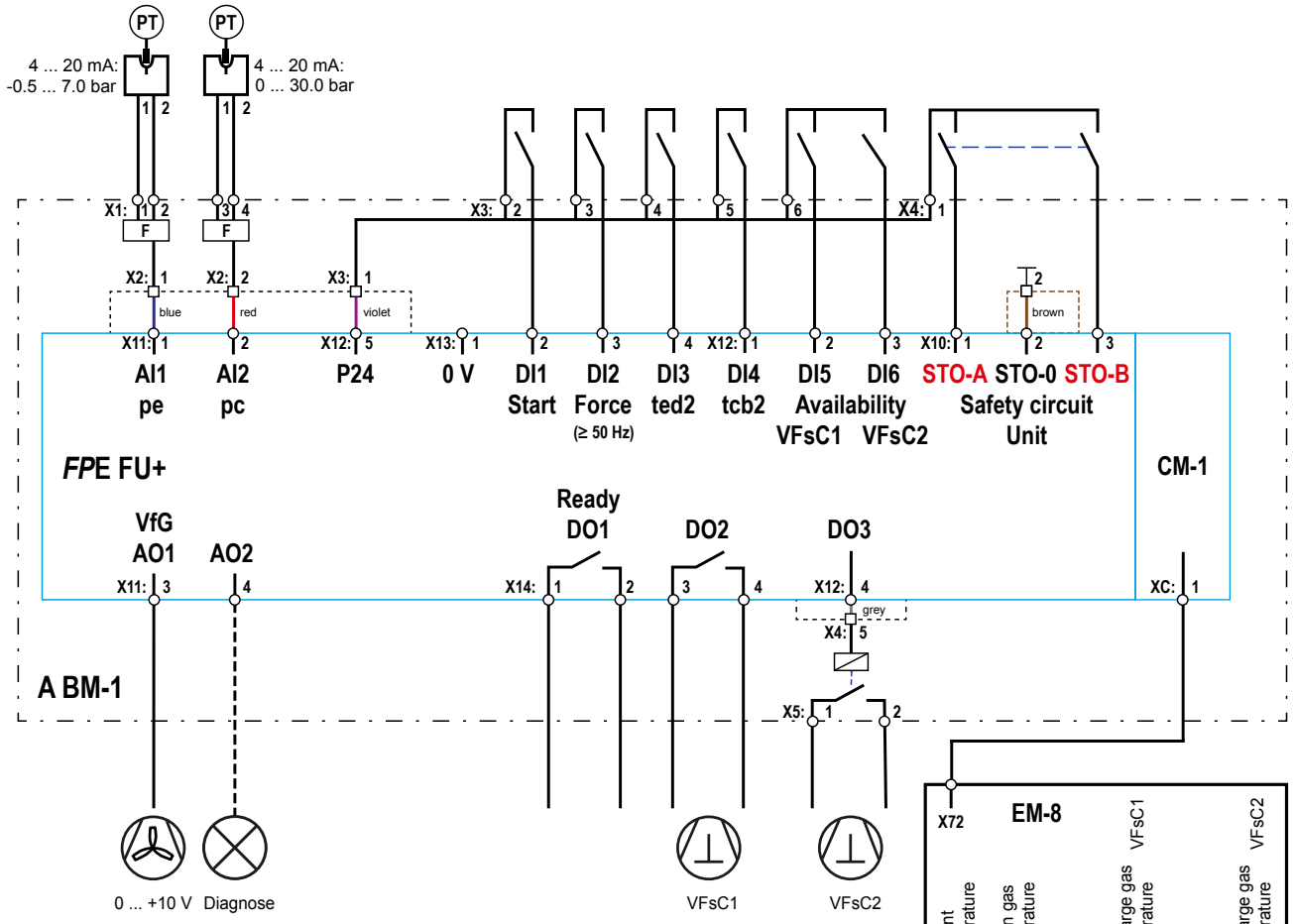
KIMO
RHVAC Controls

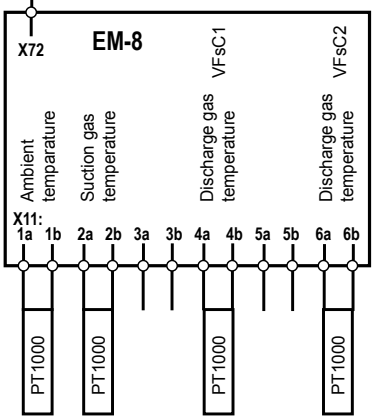
FrigoPack® E FU+S/12 Quick-Start Guide for E-FU-2BI control Refrigeration Inverters with integrated pressure control (FrigoSoft 1.7)

Warning: This is an abbreviated and customized version with recommendations for a first setup of this product. Please refer to the document "Planning Guide ***FrigoPack***® **E FU+/12**" for detailed information.

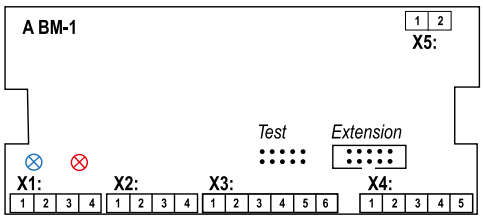
0. *FrigoPack*® E FU+S/12 Connections



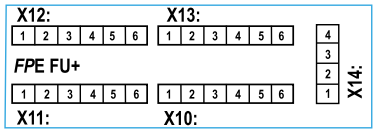
VFsC1 / VFsC2: Variable speed / fixed speed Compressor



Top:
Diagram of control connections of ***FrigoPack***® **E FU+S/12**



Bottom:
Terminal designations of ***FrigoPack***® **E FU+S/12** and base module BM-1



1. Basic information on first set-up

Ensure that all recommendations for compliance to mounting, electrical safety, EMC and UL regulations have been adhered to.

1.1 Pressure transmitters

Warning: Only use approved pressure transmitters!
This refrigeration application is preset for use with the following **Huba Control** pressure transducers:

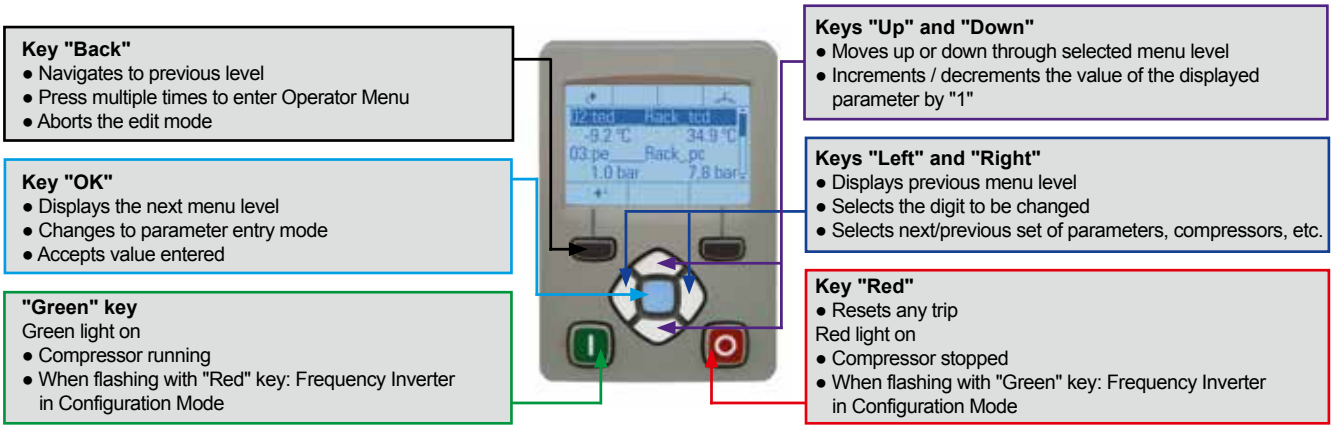
Low Pressure pe: -0.5 … 7.0 bar A REFR-P-TRANSD-LP7N+PL	**High Pressure** pc: 0 … 30 bar A REFR-P-TRANSD-HP30N+PL

For alternative pressure transmitters and pressure ranges refer to Parameter SP0, p. 6 of Planning Guide.

1.2 Recommendations

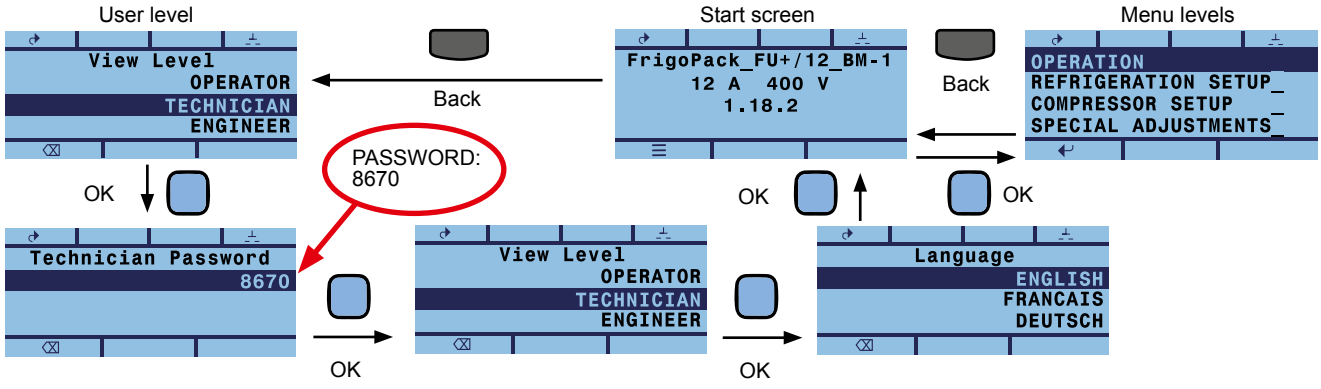
- It is important to ensure that an interlocked contactor is fitted between the Refrigeration Inverter and the compressor if a parallel bypass connection is used.
- In particular ensure that two isolated contacts of a relay are connected to the Safe-Torque-Off inputs of ***FrigoPack*® FU+** Refrigeration Inverter: STO-A (Terminal X10:1) / STO-B (Terminal X10.3).
- Remove start command (cable to terminal X13:2)
- Connect main power supply
- Verify that the blue LED for suction pressure lights on module BM-1. If not, then check if the wiring of the pressure transmitter is correct.
- If a discharge pressure transmitter is used, then verify that the red LED lights on module BM-1. If not, then check if the wiring of the pressure transmitter is correct.
- Measure the pressures with a refrigeration pressure gauge. Verify that the pressures indicated in menu OPERATION at parameter 03: pe_RACK_pc agree with these external measurements.

1.3 Keypad functionality



1.4 Menus - Selection of user level for first set-up

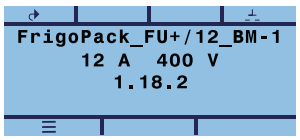
To start commissioning, the user level TECHNICIAN must be enabled. The steps shown below have to be followed. Press key "Back" several times to access the menu "View Level".
Password for user level TECHNICIAN: **8670**. The level is then activated for 10 minutes.



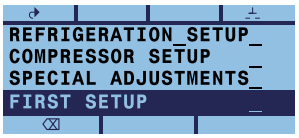
2. First set-up

2.1 Selection of refrigerant and Variable-speed Compressor (VsC)

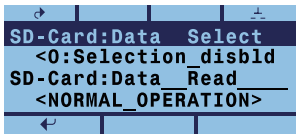
For setting up this inverter it is first of all necessary to select the refrigerant and Variable-speed Compressor (VsC1) used. Compressor selection is made in several steps: Manufacturer, type (e.g. semihermetic piston comp.), number of cylinders, motor connection, compressor ID.



Start screen
Line 1: FU+ Features
Line 2: I_{Rated}, U_{Rated}
Line 3: Firmware version
Line 4: IP address (optional)



Menu First Setup:
Selection of refrigerant and Variable-speed Compressor (VsC)

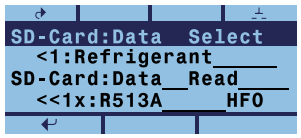


Access to SD memory card

Currently active: "Selection disabled"

Selection of refrigerant

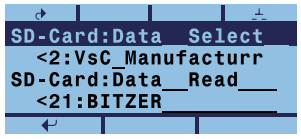
Next refrigerant



Previous refrigerant

Selection of manufacturer

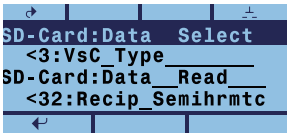
Next manufacturer



Previous manufacturer

Selection of type

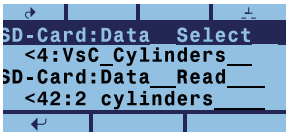
Next type



Previous type

Select number of cylinders

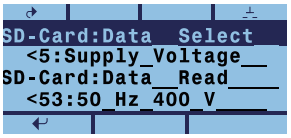
More cylinders



Less cylinders

Selection of motor connection

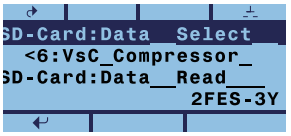
Next connection



Previous connection

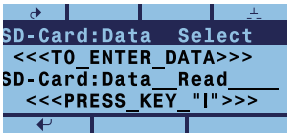
Selection of compressor

Next compressor



Previous compressor

Finish setup

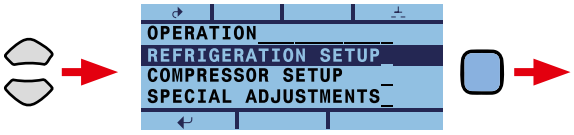


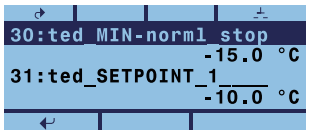
Press green key for 2 s to confirm setup.

After pressing the green key for 2 s menu "First Setup" can be left with the "Back" key.

2.2 Entering Setpoints

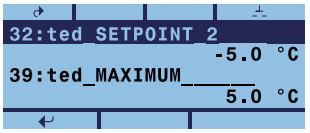
Select menu "REFRIGERATION SETUP" for entering setpoints. Use keys as described in 2.1 for setting the relevant parameters. **Most important parameters are:**





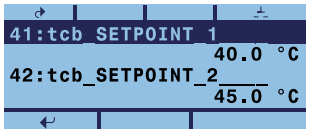
Parameter 30:
"Pump-Down Limit"
The frequency inverter stops the compressor below this value.

Parameter 31:
Setpoint 1 for the evaporation temperature



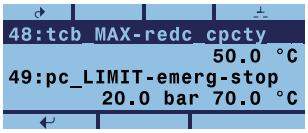
Parameter 32:
A second setpoint for the evaporation temperature can be set here.

Parameter 39:
The maximum evaporation temperature is set here. The frequency inverter reduces the capacity, if this value is exceeded. This value should be approximately 15 K above "setpoint 1".



Parameter 41:
Setpoint 1 for the condensing temperature

Parameter 42:
A second setpoint for the condensing temperature can be set here.



Parameter 48:
The maximum condensing temperature is set here. The frequency inverter reduces the capacity, if this value is exceeded. Preset to 50 °C.

Parameter 49:
The maxiumum condesing pressure is set here. The frequency inverter stops with an error, if this value is exceeded.

Please contact our applications team for any questions in planning or commissioning under
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For automatic operation enable start signal by connecting cable to terminal X13:2.

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