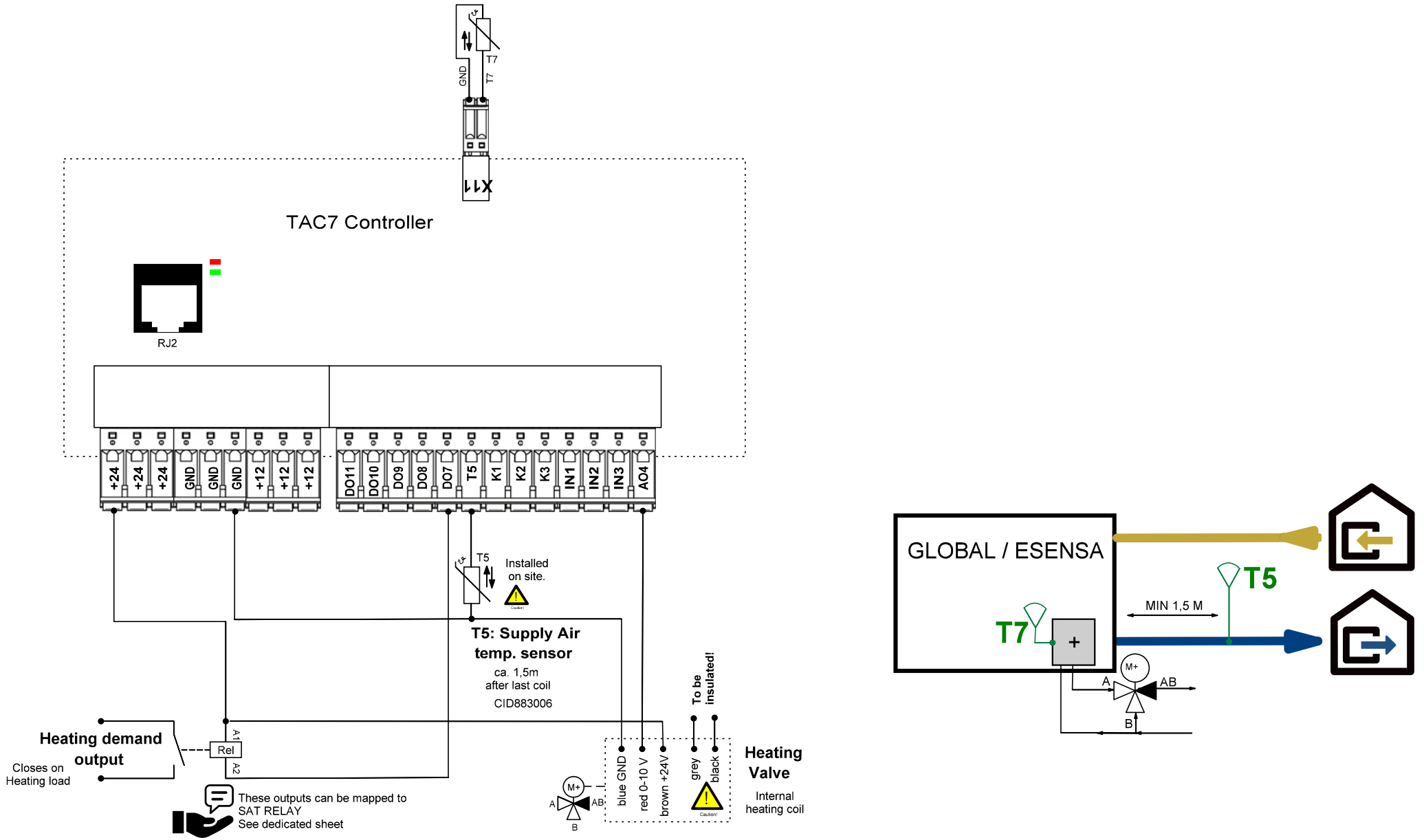
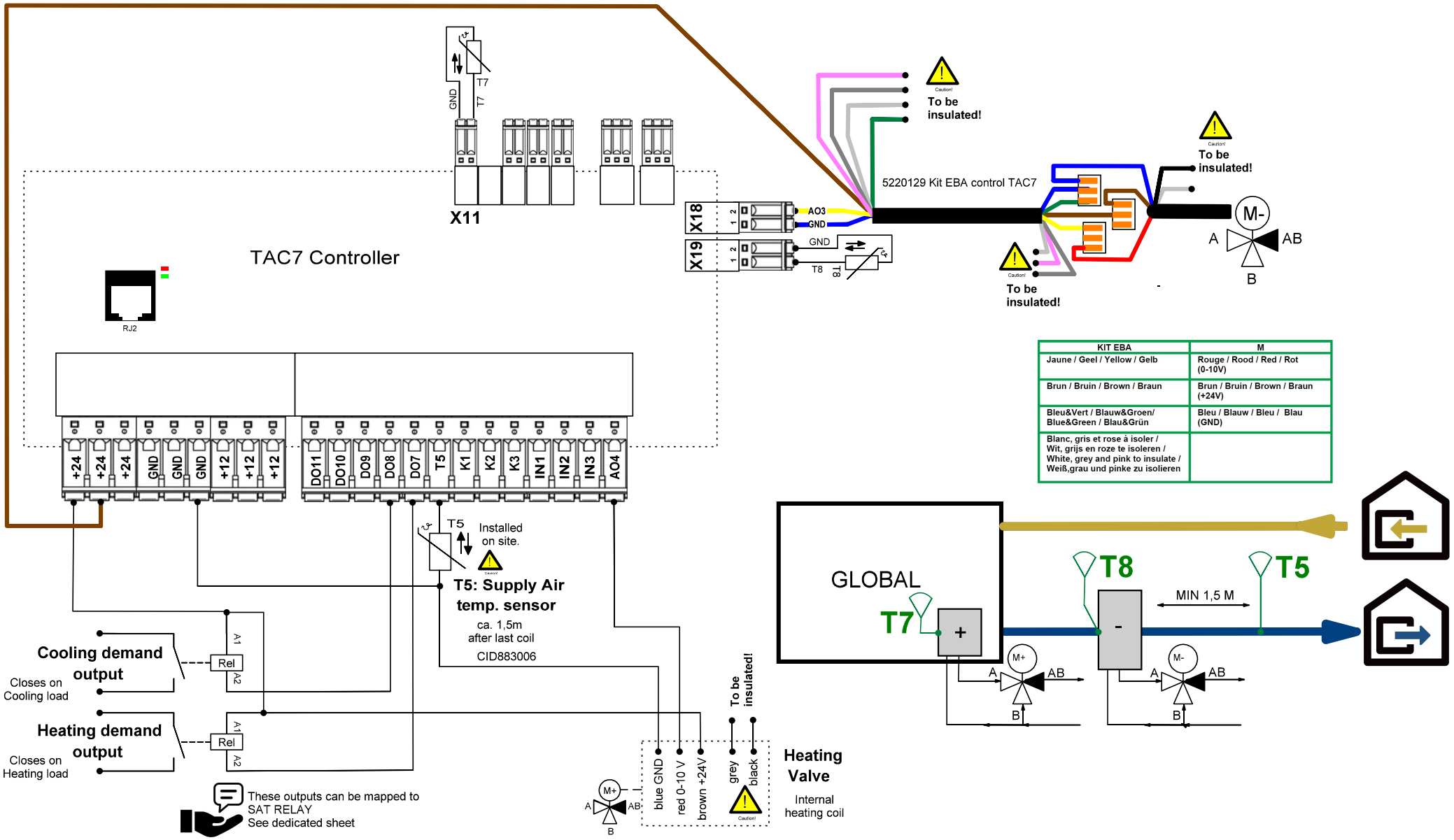


Changes			Name	Date
Name	Date	Draw.:	ola	30/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/
Internal Waterborne Rehater (IBA)

Application:
IBA Internal Waterborne Reheat



Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/Internal Waterborne Rehater (IBA)
& Function Cool/Settings/External Waterborne Recooler (EBA-)

Application:
Int. heating & Ext. cooling

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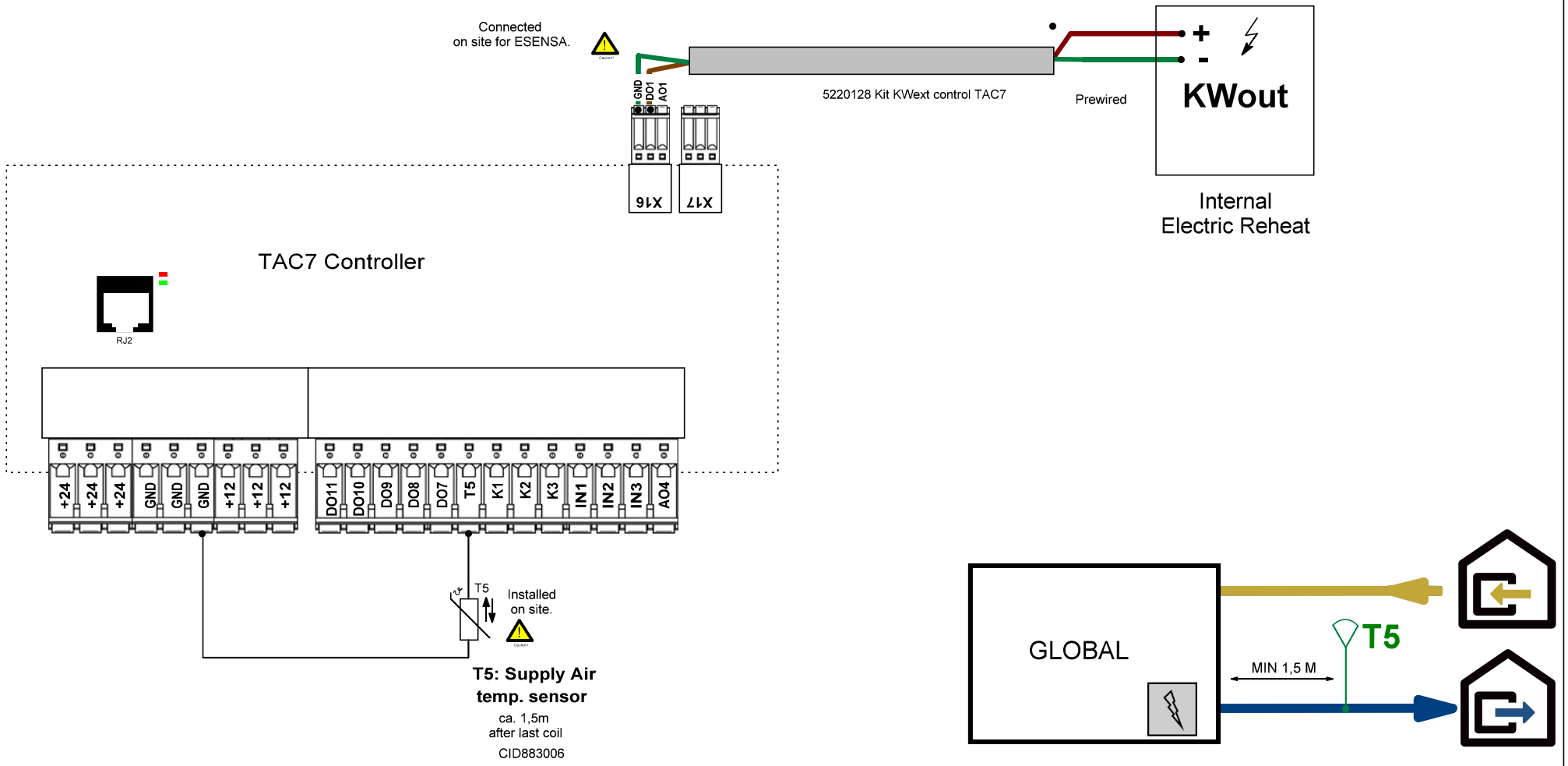

Changes			Name	Date
Name	Date	Draw.:	ola	30/09/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/
Internal Electric Rehater (KWout)

Application:
KWout Internal Electric Reheat

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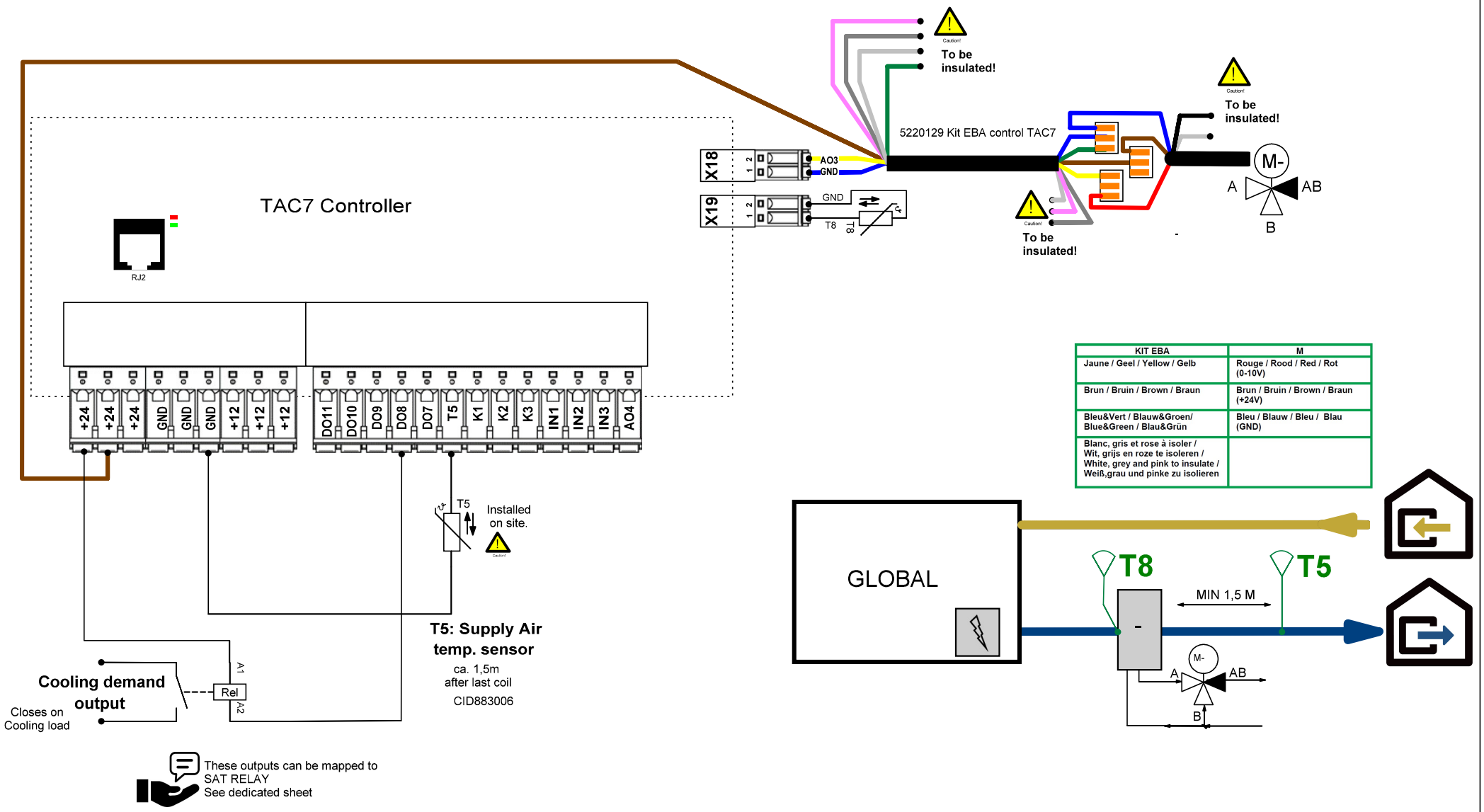

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/Internal Electric Rehater (KWout)
& Function Cool/Settings/External Waterborne Recooler (EBA-)

Application:
Int. elec heating & Ext. cool

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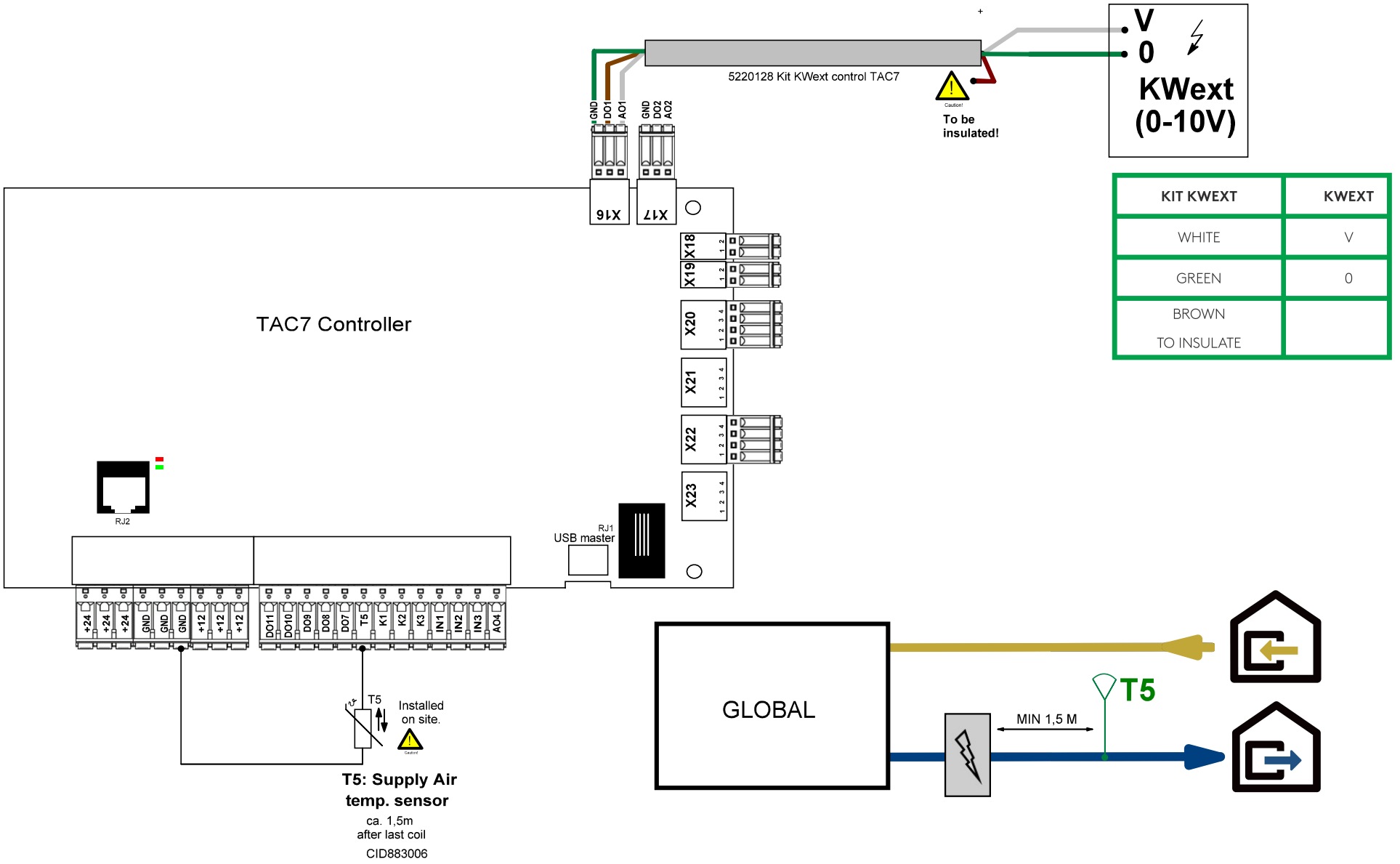

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/
External Electric Rehater (KWext - 0-10V)

Application:
External elec. heating 0-10V

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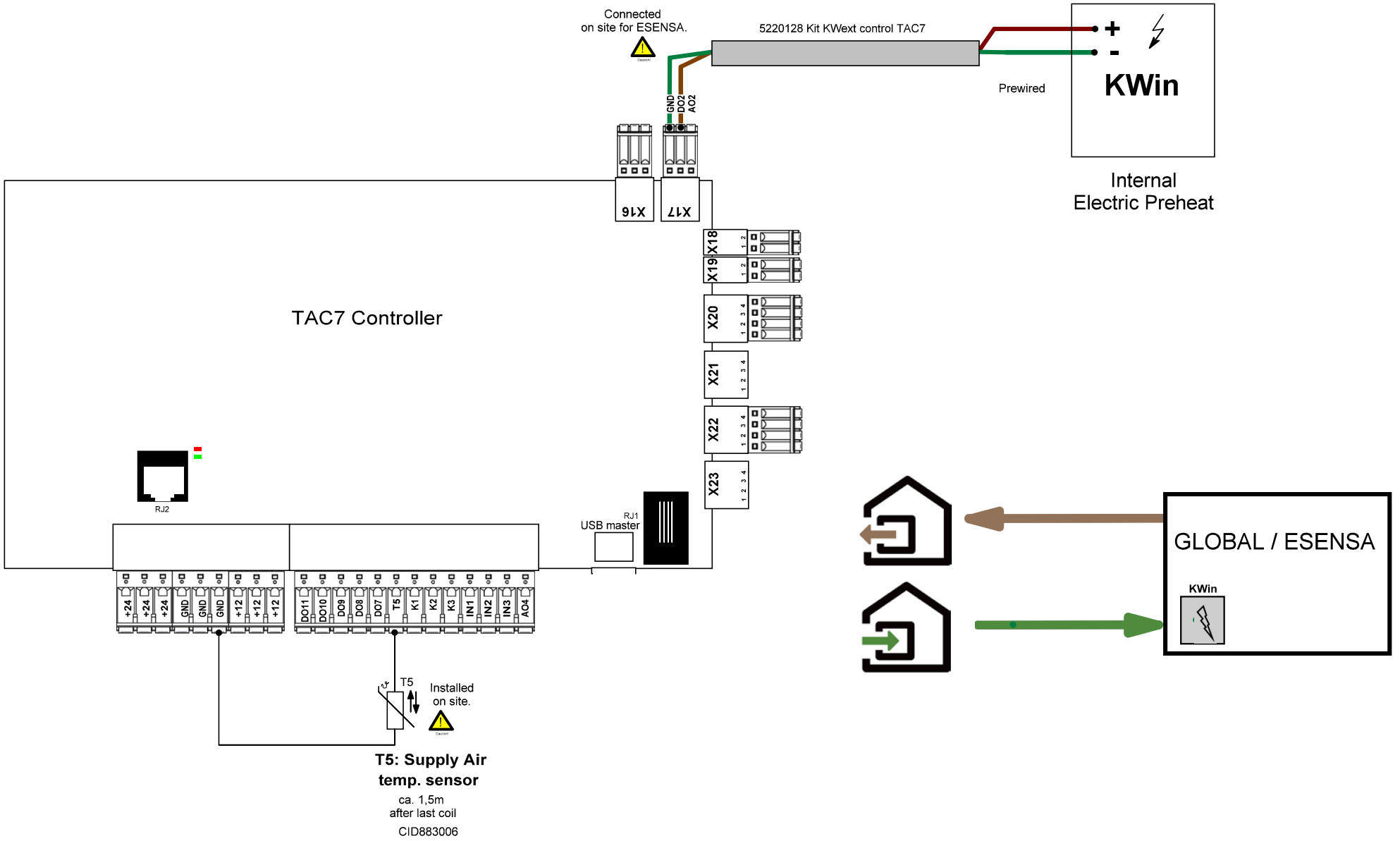

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Preheat/
Internal Electric Prehater (KWin)

Application:
KWin Internal Electric Preheat

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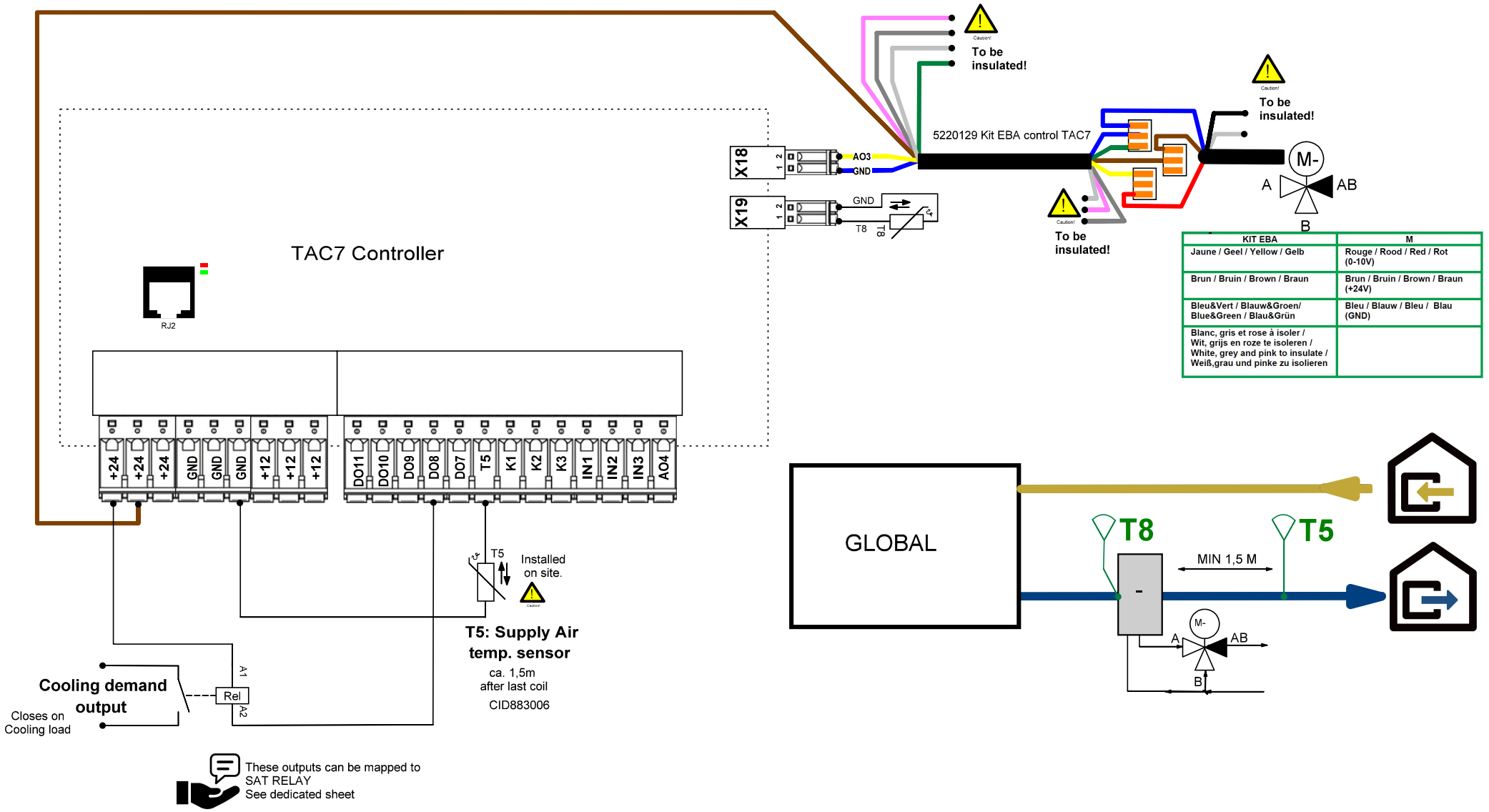

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Cool/Settings/
External Waterborne Recooler (EBA-)

Application:
External cooling coil

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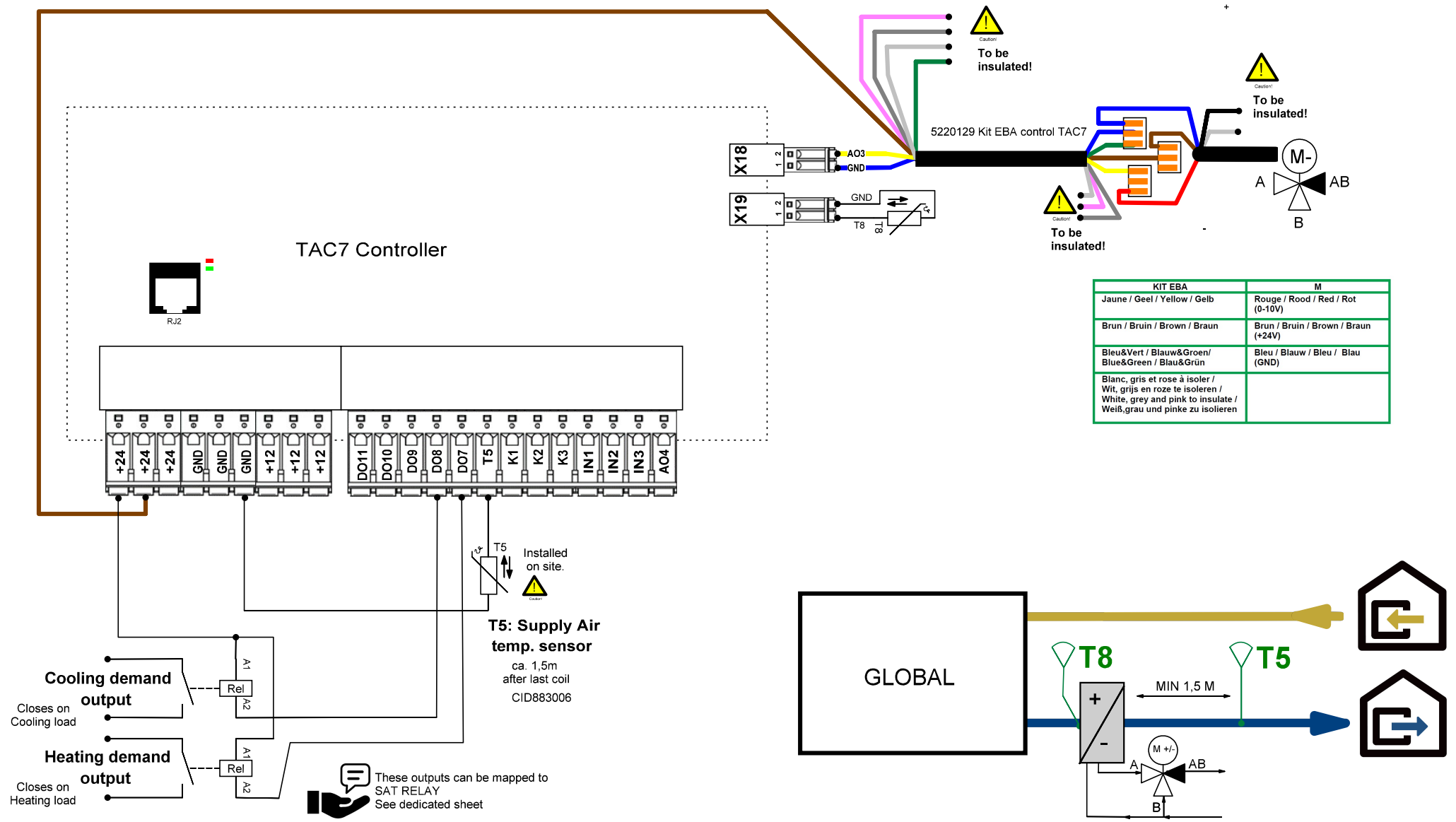

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Cool/
External Waterborne Reversible (EBA+-)

Application:
Reversible battery

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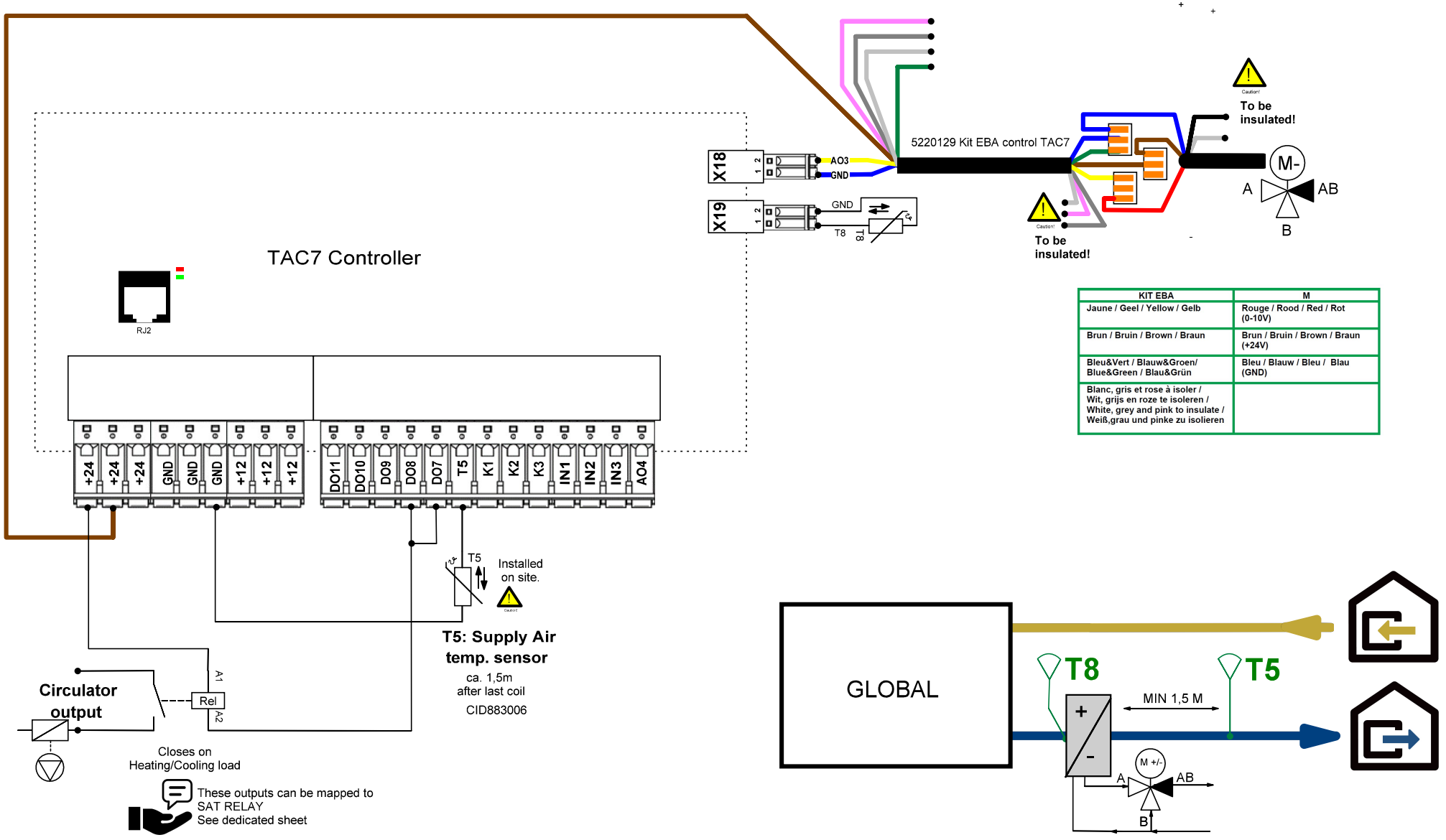

KIT EBA	M
Jaune / Geel / Yellow / Gelb	Rouge / Rood / Red / Rot (0-10V)
Brun / Bruin / Brown / Braun	Brun / Bruin / Brown / Braun (+24V)
Bleu&Vert / Blauw&Groen/ Blue&Green / Blau&Grün	Bleu / Blauw / Bleu / Blau (GND)
Blanc, gris et rose à isoler / Wit, grijs en roze te isoleren / White, grey and pink to insulate / Weiß,grau und pinke zu isolieren	

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Cool/
External Waterborne Reversible (EBA+-)

Application:
Reversible battery with 1 circulator

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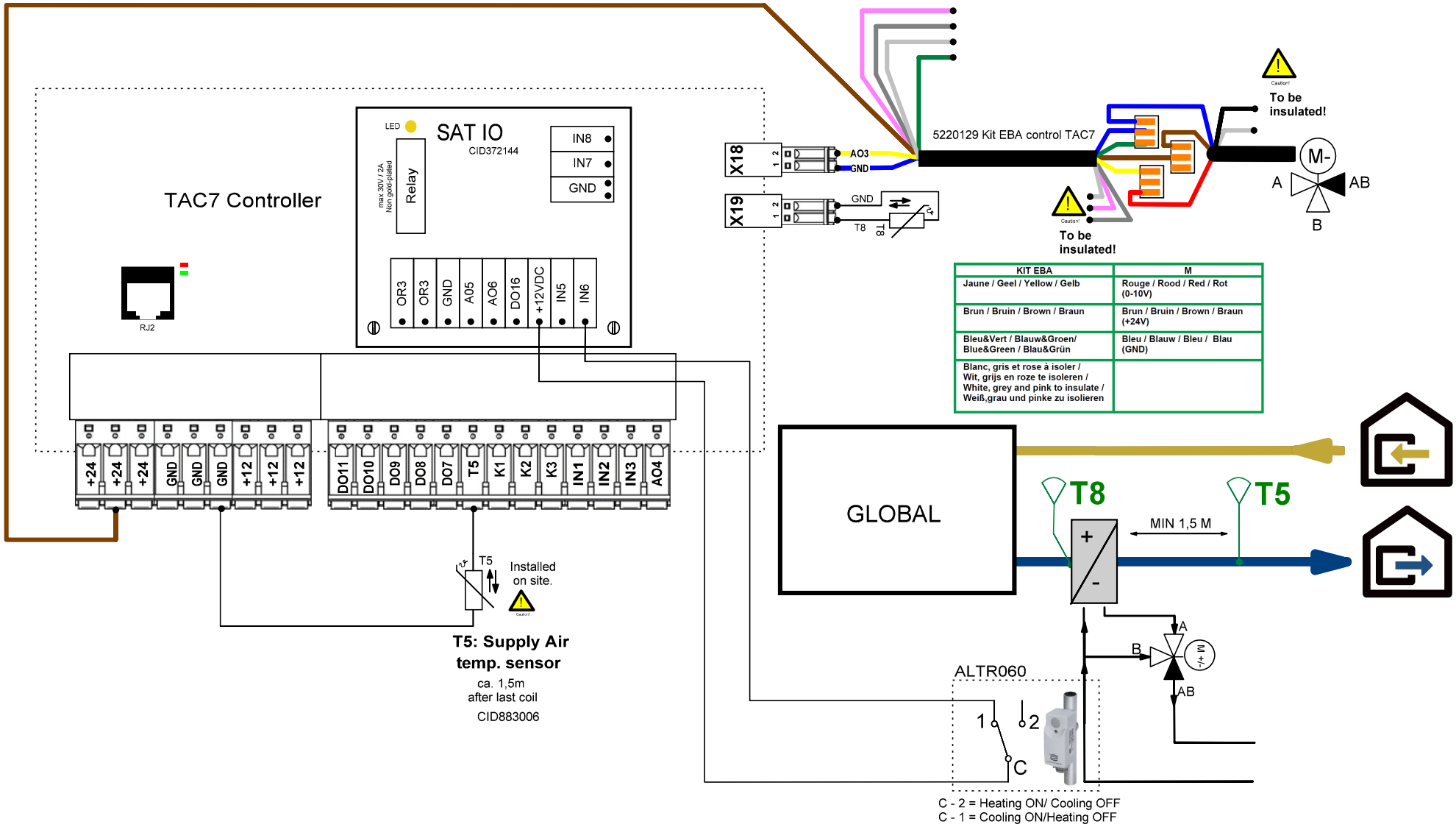

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Cool/
External Waterborne Reversible (EBA+-)

Application:
Reversible battery with 1 surface contact thermostat

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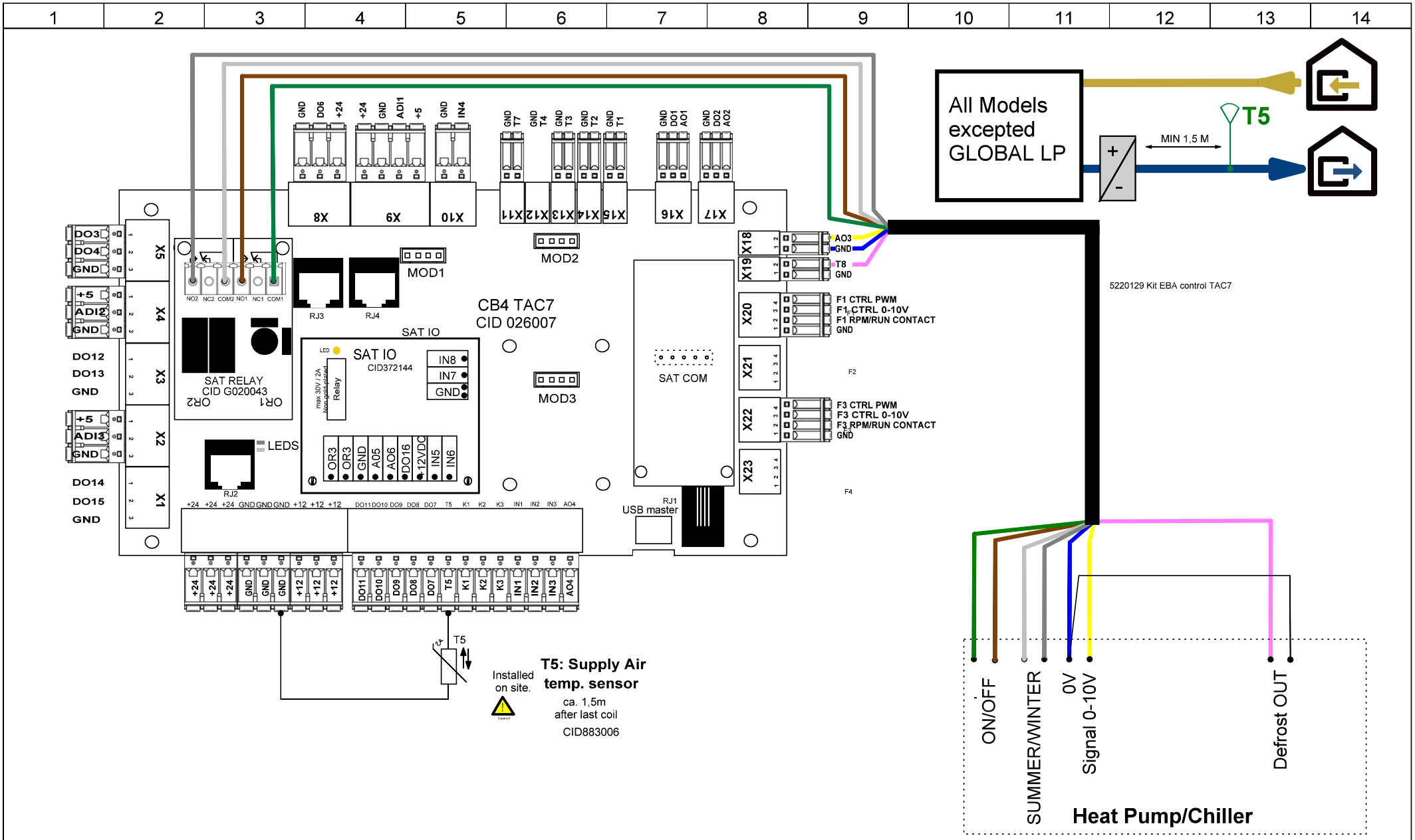
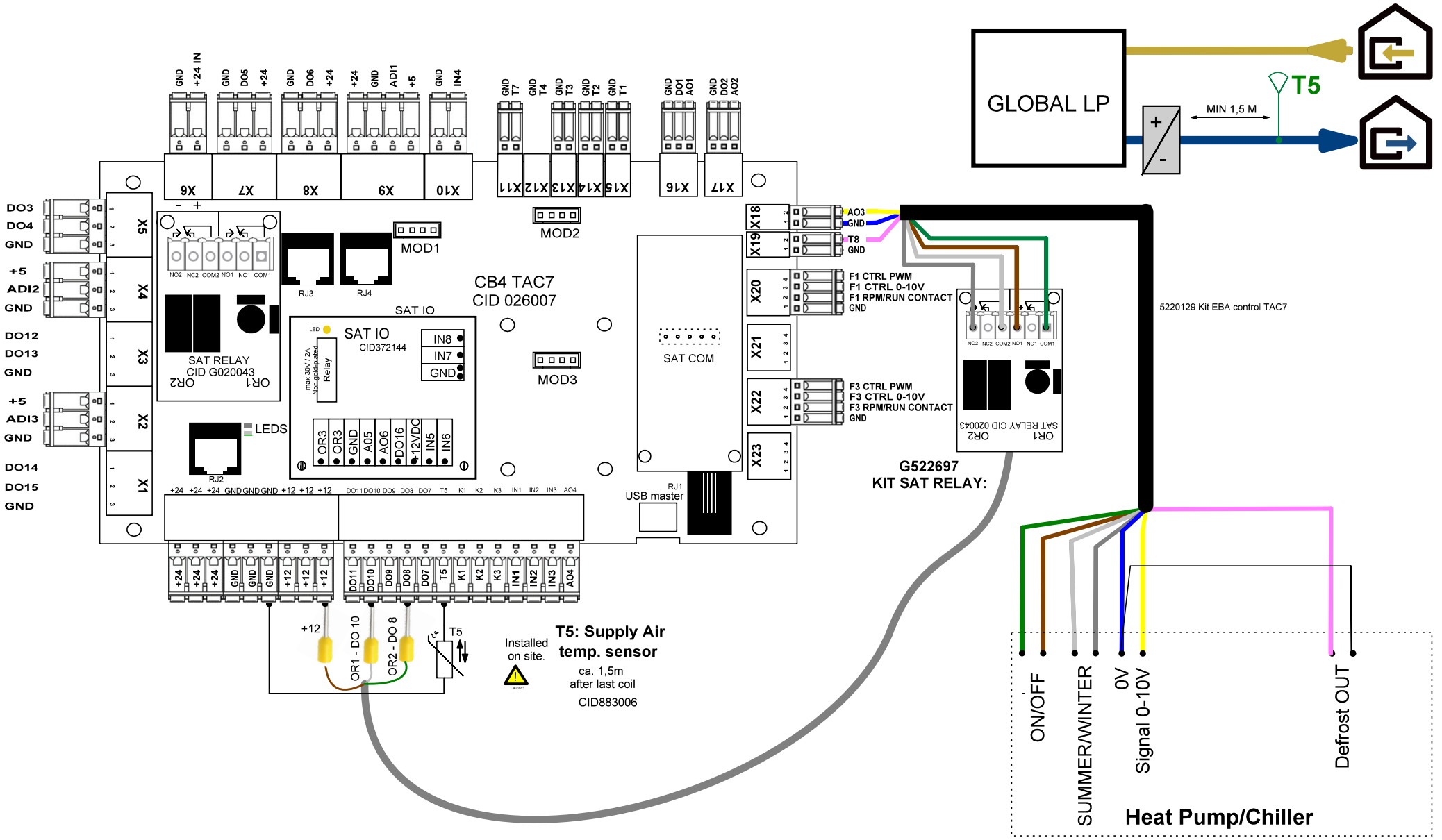


Changes			Name	Date
Name	Date	Draw.:	msg	22/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Re-heat/Heat pump
Function Cool/Settings/Chiller
Function Heat / Cool/Settings/Heat pump and Chiller

Application:
Heat pump/Chiller



Changes			Name	Date
Name	Date	Draw.:	msg	22/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat / Cool/Settings/Heat pump and Chiller

Application:
Heat pump/Chiller

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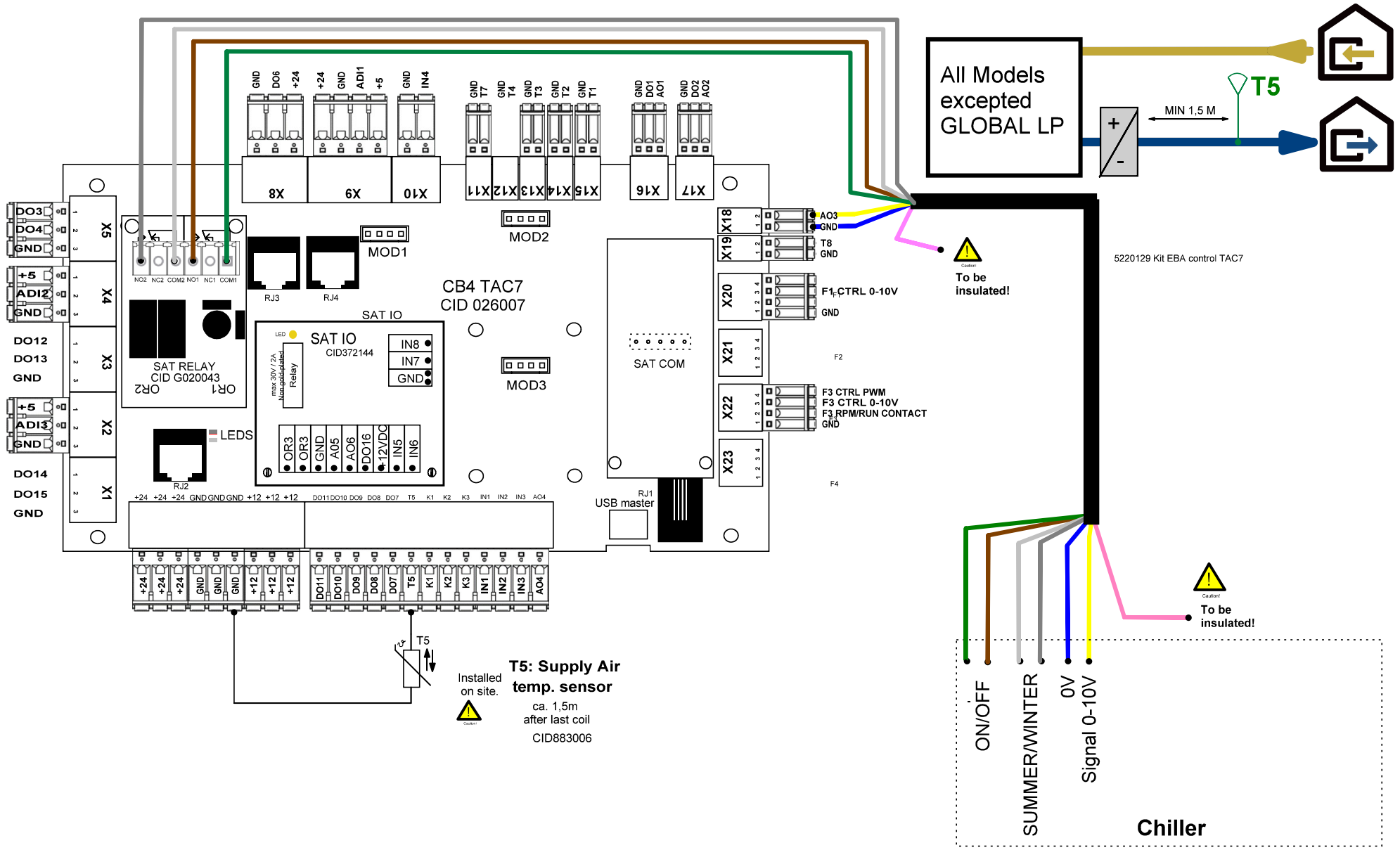

Changes			Name	Date
Name	Date	Draw.:	msg	22/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Cool/Settings/Chiller

Application:
Chiller

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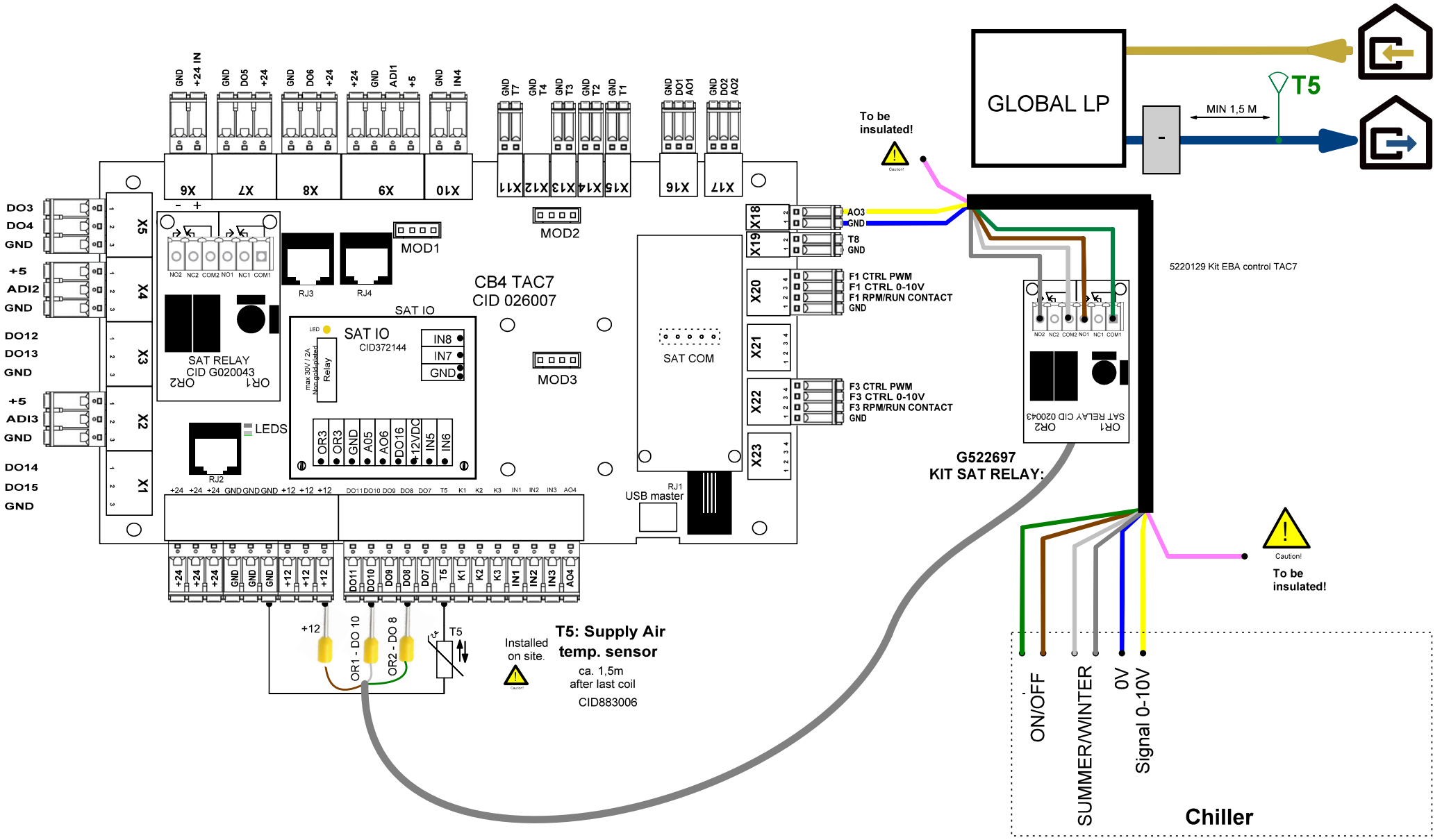

Changes			Name	Date
Name	Date	Draw.:	msg	22/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:

Function Cool/Settings/Chiller

Application:

Heat pump/Chiller

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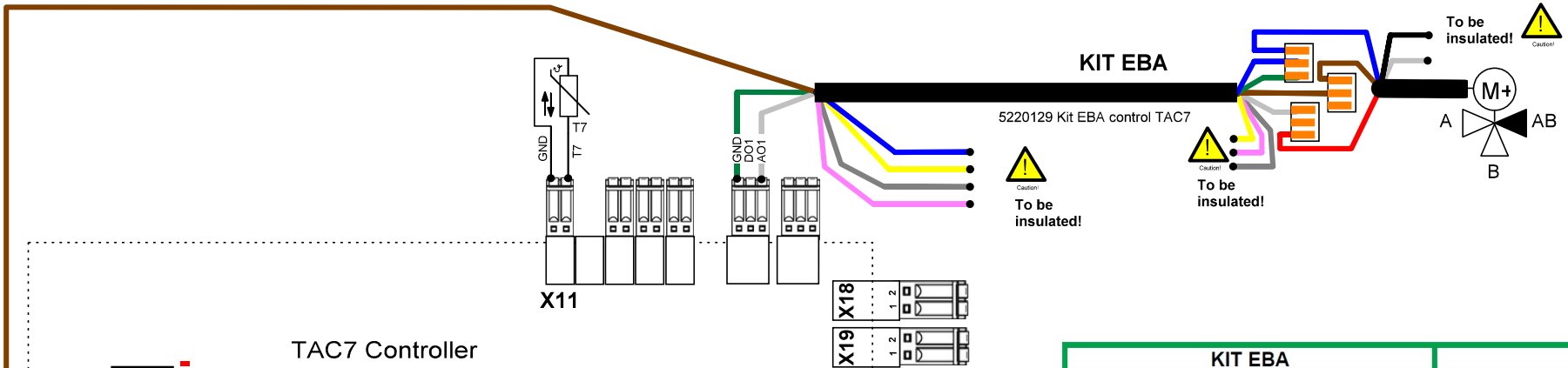
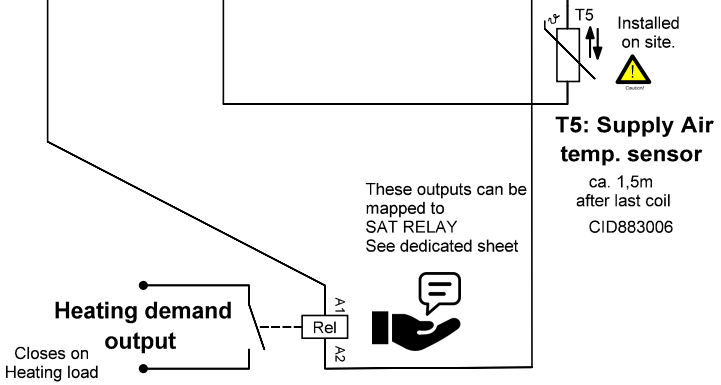
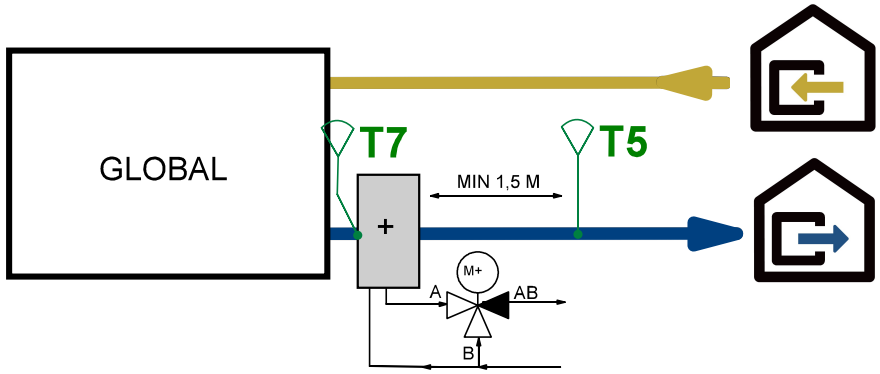


KIT EBA	M
Blanc / Wit / White / Weiß	Rouge / Rood / Red / Rot (0-10V)
Brun / Bruin / Brown / Braun	Brun / Bruin / Brown / Braun (+24V)
Bleu&Vert / Blauw&Groen / Blue&Green / Blau&Grün	Bleu / Blauw / Bleu / Blau (GND)
Jaune, gris et rose à isoler / Geel, grijs en roze te isoleren / Yellow, grey and pink to insulate / Gelb,grau und pinke zu isolieren	





Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/
External Waterborne Rehater (EBA+)

Application:
External heating coil

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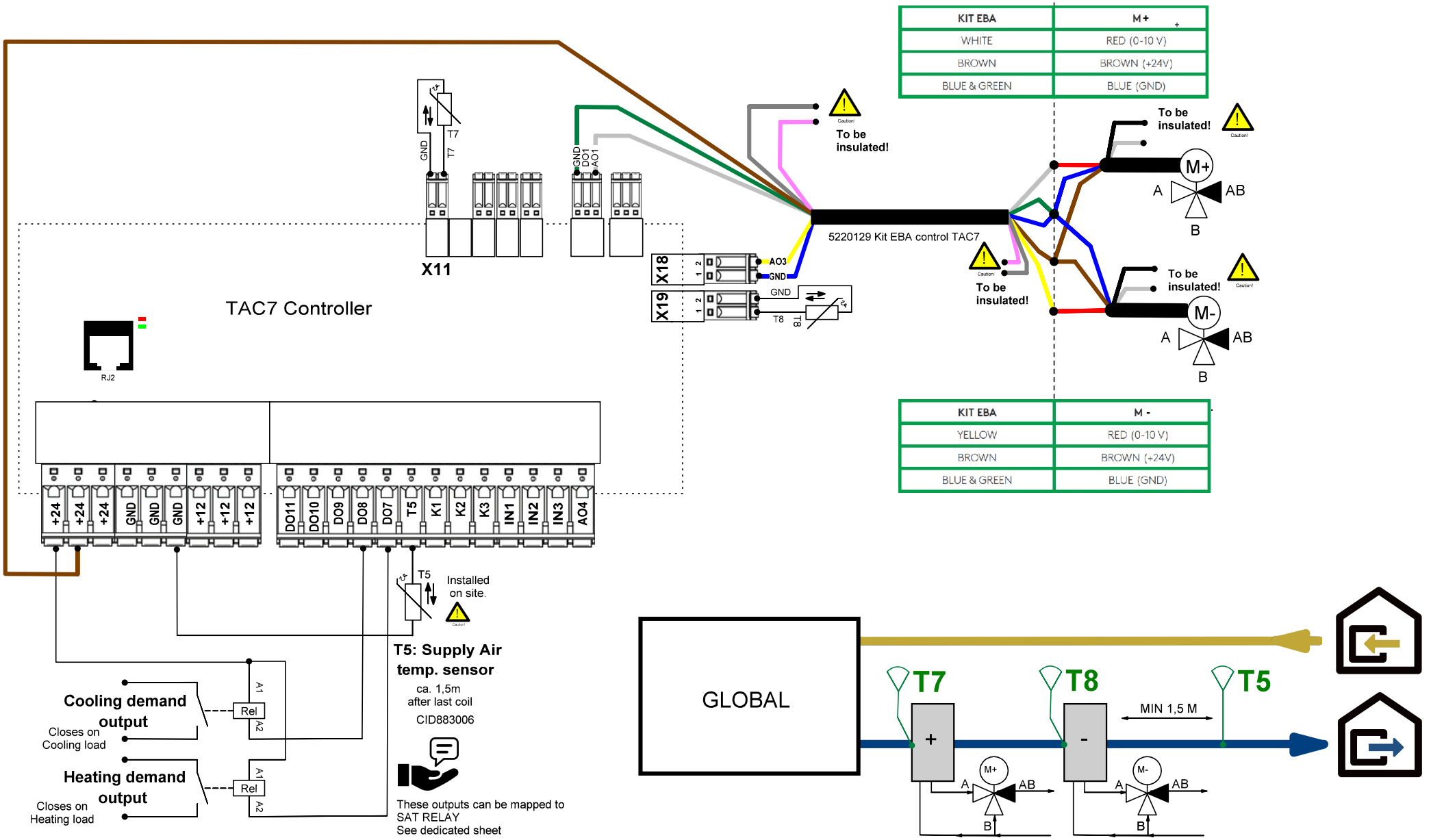

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/External Waterborne Rehater (EBA+)
& Function Cool/Settings/External Waterborne Recooler (EBA-)

Application:
Ext. heating & Ext. Cooling 1 (use of 1 EBA cable)

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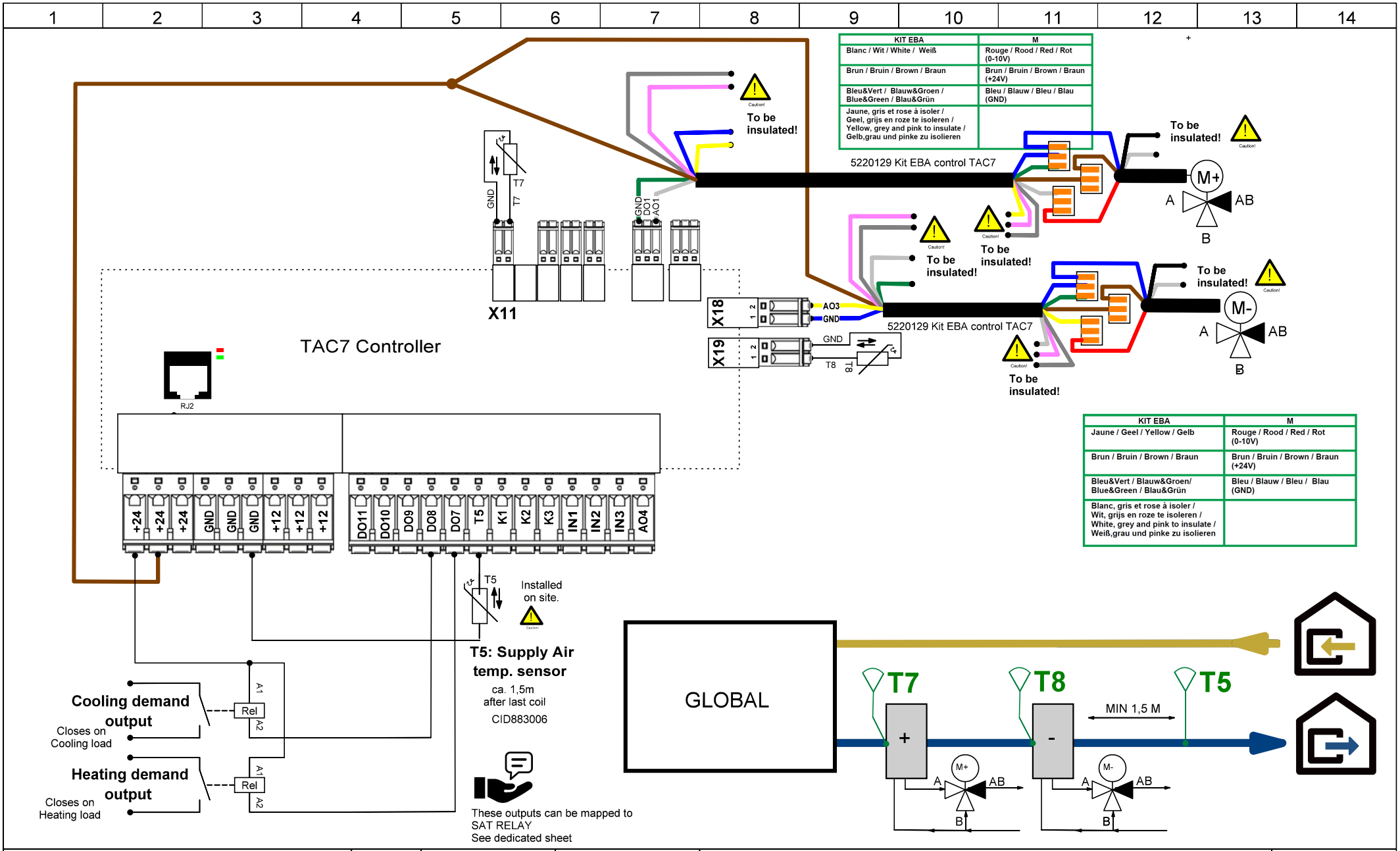

Changes			Name	Date
Name	Date	Draw.:	ola	03/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/External Electric Rehater (KWext)
& Function Cool/Settings/External Waterborne Recooler (EBA-)

Application:
Ext. heating & Ext. Cooling 2 (use of 2 EBA cables)

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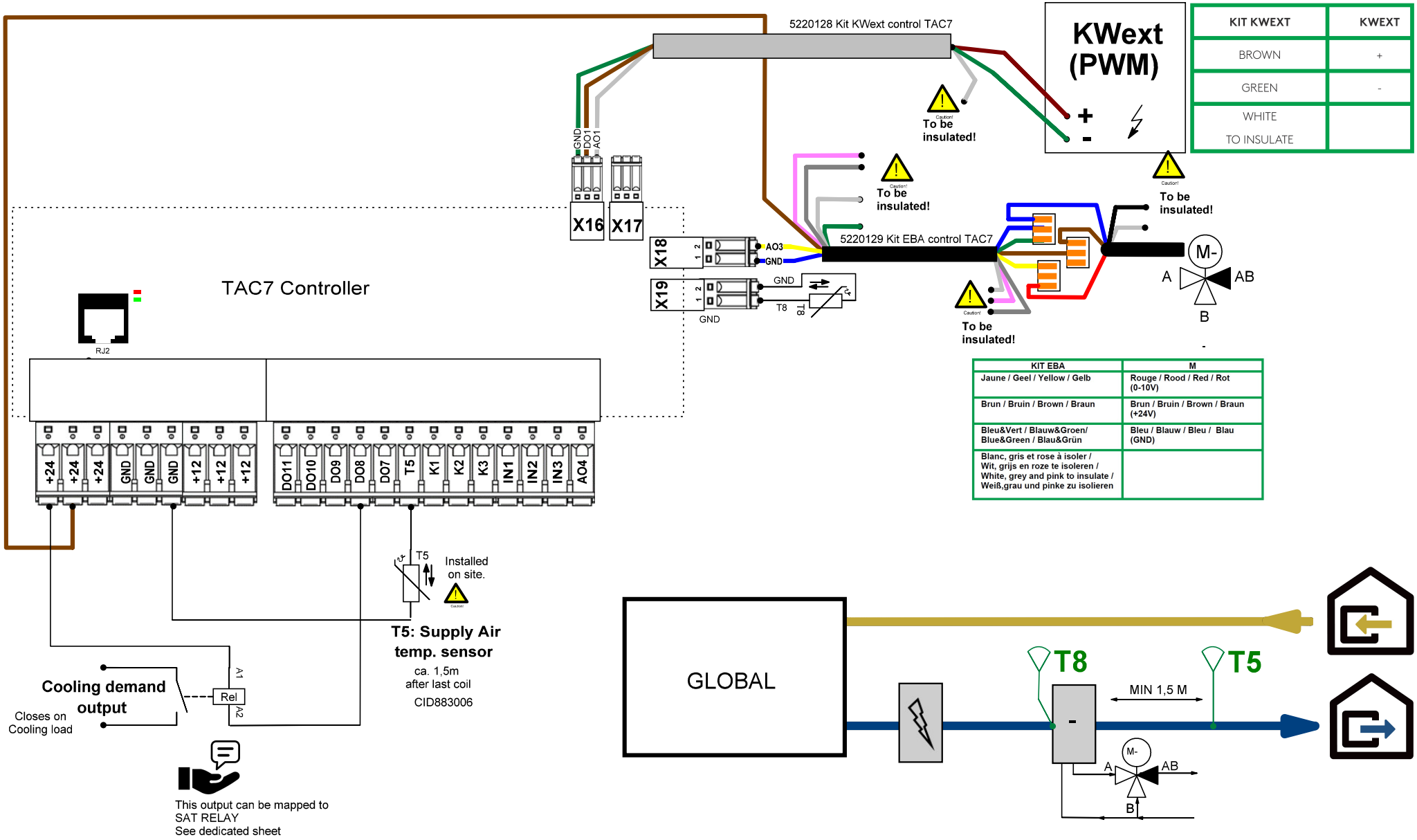

Changes			Name	Date
Name	Date	Draw.:	ola	04/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/Internal Electric Rehater (KWout - PWM) & Function Cool/Settings/External Waterborne Recooler (EBA-)

Application:
Ext.elect. heating & Ext. Cool

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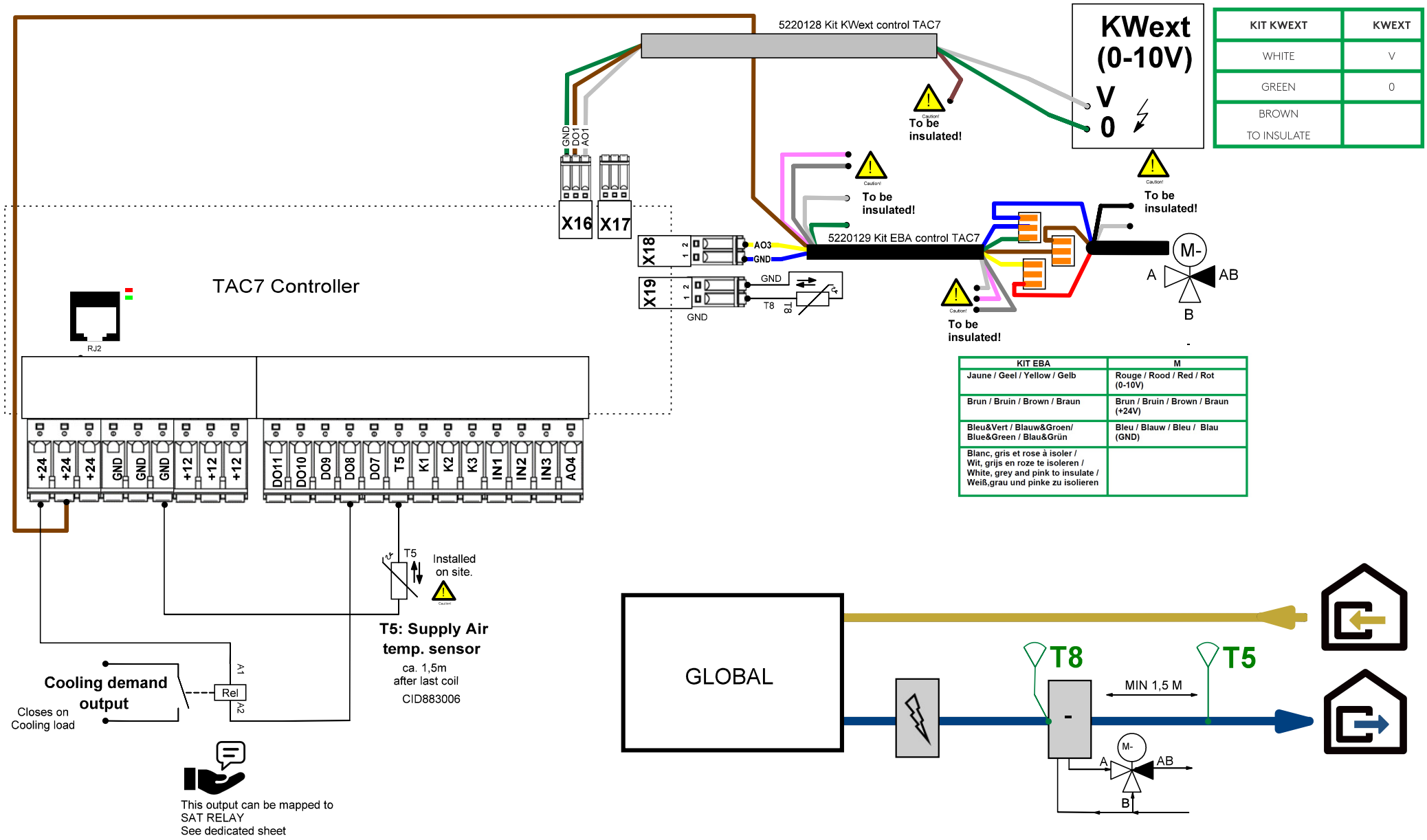

Changes			Name	Date
Name	Date	Draw.:	ola	04/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Reheat/Internal Electric Rehater (KWout - 0-10V) & Function Cool/Settings/External Waterborne Recooler (EBA-)

Application:
Ext.elec. 0-10V & Ext. cool

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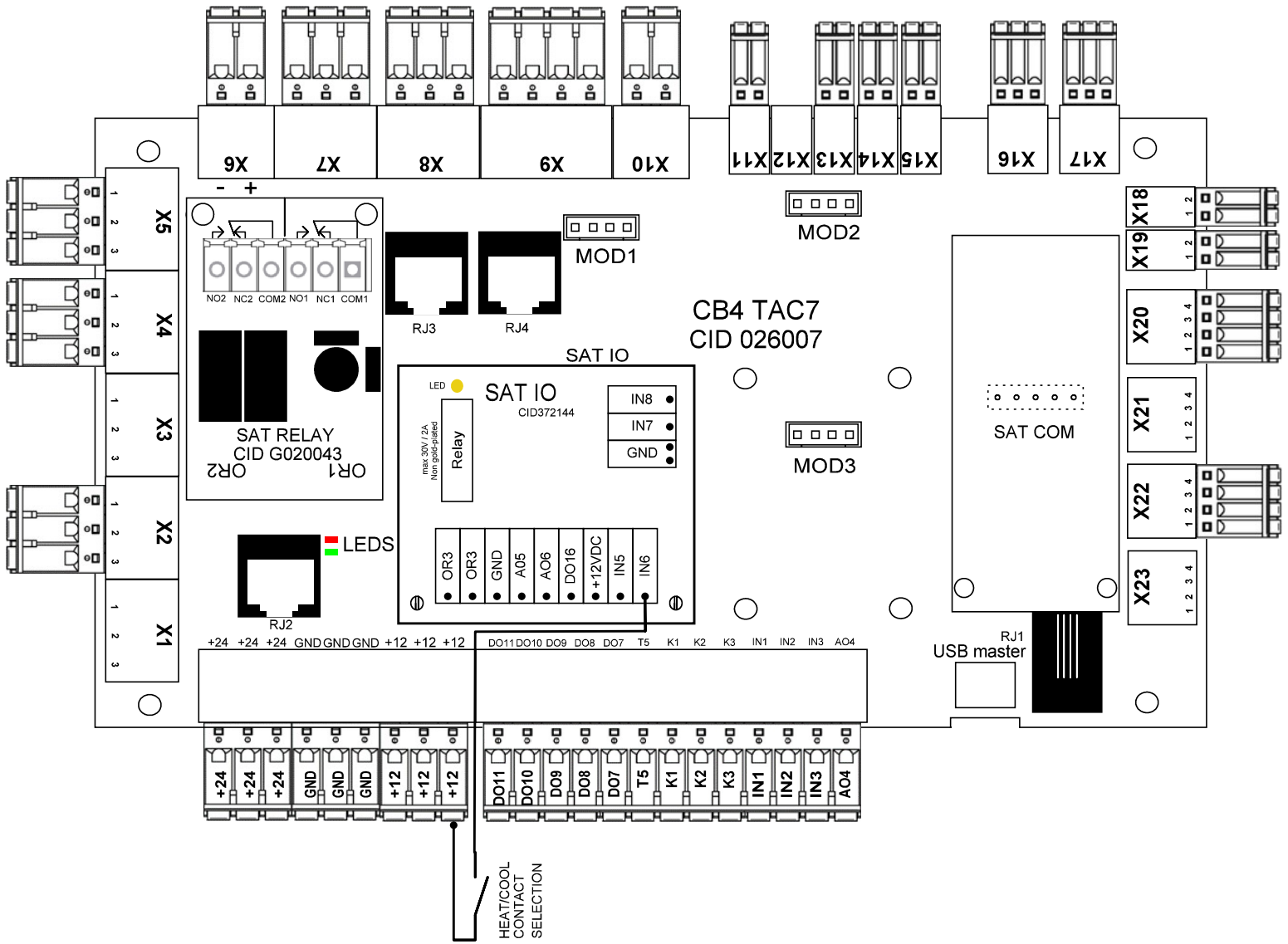

Open (0) = Heating ON/ Cooling OFF
Close (1) = Cooling ON/Heating OFF

Changes			Name	Date
Name	Date	Draw.:	ola	04/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Selection of heating/cooling in presence of postheater/postcooler.
In alternative to heat/cool selection via:
- TACtouch Function Temperature/Regulation mode
- Automatic changeover
- BMS heat/cool selection control

Application:
HEAT/COOL CONTACT SELECTION

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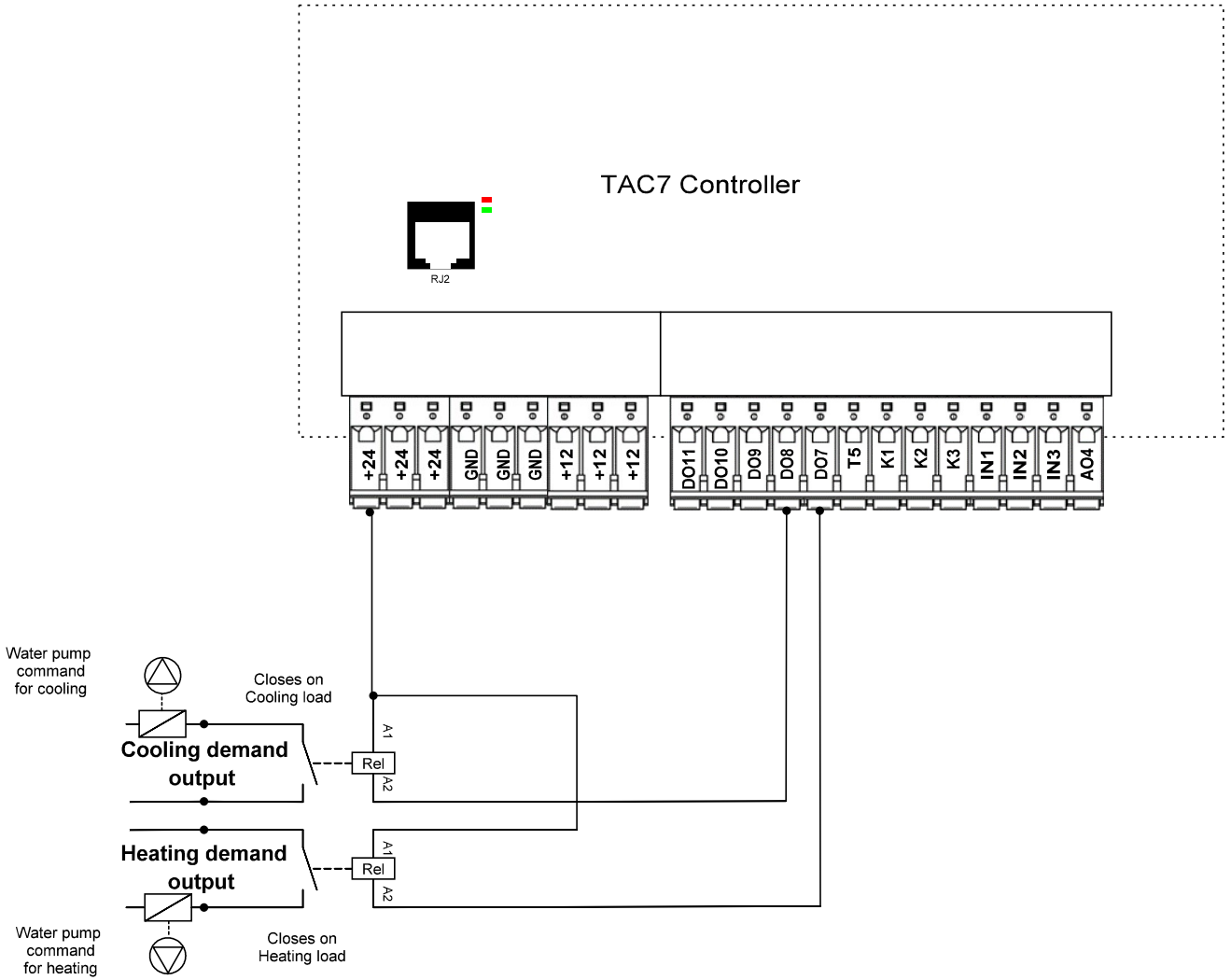
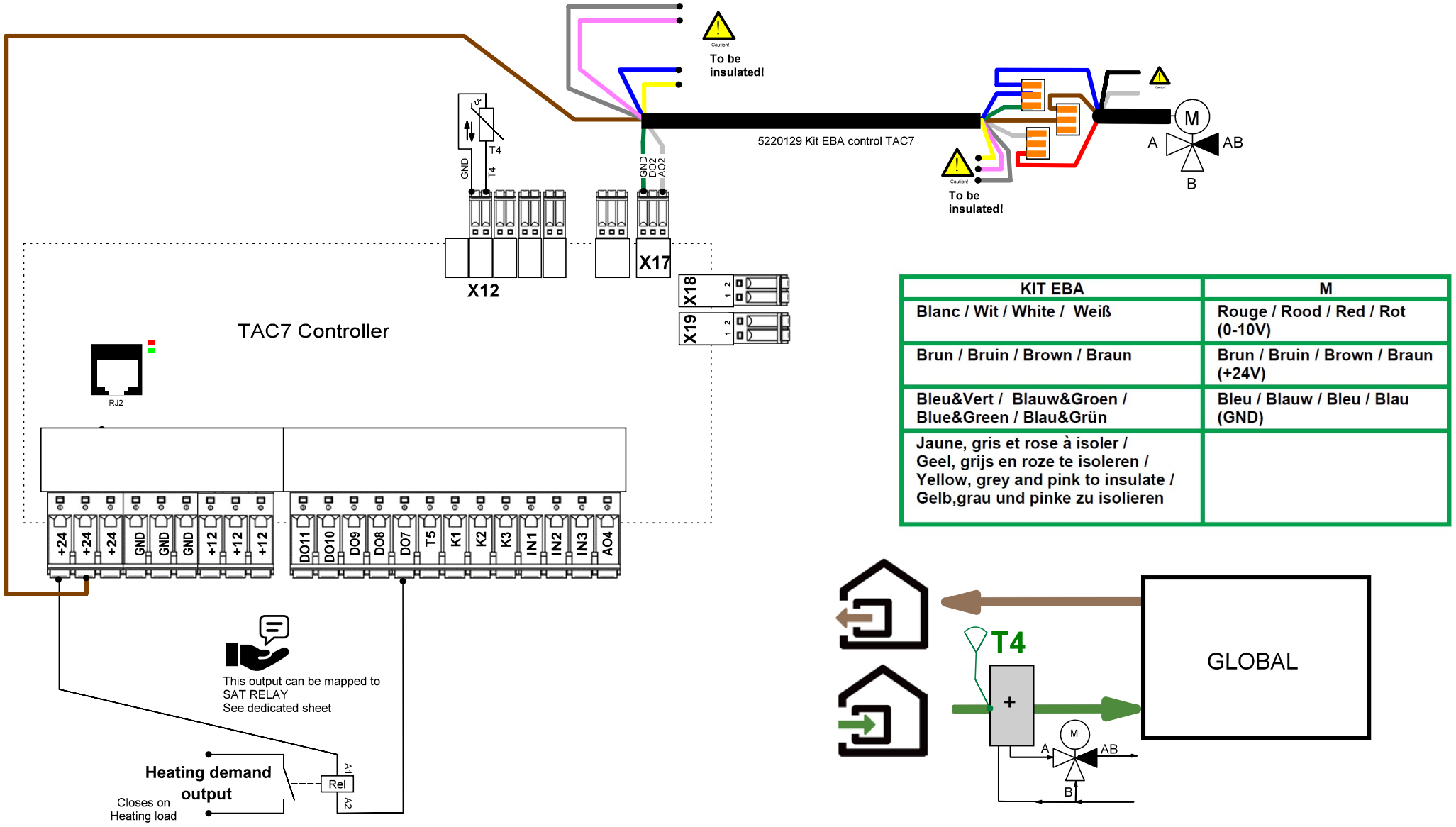


Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	04/10/2024		49
		check.:				
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Circulator pump (with hydraulic coils)	66



KIT EBA	M
Blanc / Wit / White / Weiß	Rouge / Rood / Red / Rot (0-10V)
Brun / Bruin / Brown / Braun	Brun / Bruin / Brown / Braun (+24V)
Bleu&Vert / Blauw&Groen / Blue&Green / Blau&Grün	Bleu / Blauw / Bleu / Blau (GND)
Jaune, gris et rose à isoler / Geel, grijs en roze te isoleren / Yellow, grey and pink to insulate / Gelb,grau und pinke zu isolieren	

Changes			Name	Date
Name	Date	Draw.:	ola	04/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Heat/Preheat/
External Waterborne Preheater (EBAin)

Application:
External Hydraulic Preheater

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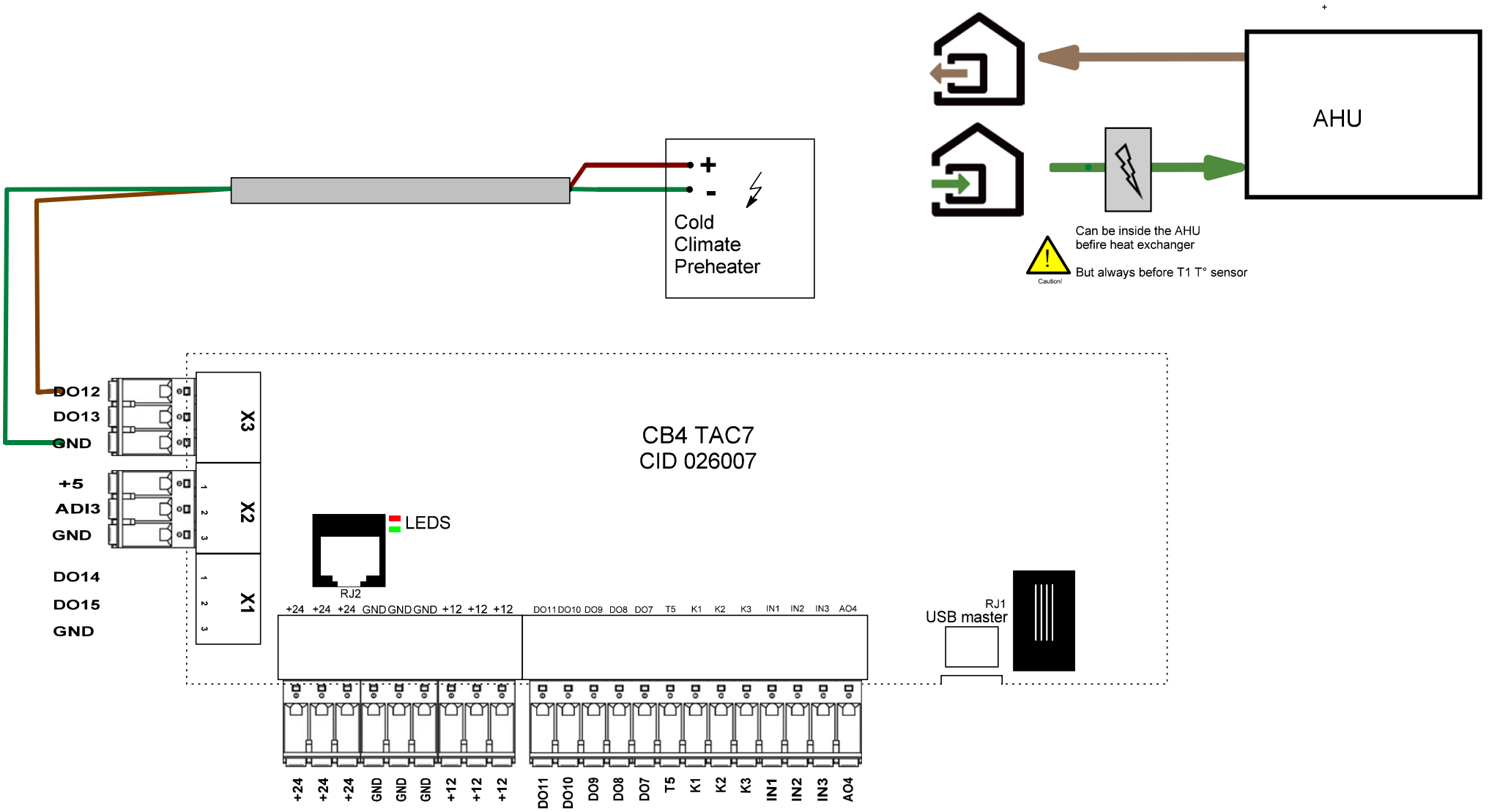
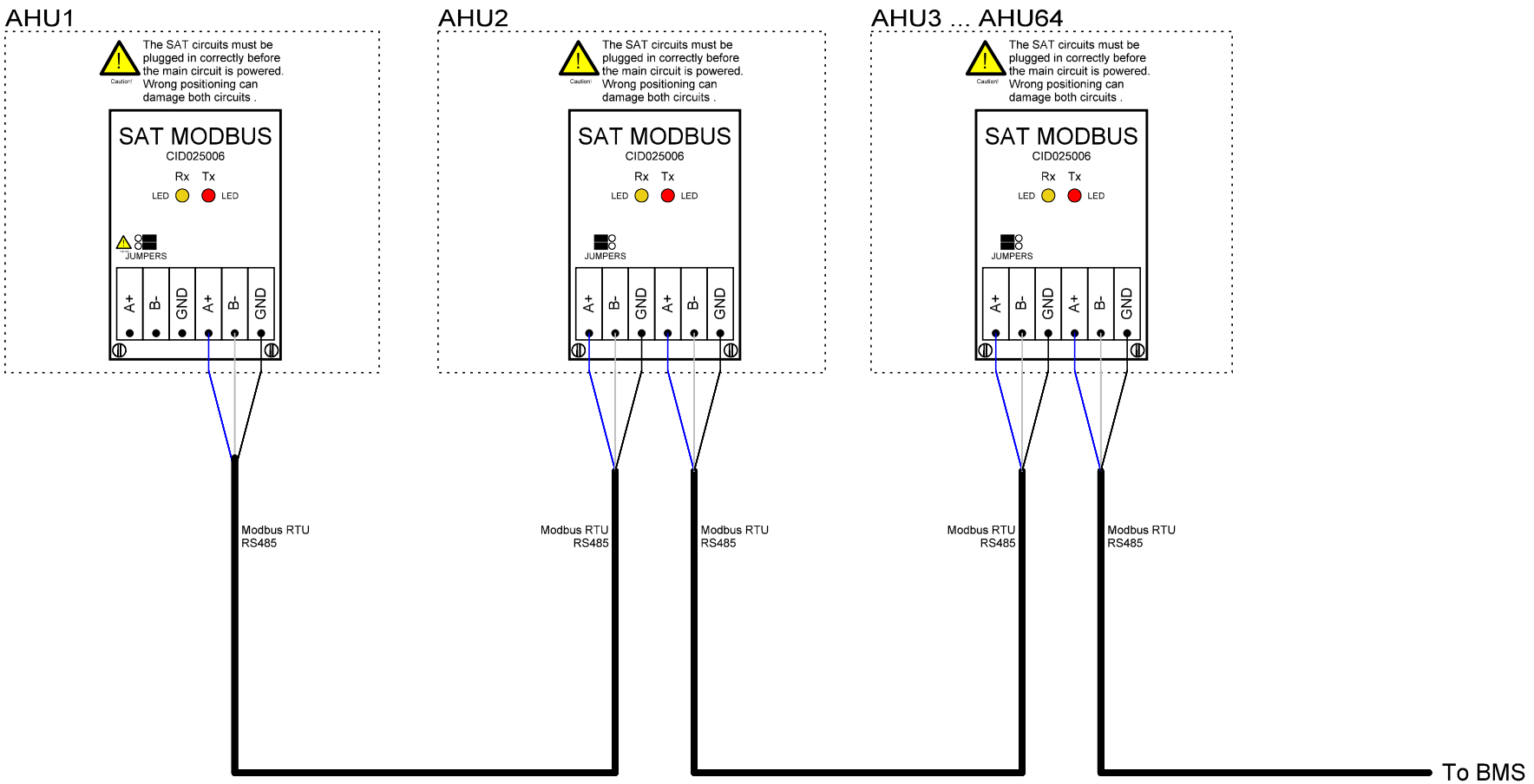


Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	msg	17/10/2024	Function Heat/Cold Climate Preheater	51
		check.:				
		Norm:			Application:	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Cold Climate Preheater	



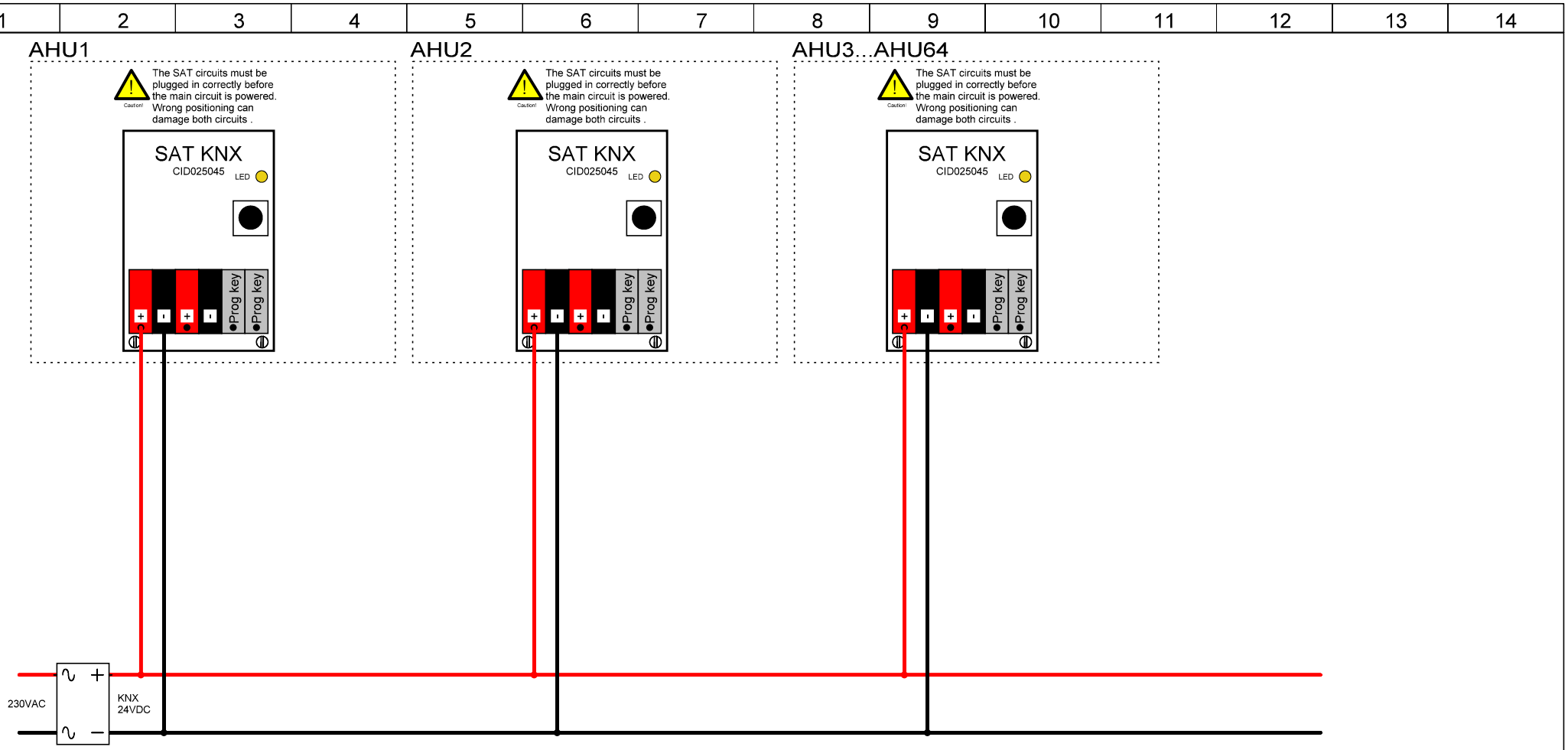
The cables used in the network must conform to RS-485 Standard with twisted pair conductors. The cables must be shielded. Conductor Area 0.26 mm² to 0,50mm². The total length must not exceed 1.000 meters.

Depending on Modbus Master device manufacturer, it may be necessary to invert A+ and B- wires on its connectors.

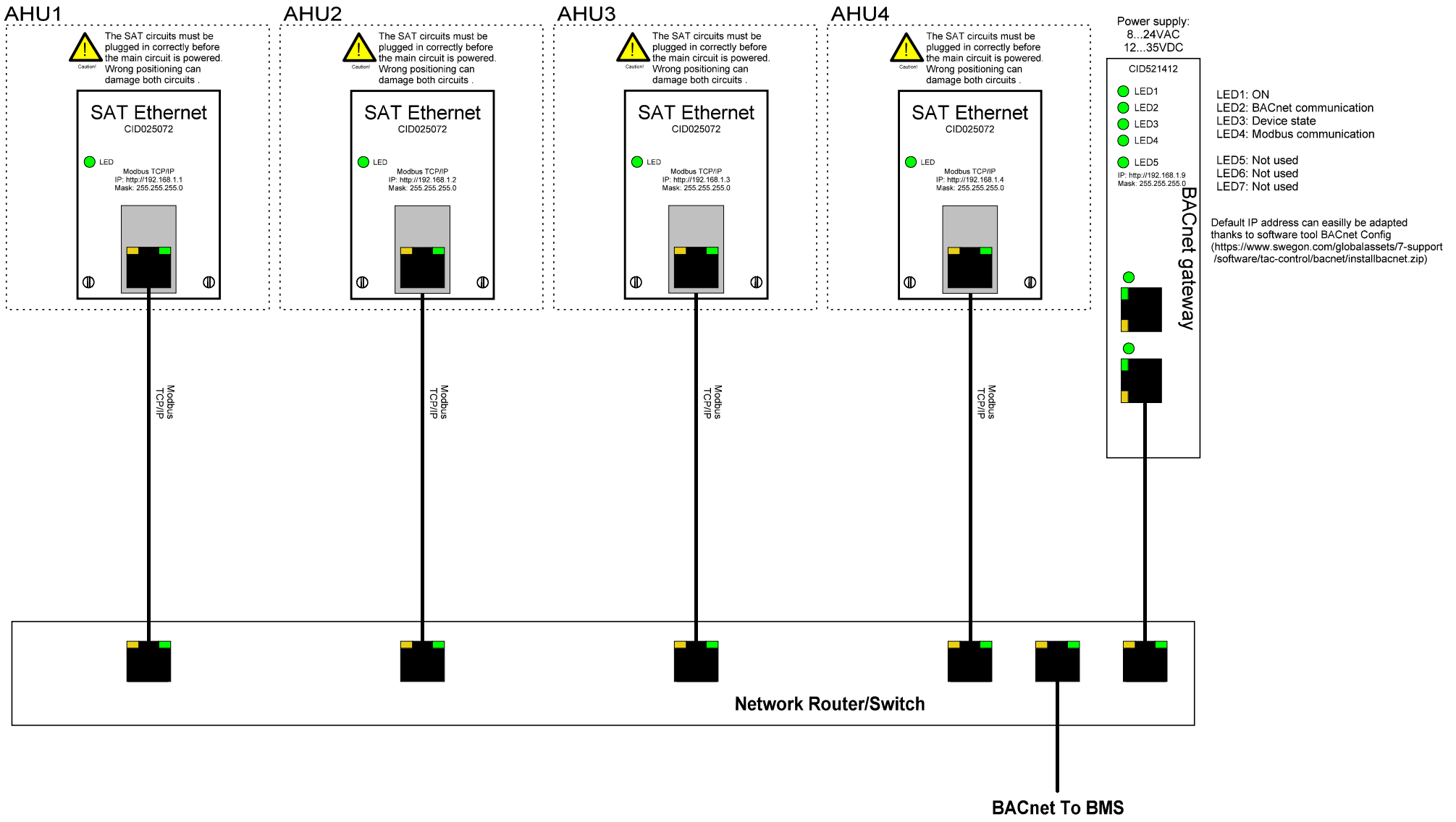
Changes			Name	Date
Name	Date	Draw.:	msg	17/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Communication/SAT MODBUS configuration

Application:
Modbus RTU



Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	msg	17/10/2024		53
		check.:				
		Norm:			Application: KNX	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					



Changes			Name	Date
Name	Date	Draw.:	msg	17/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Communication/SAT LAN configuration

Application:
BACnet

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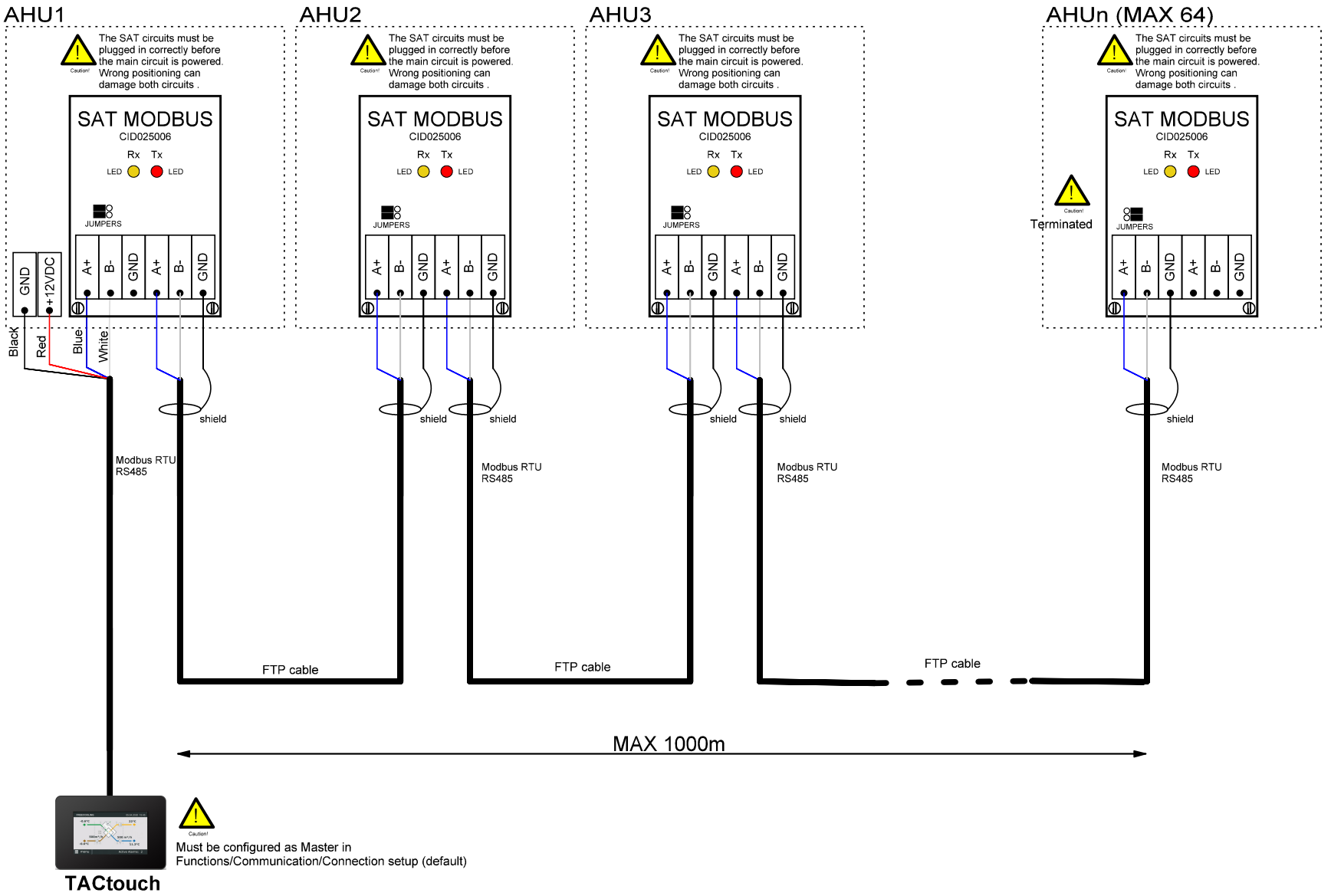

Changes			Name	Date
Name	Date	Draw.:	msg	17/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Communication/Connection Setup
Function Network

Application:
TACtouch centralised

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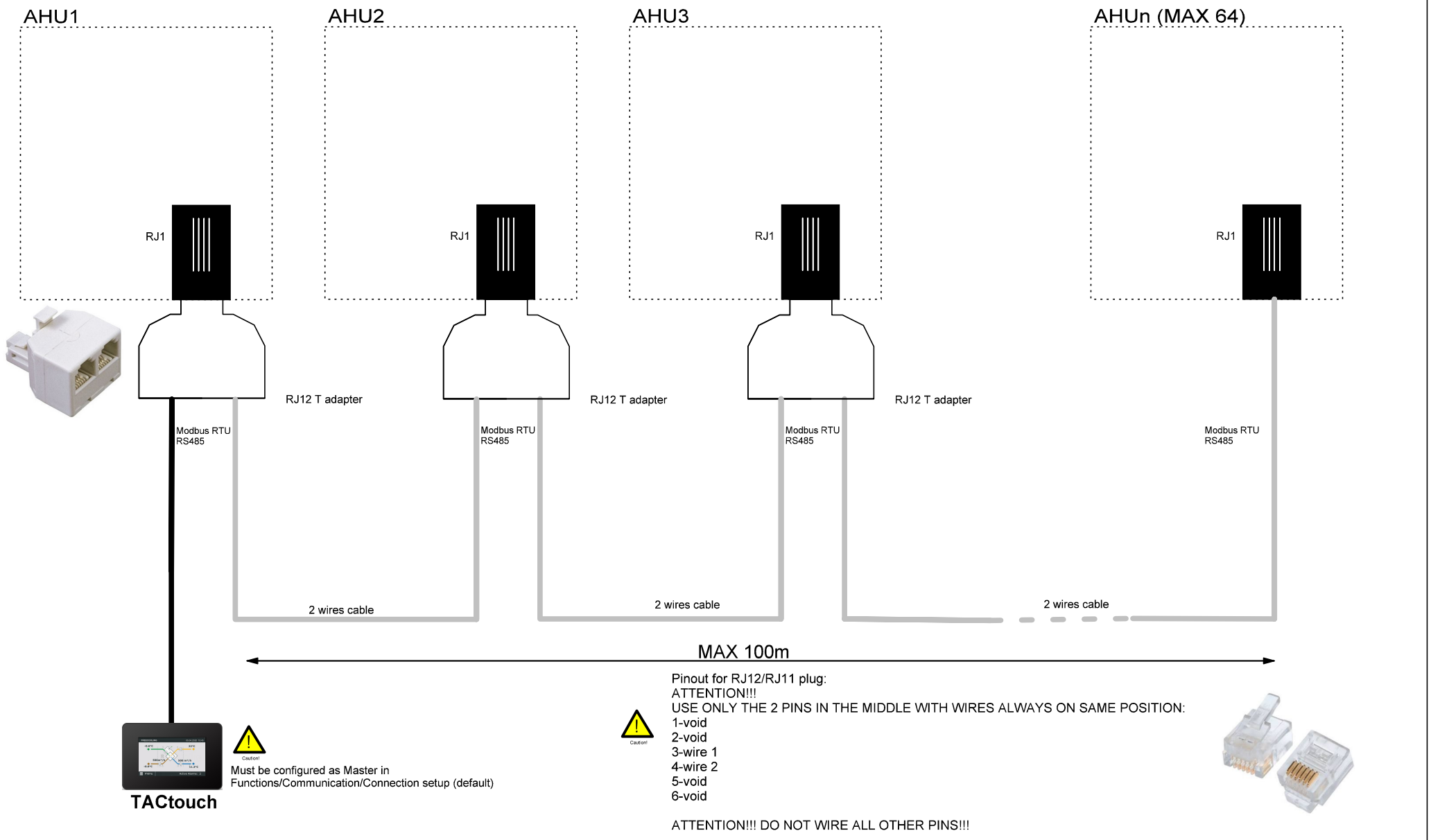

Changes			Name	Date
Name	Date	Draw.:	msg	17/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function Communication/Connection Setup
Function Network

Application:
TACtouch centralised short

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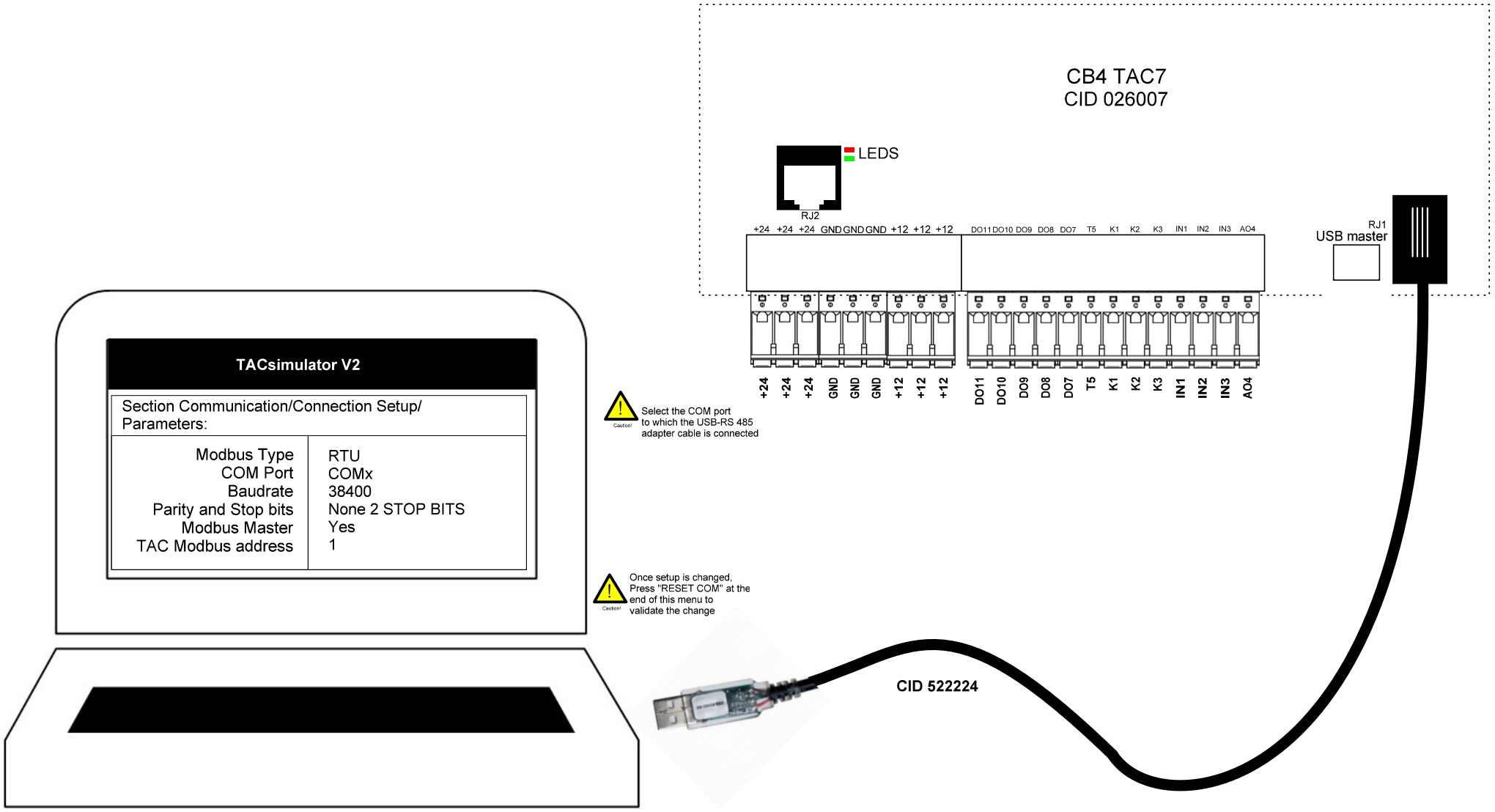
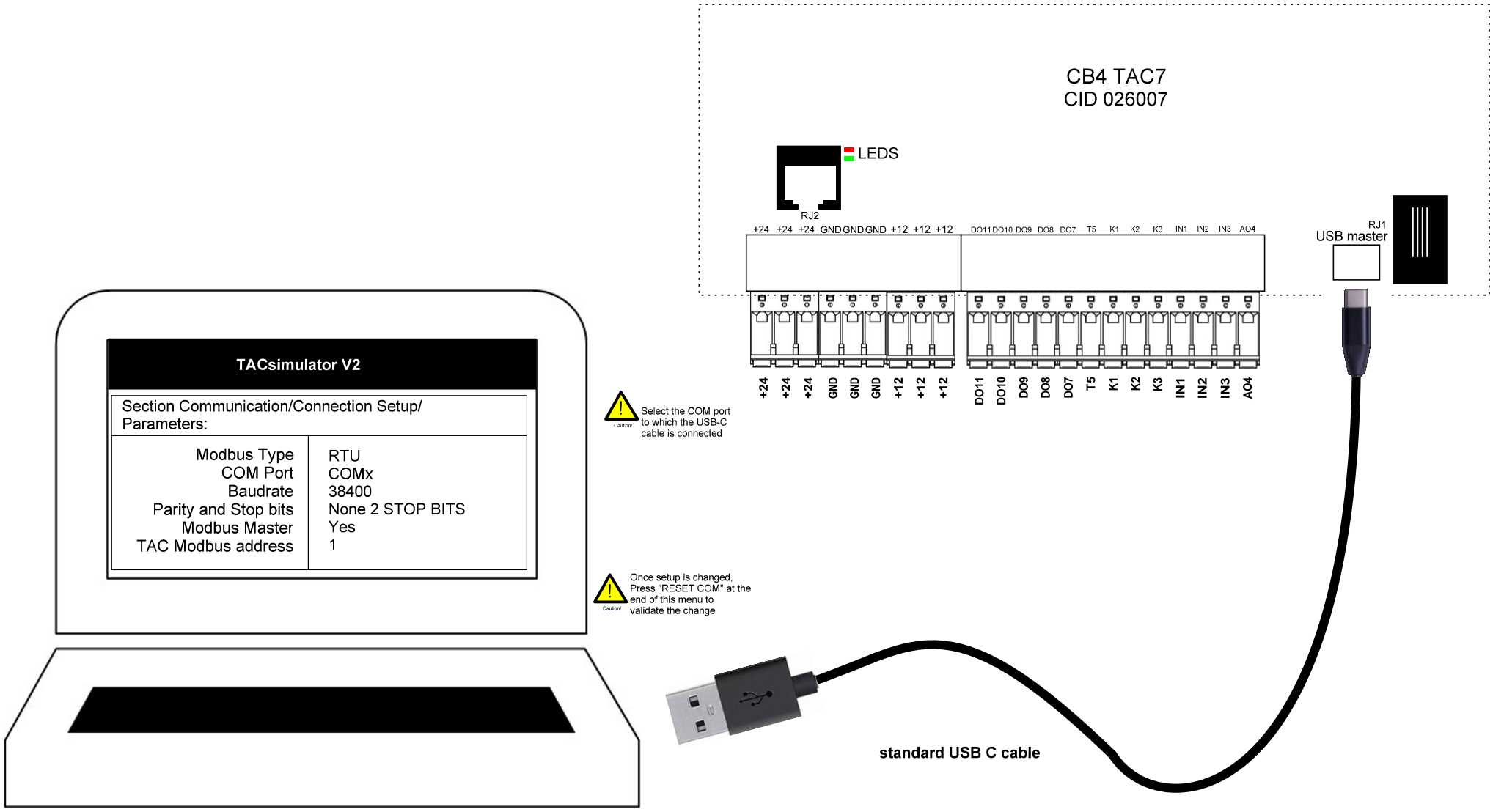
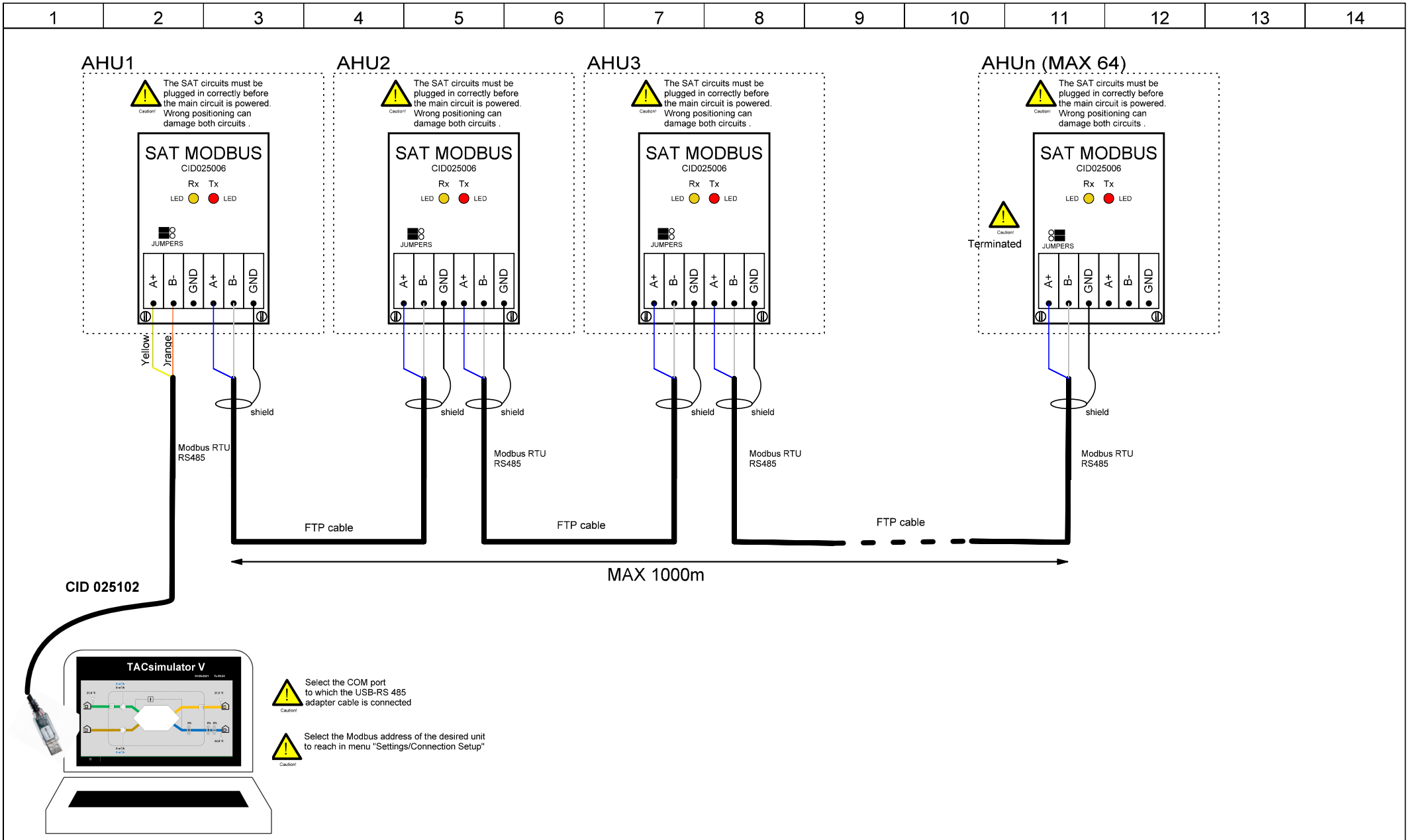


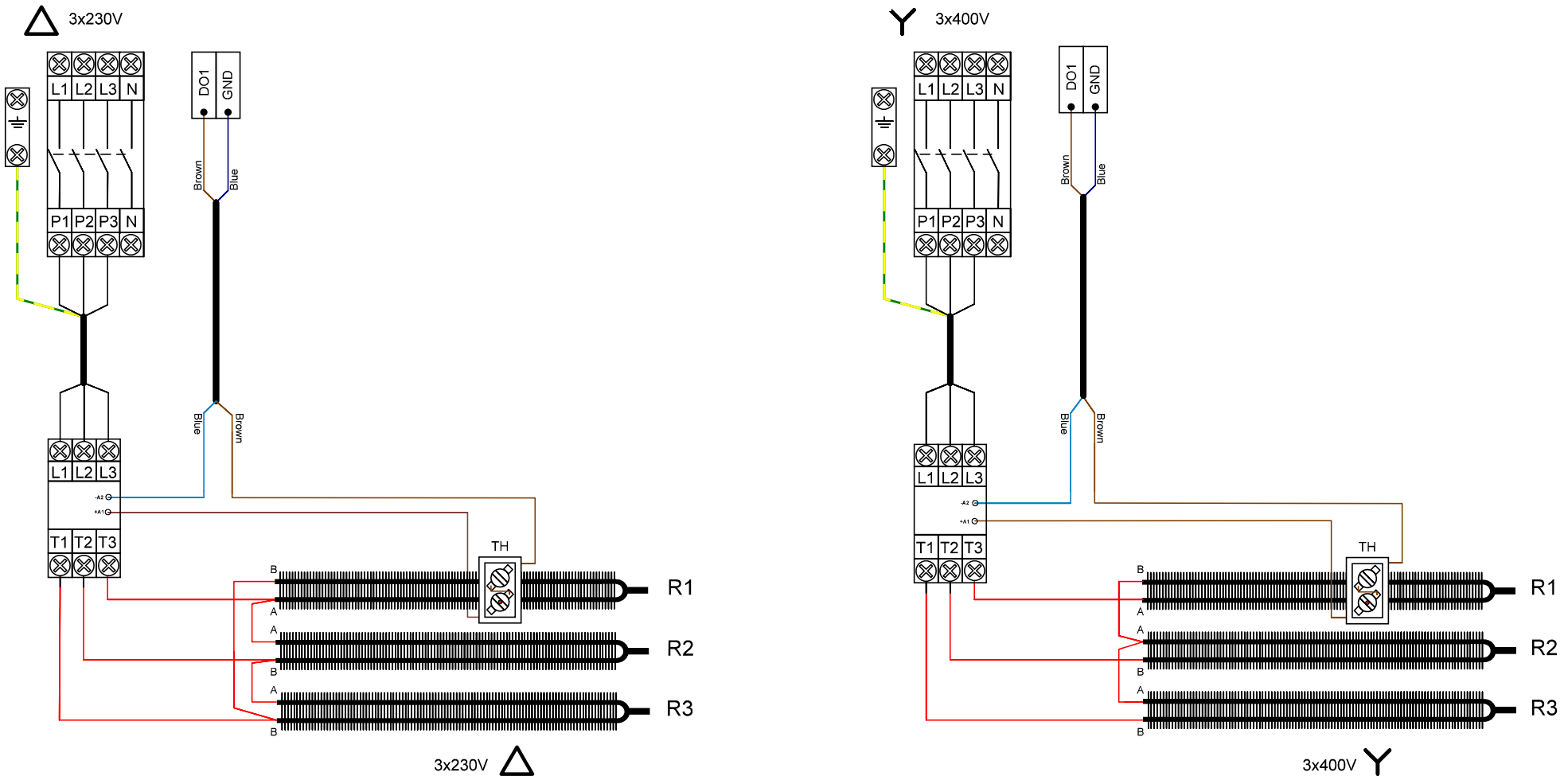
Changes			Name	Date		Page
Name	Date	Draw.:	ola	04/10/2024		57
		check.:				
		Norm:			Application: Software HMI+USB RS485	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					



Changes			Name	Date		Page
Name	Date	Draw.:	msg	06/05/2025	From version TAC7 v1.0.10.66	58
		check.:				
		Norm:			Application: Software HMI+USB C	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					

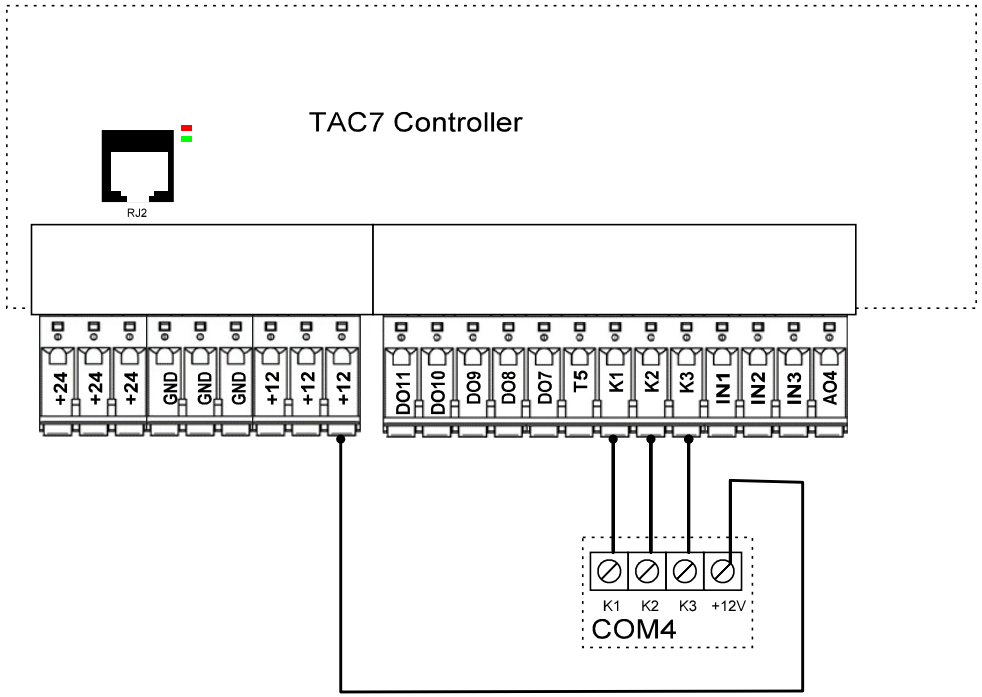


Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	msg	17/10/2024		59
		check.:				
		Norm:			Application: Soft HMI centralised	of 66
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7					

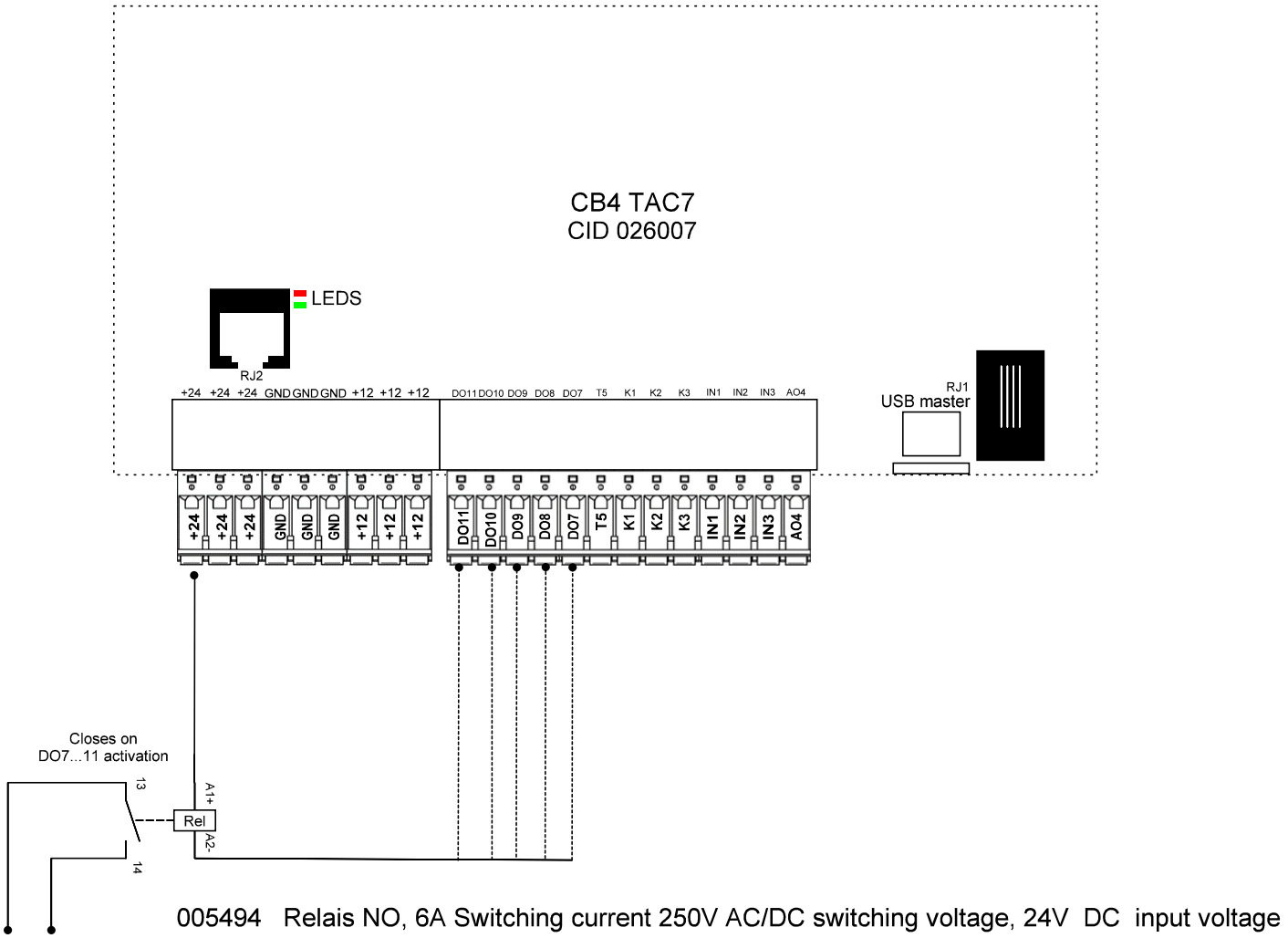


Attention: only possible to change 3x230V into 3x400V. Due to cable sections and selected components, changing from 3x400V to 3x230V is not allowed on site.

Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	msg	16/03/2021	N.A.	60
		check.:				
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				KWout 3x230V - 3x400V	66

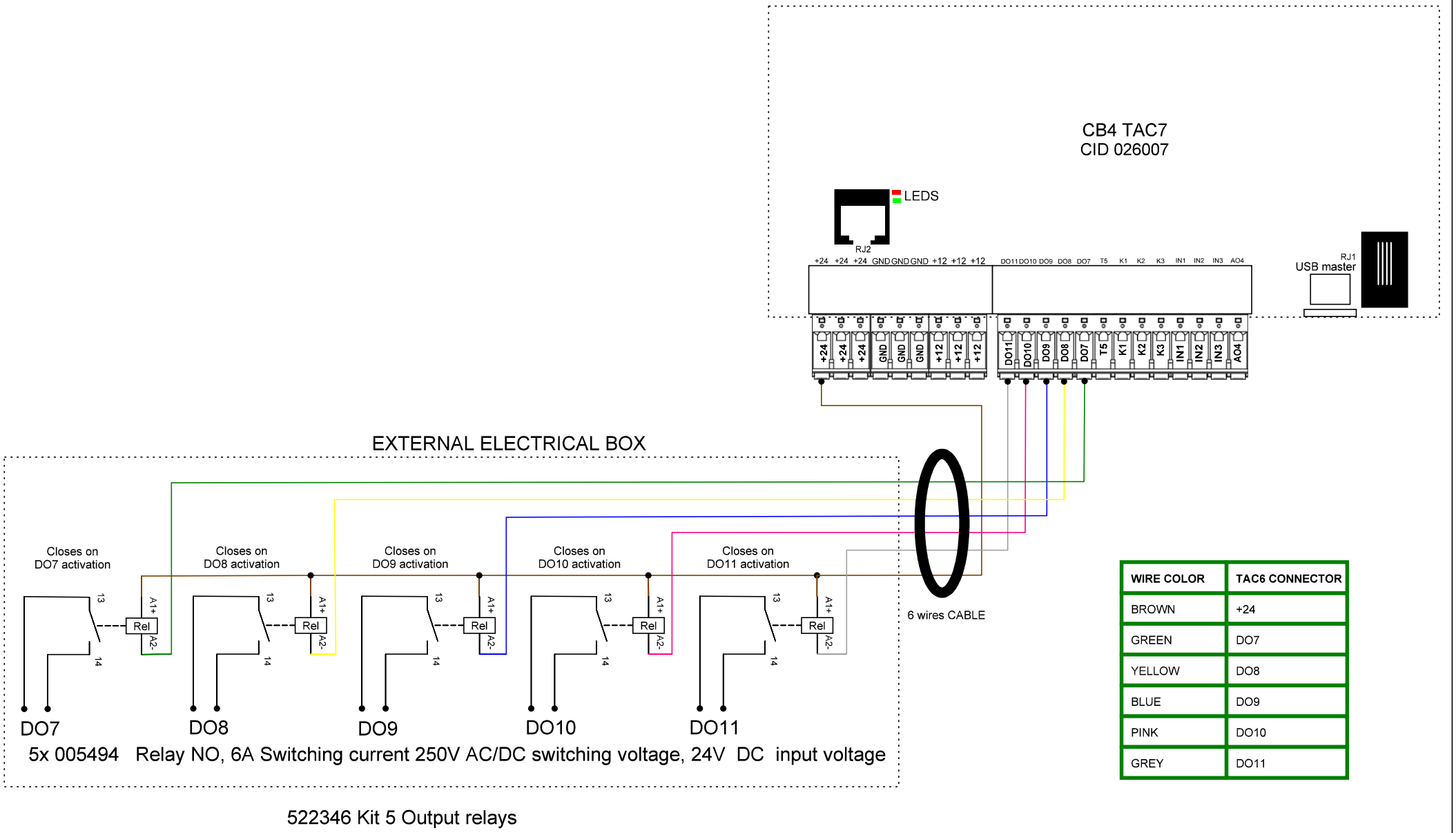

TAC7 Controller
RJ2
+24
+24
+24
GND
GND
GND
+12
+12
+12
DO11
DO10
DO9
DO8
DO7
T5
K1
K2
K3
IN1
IN2
IN3
AO4
K1
K2
K3
+12V
COM4

1	2	3	4	5	6	7	8	9	10	11	12	13	14



005494 Relais NO, 6A Switching current 250V AC/DC switching voltage, 24V DC input voltage

Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	04/10/2024		62
		check.:				
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Output Relay 1x	66



WIRE COLOR	TAC6 CONNECTOR
BROWN	+24
GREEN	DO7
YELLOW	DO8
BLUE	DO9
PINK	DO10
GREY	DO11

522346 Kit 5 Output relays

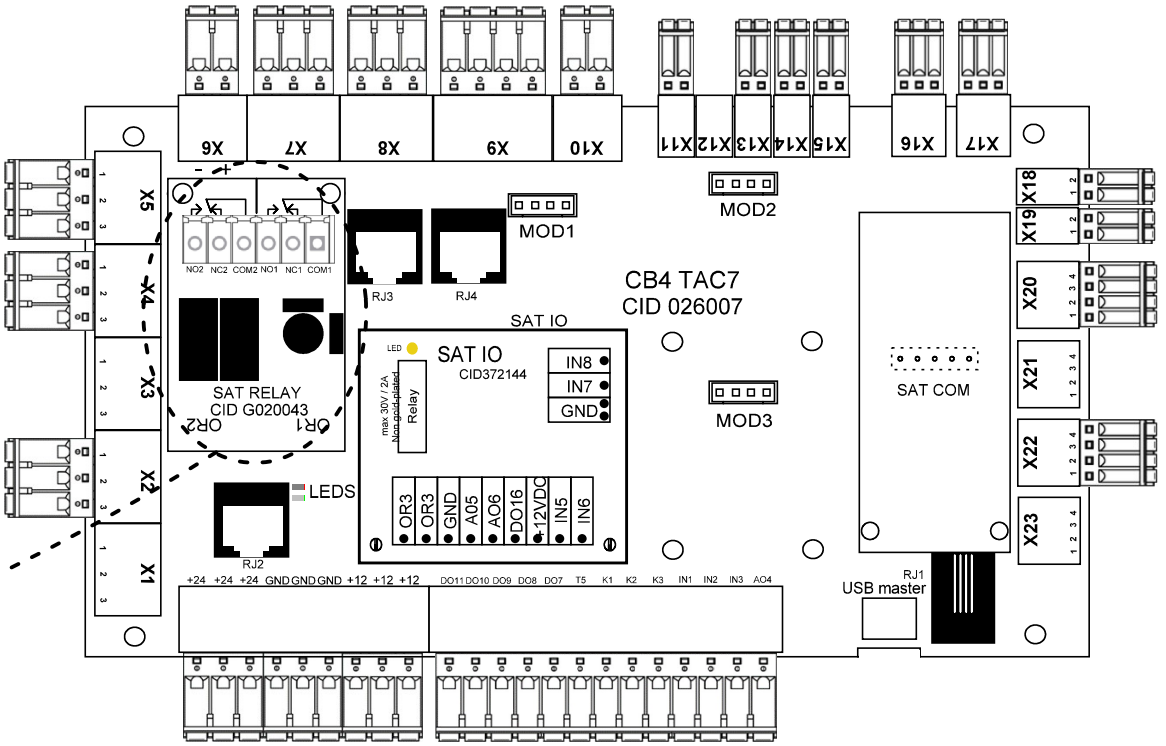
Changes			Name	Date	Configuration of function:	Page
Name	Date	Draw.:	ola	04/10/2024		63
		check.:				
		Norm:			Application:	of
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7				Output Relays 5x	66

1	2	3	4	5	6	7	8	9	10	11	12	13	14

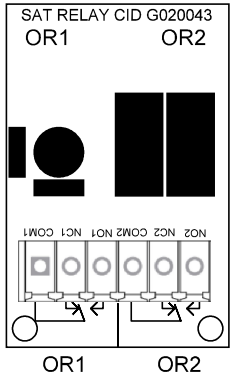
***SAT RELAY CONFIGURATION ONLY FOR NON LP MODELS**

Section Inputs/Outputs / Settings / Parameters:	
User Digital I/O Mapping	ON
Section Inputs/Outputs / User Digital I/O Mapping - Outputs/ Parameters:	

Select desired functions to be mapped on SAT RELAY OR1 or OR2:
- Circulator pump for hydraulic reheater/reversible (by default on DO7)
- Circulator pump for hydraulic cooler (by default on DO8)
- Default Alarm satus (by default on DO9)
- Pressure Alarm satus (by default on DO10)
- Fan On satus (by default on DO11)
- Bypass satus (by default on SAT IO OR3)
- Heat satus (by default unapped)
- Cool satus (by default unapped)
- Circulator pump for hydraulic preheater (by default unapped)



SAT RELAY plugged on TAC7 controller dedicated connector



Changes			Name	Date
Name	Date	Draw.:	msg	17/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
mandatory used for GLOBAL LP, then premounted and prewired – option for other models
SAT RELAY OR1 – relay SPDT (COM + NC/NO) – max 0,5A 30V DC
SAT RELAY OR2 – relay SPDT (COM + NC/NO) – max 0,5A 30V DC
See * here above for settings

Application:
SAT RELAY

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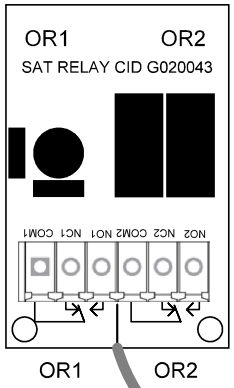
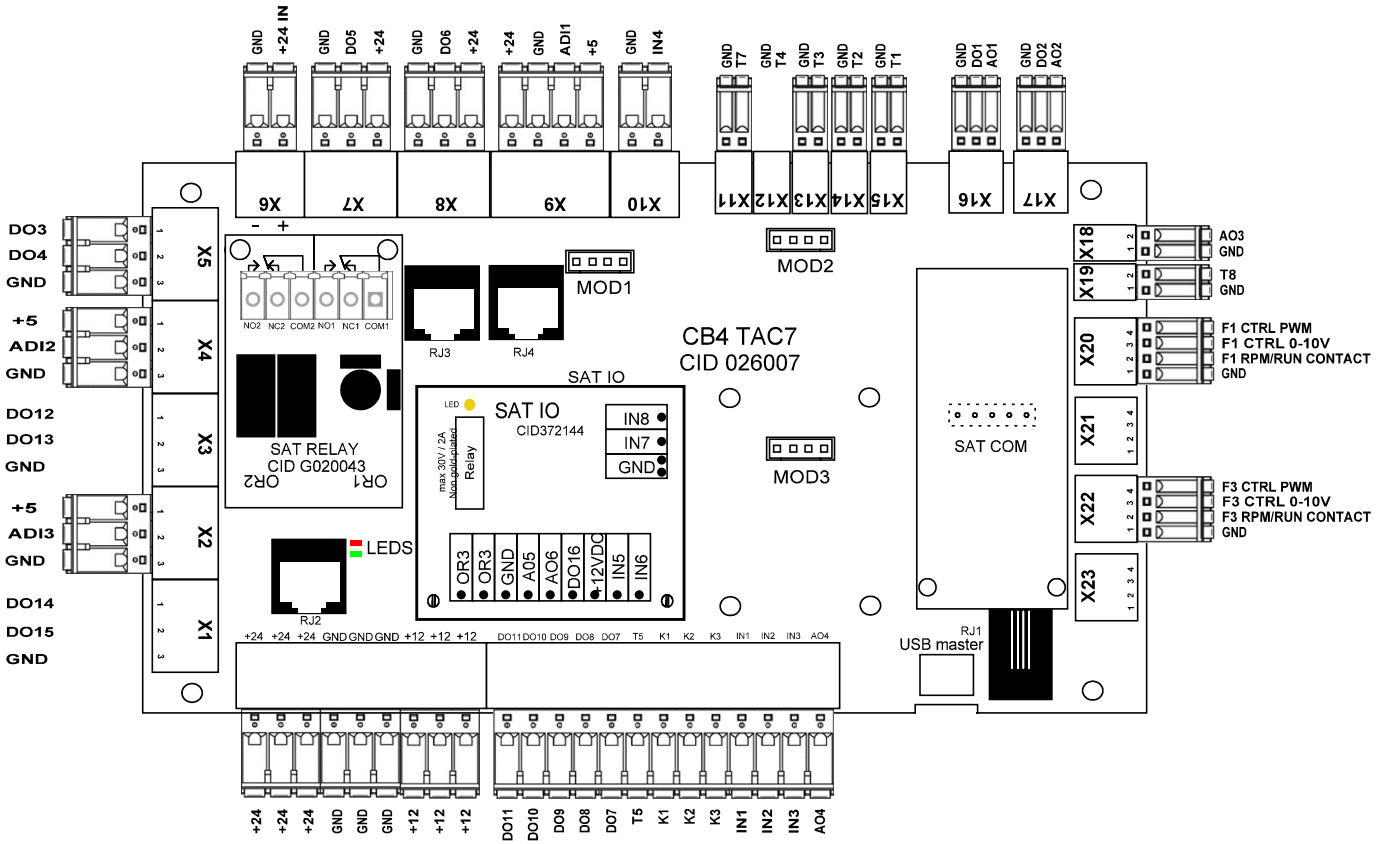
1	2	3	4	5	6	7	8	9	10	11	12	13	14

522697 KIT SAT RELAY:
SAT RELAY with preconnected cable mounted on its own support, in turn fixed with 2 autodrilling screws on main plate support near to the control board





Brown wires connected to +12V

White wire be connected to DO7...DO11 accordind to the desired output to have on free voltage contact on OR1

Green wire be connected to DO7...DO11 accordind to the desired output to have on free voltage contact on OR2

To insulate if not used

Changes			Name	Date
Name	Date	Draw.:	msg	17/10/2024
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
used for GLOBAL LP or when SAT RELAY already plugged on board
SAT RELAY OR1 – relay SPDT (COM + NC/NO) – max 0,5A 30V DC
SAT RELAY OR2 – relay SPDT (COM + NC/NO) – max 0,5A 30V DC
See * here above for settings

Application:
KIT SAT RELAY

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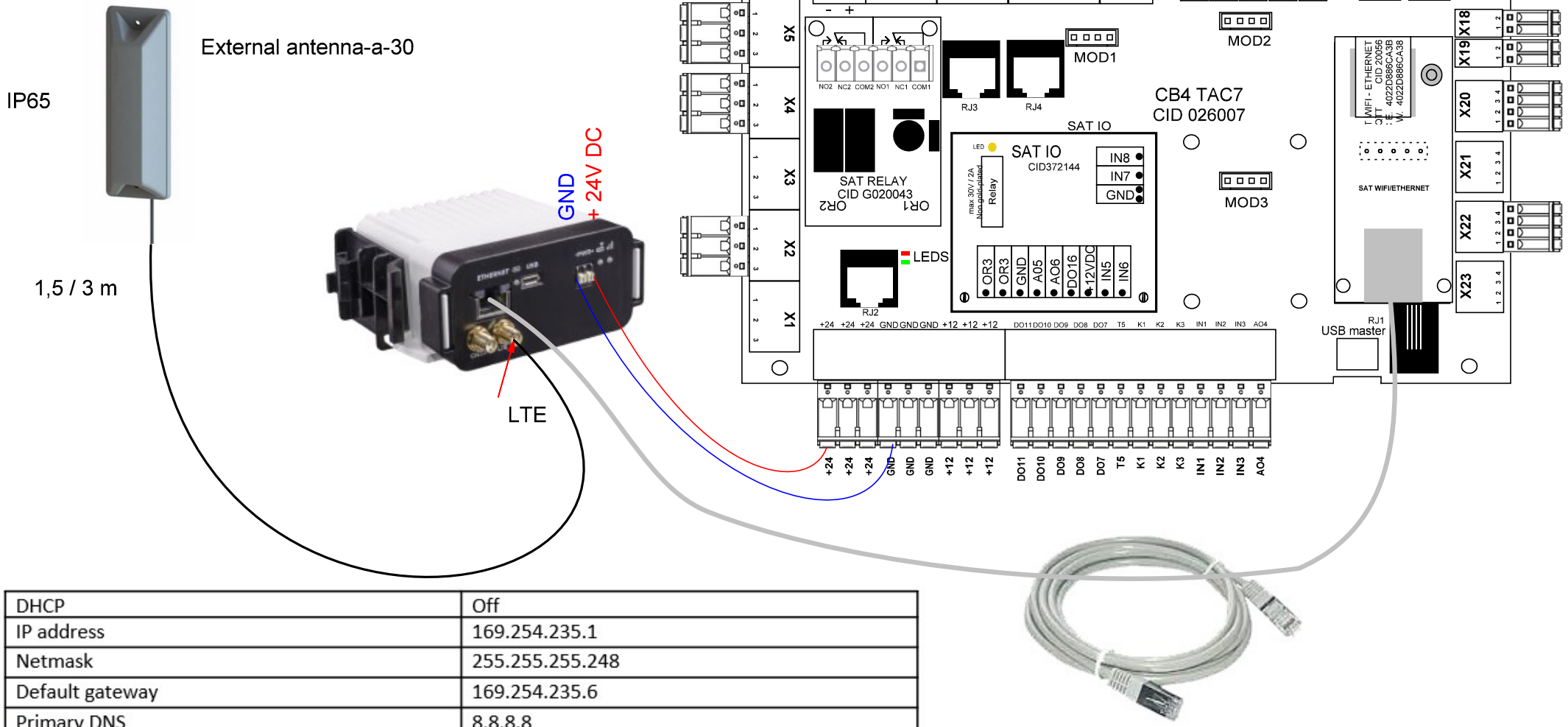
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Label	CID
INSIDE Connect, fitted in electrical cabinet	883819
INSIDE Connect, delivered loose (no PSU)	883820
INSIDE External antenna-a-15	883821
INSIDE External antenna-a-30	883822



DHCP	Off
IP address	169.254.235.1
Netmask	255.255.255.248
Default gateway	169.254.235.6
Primary DNS	8.8.8.8

Changes			Name	Date
Name	Date	Draw.:	msg	30/09/2025
		check.:		
		Norm:		
Subject:	GLOBAL_ESENSA_Wiring TAC7.spl7			

Configuration of function:
Function/Communication/Configuration of SAT LAN
See settings in table here above

Application:
Cloud

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