

OPERATION:

The unit can be controlled for up to three speeds according to the processor unit time schedule program.

At startup the extract air fan starts, with heat recovery at max, for an adjustable period of time before the supply fan starts. Subsequently the processing unit assumes control of the AHU. If the frequency converter malfunctions the unit stops and an alarm is initiated

Outdoor air damper ST1 opens at set time before start of the unit. When the unit stops or in the event of power failure, the outdoor air damper ST1 closes by spring return.

Exhaust air damper ST2 opens/closes in parallel with ST1.

ENERGY WATCH:

The heat exchanger's recovered energy, output and efficiency are shown in the hand-held terminal. The fans' supplied energy, power and SPF value is shown on the hand-held terminal. The air flow is measured and the density corrected. The heater coil's added energy and output is calculated and if a leaking valve is detected, an alarm is initiated.

All values can be read in DHC if applicable via modbus and BACnet.

TEMPERATURE CONTROL, ECO-2, Optimized energy control:

Temp. sensor GT2 maintains the extract air temperature by means of sequence control.

Temp. sensor GT1 sets the min and max limits of the supply air temp.

The extract air set point is outdoor temp. compensated according to a pre-defined curve. An alarm is initiated if the supply air temp. deviates from the estimated set point after set period of time.

SEQUENCE CONTROL:

TCHP cooling operations are controlled in sequence.

The compressor is power regulated with an increased cooling requirement.

The air volume is sequentially controlled. The quantity of air increases when cooling is needed.

Rotary heat exchanger is sequentially controlled. An alarm is initiated if a malfunction occurs.

TCHP heating operations are controlled in sequence.

The compressor is power regulated with an increased heating requirement.

At increasing heating requirement the airflow is increased to heighten the room temperature.

If the supply air set value can not be achieved the airflow increase is limited to avoid cooling down the room.

FLOW REGULATION:

Pressure sensors GP1 and GP2 maintain supply and exhaust airflow through the frequency inverters.

If air flow deviates from the setpoint value an alarm is initiated after preset time delay.

Actual supply and exhaust airflow value is displayed in the hand unit.

FILTER MONITORING:

The supply and exhaust air filter alarm limit is calculated for the current air flow, exceeded any of the alarm limits, an alarm is initiated.

FIRE:

When either supply or extract air sensor indicate a temperature above preset alarm limit, the alarm fire is initiated.

When fire alarm is initiated the unit is stopped.

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Envistar Flex

FUNCTIONAL DESCRIPTION

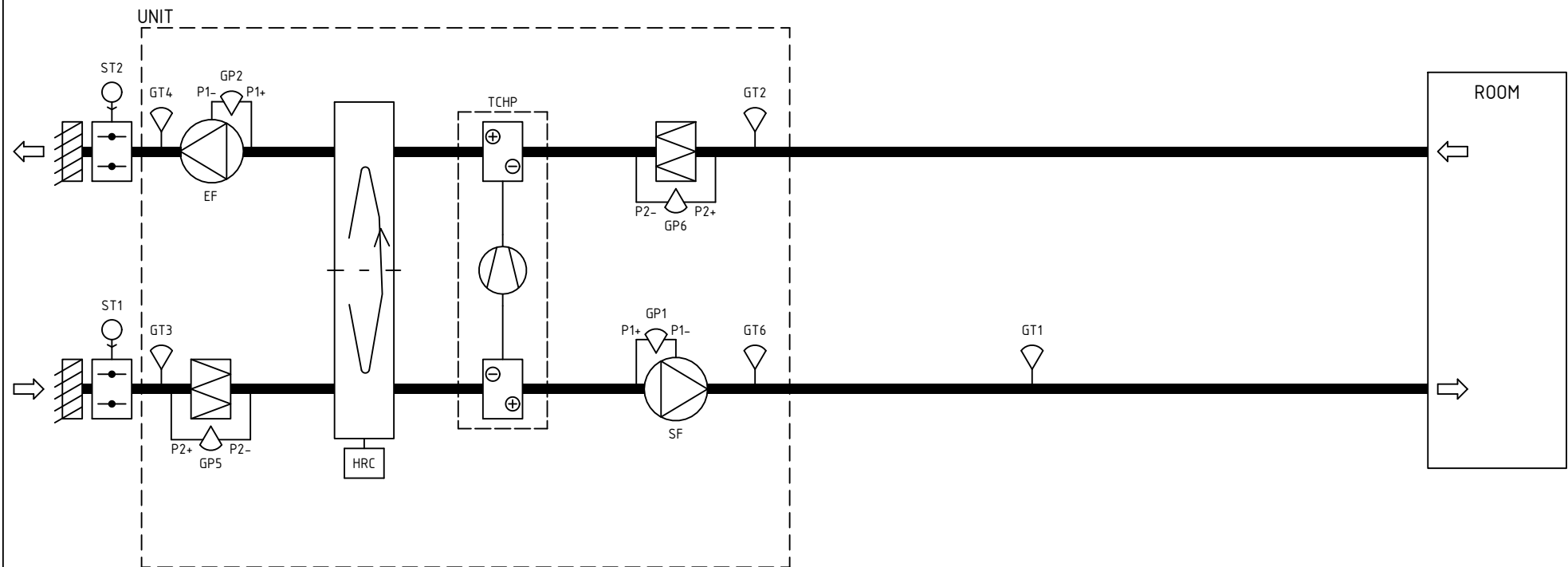
Spa at KSTH-R1

AHU/RF/01-No Attenuators-Integrated Heat Pump

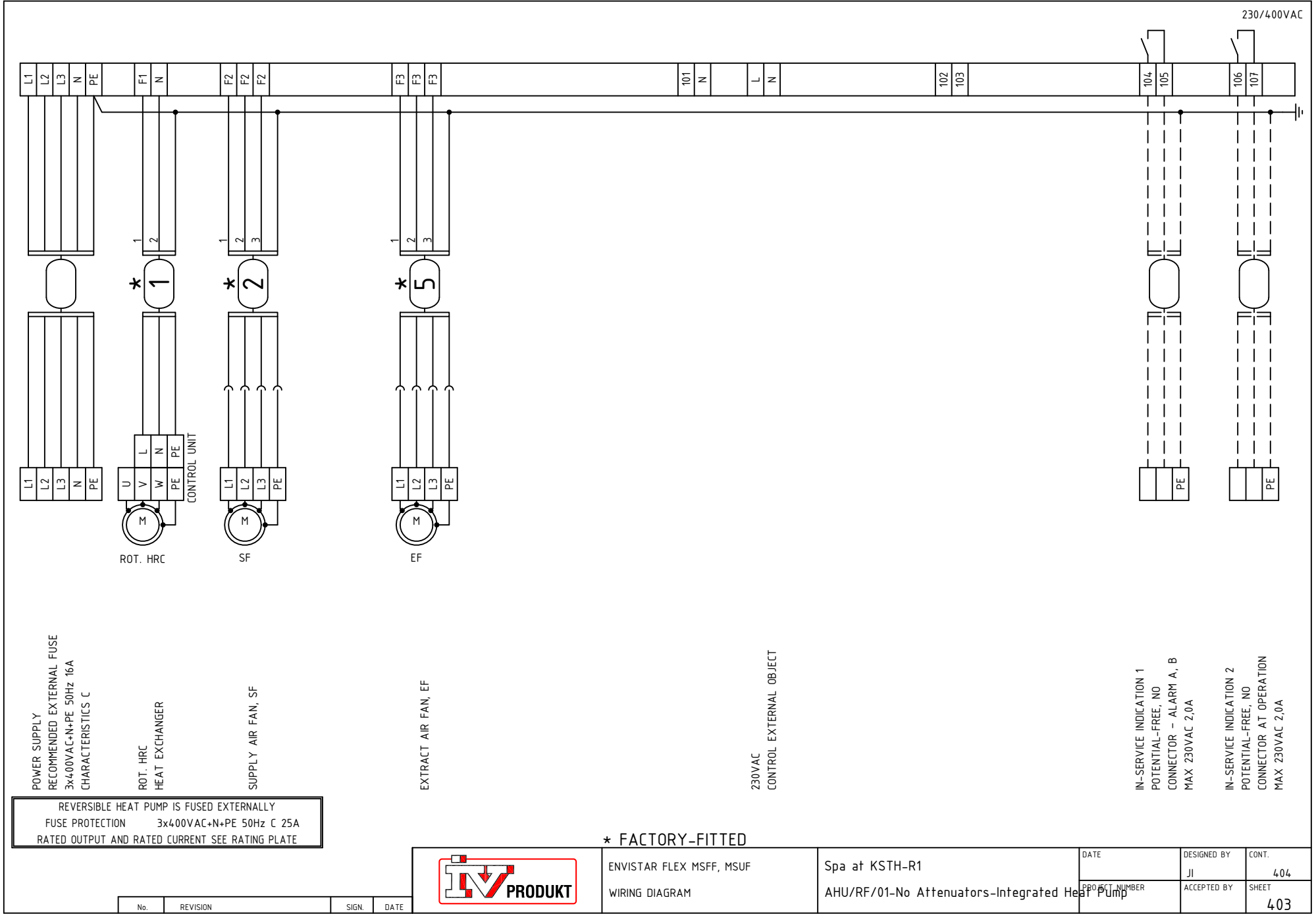
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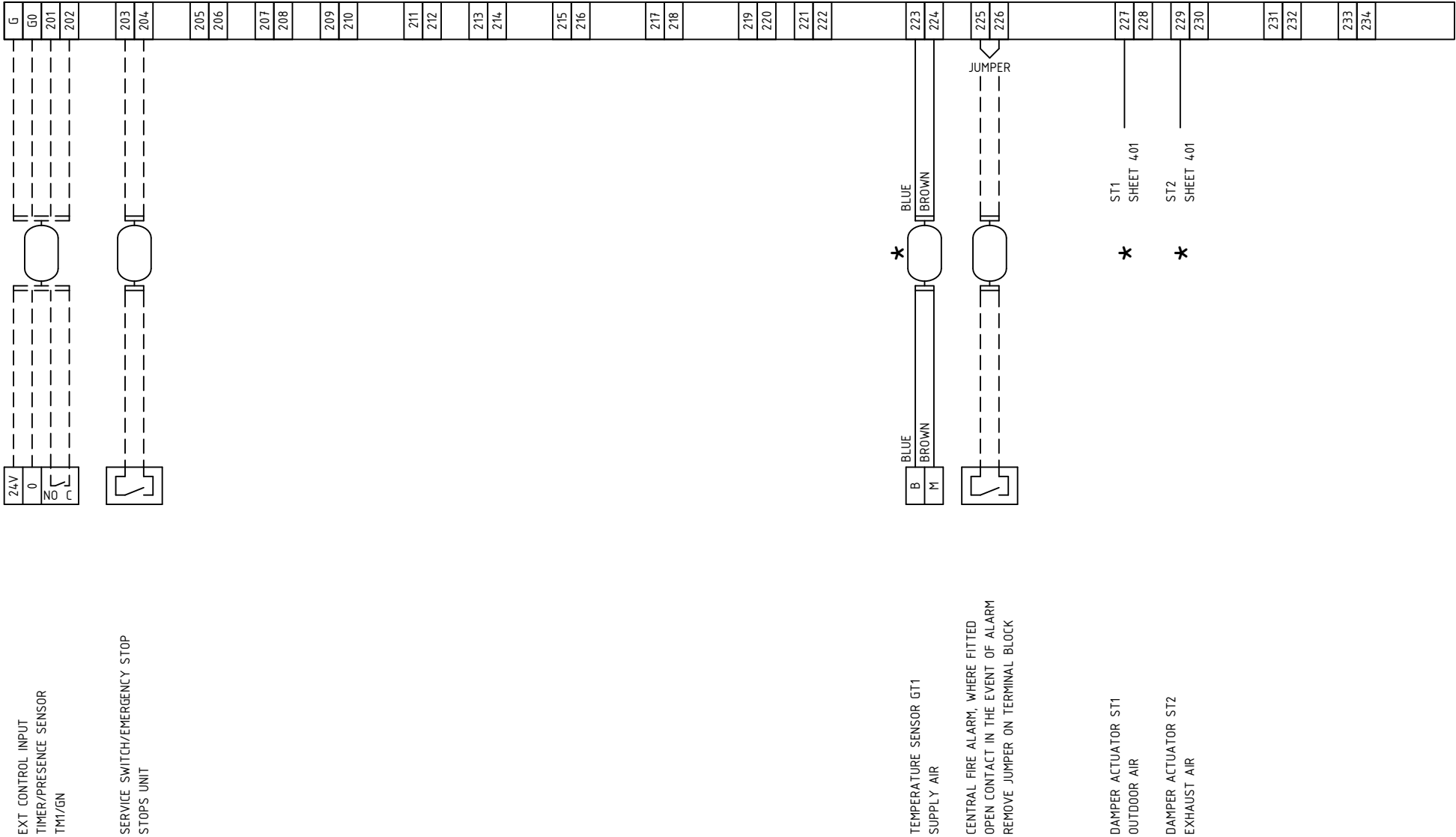
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POS	DESIGNATION	TYPE	MAKE	PART. NO.	POS	DESIGNATION	TYPE	MAKE	PART. NO.		
SF, EF	SUPPLY AIR FAN, EXTRACT AIR FAN	EC	EBM-PAPST	161775-00..	ST1	OUTDOOR AIR DAMPER ACTUATOR	GMA 121.1G	SIEMENS	18503-0011		
HRC	ROT. HRC	OJ-DRHX	OJ		ST2	EXHAUST AIR DAMPER ACTUATOR	GMA 121.1G	SIEMENS	18503-0011		
TCHP	THERMOCOOLER HP		IVP								
GT1	SUPPLY AIR SENSOR	QAM 9020.400	SIEMENS	18304-0003							
GT2	EXTRACT AIR SENSOR	QAZ 21.5240	SIEMENS	18305-0000							
GT3	OUTDOOR SENSOR	QAZ 21.5240	SIEMENS	18305-0000							
GT4	EXHAUST AIR SENSOR	QAZ 21.5240	SIEMENS	18305-0000							
GT6	SUPPLY AIR SENSOR HRC	QAZ 21.5240	SIEMENS	18305-0000							
GP1-2	PRESSURE SENSOR FLOW	QBM 69.2512/IVP	SIEMENS	18602-0050							
GP5-6	FILTER MONITOR	QBM 69.2512/IVP	SIEMENS	18602-0050							
No. REVISION SIGN. DATE				PRODUKT	ENVISTAR FLEX MSFF, MSUF FLOW CHART		Spa at KSTH-R1 AHU/RF/01-No Attenuators-Integrated Heat Pump		DATE	DESIGNED BY	CONT.
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* FACTORY-FITTED

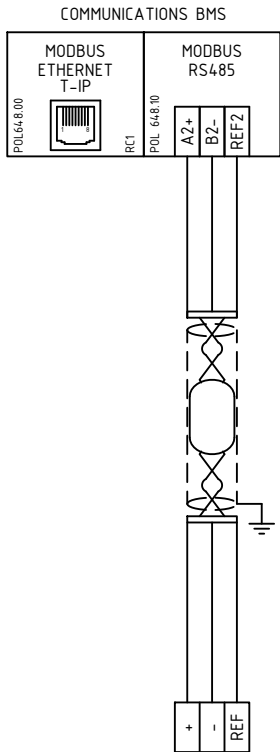


ENVISTAR FLEX MSFF, MSUF
WIRING DIAGRAM

Spa at KSTH-R1
AHU/RF/01-No Attenuators-Integrated Heat Pump

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PROJECT NUMBER	ACCEPTED BY	SHEET
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COMMUNICATIONS MODBUS TCP/IP
NETWORK CABLE RJ45 PLUG

COMMUNICATIONS MODBUS RS485
PAIR TWISTED CABLE WITH SHIELD

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ENVISTAR FLEX MSFF, MSUF
WIRING DIAGRAM

Spa at KSTH-R1
AHU/RF/01-No Attenuators-Integrated Heat Pump

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