

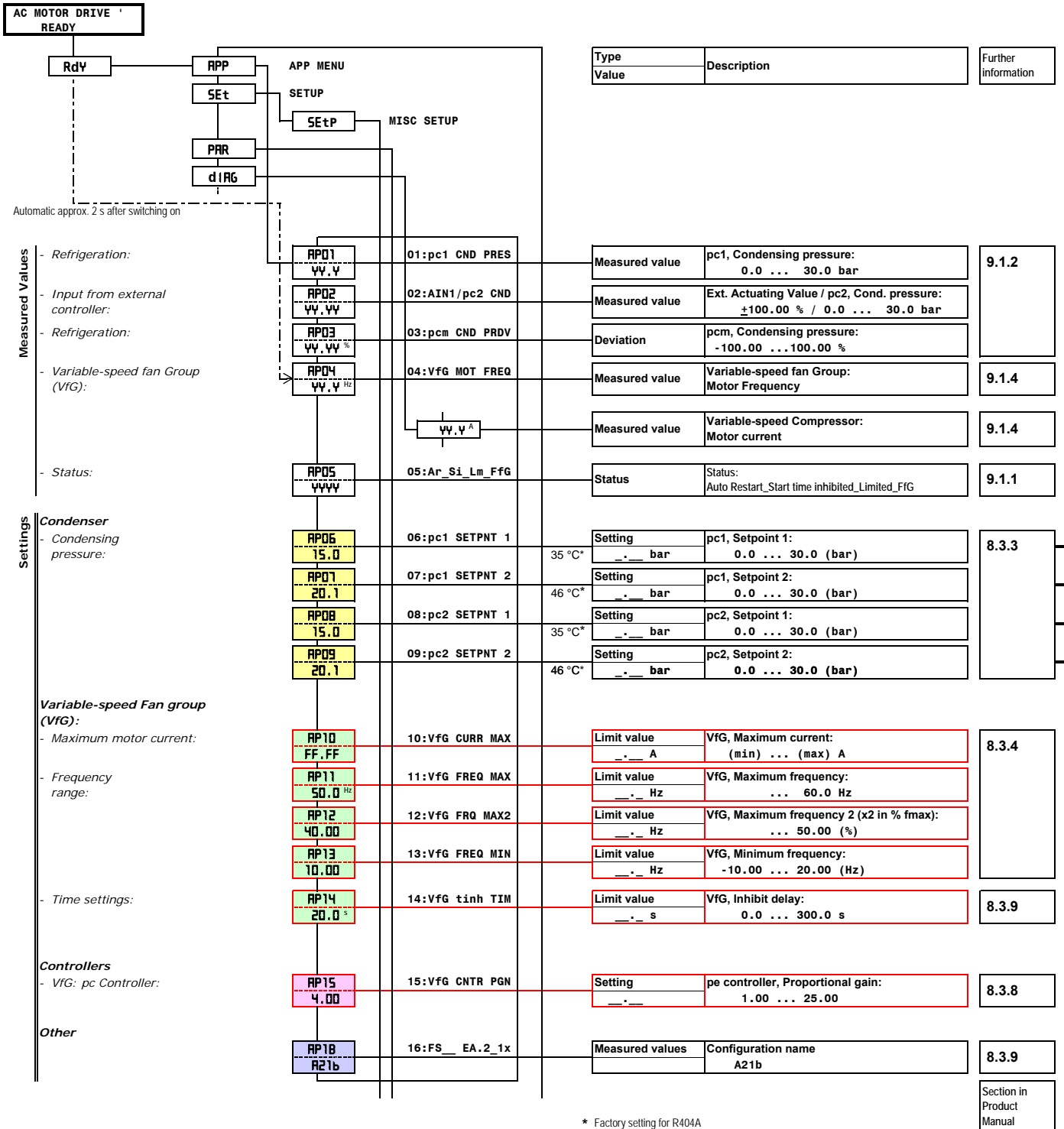
PARAMETERS

CP FMV1( / iSE CCF.M1( FrigoSoft EA

COND

FS EA.2\_1b

PARAMETERS



\* Factory setting for R404A

Password required (Please enquire)

Abbreviations	
VfG:	Variable-speed fan group (Condenser / Dry cooler)
FfG:	Fixed-speed Fans (Condenser / Dry cooler)
YYY.Y %:	Measured value depending on operating point
FF.F %:	Factory default value depending on frame size and rated power

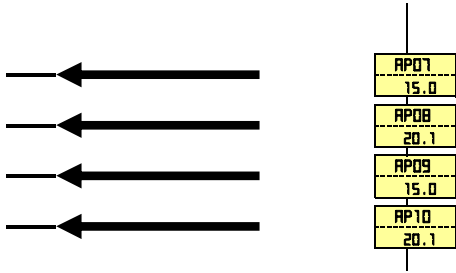
(min): Minimum value is 50 % of the maximum rated current of frequency inverter

(max): Maximum value is the maximum rated current of the frequency inverter

**Suggested refrigeration settings:**

Based on EN 12900

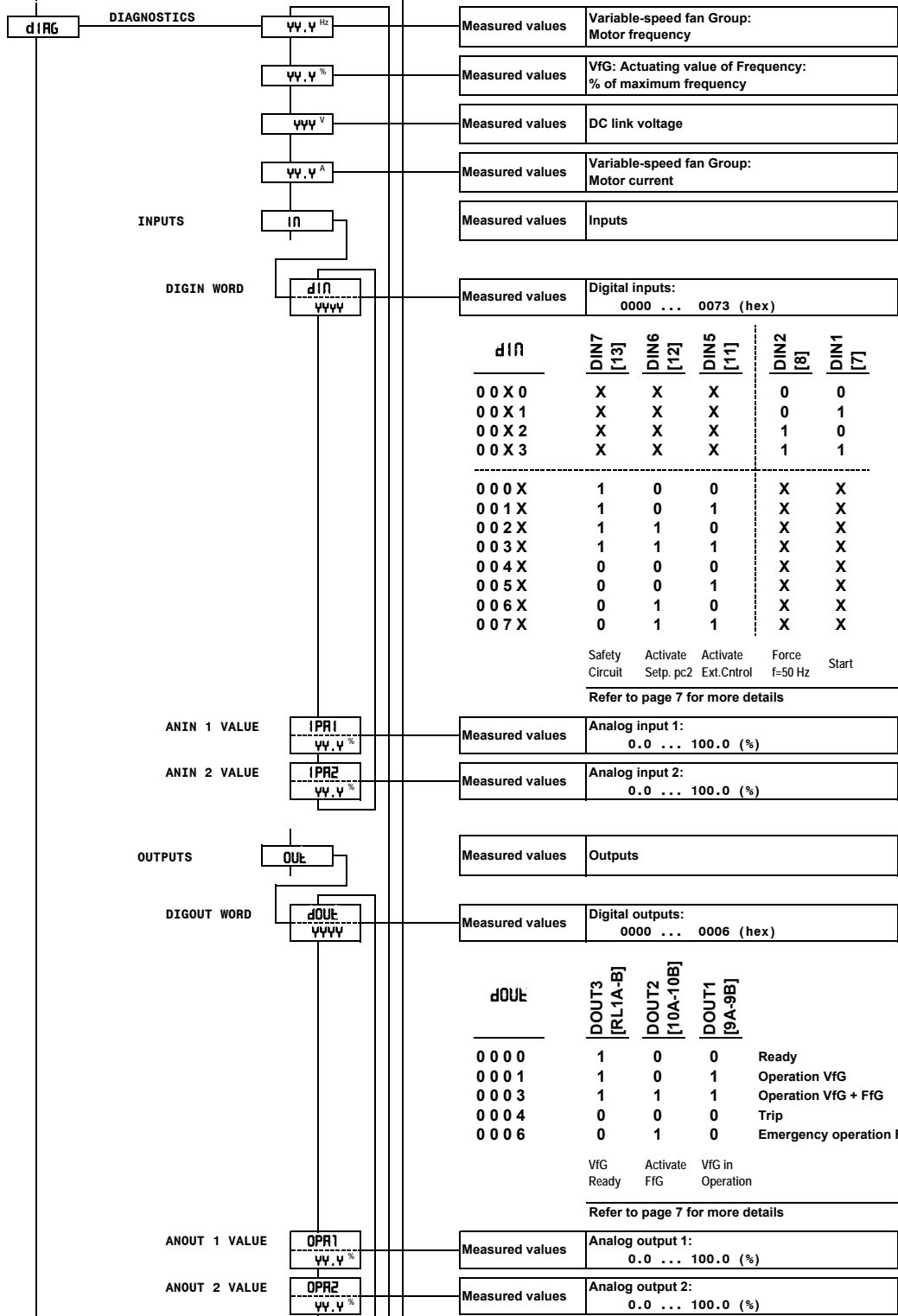
**PARAMETERS**

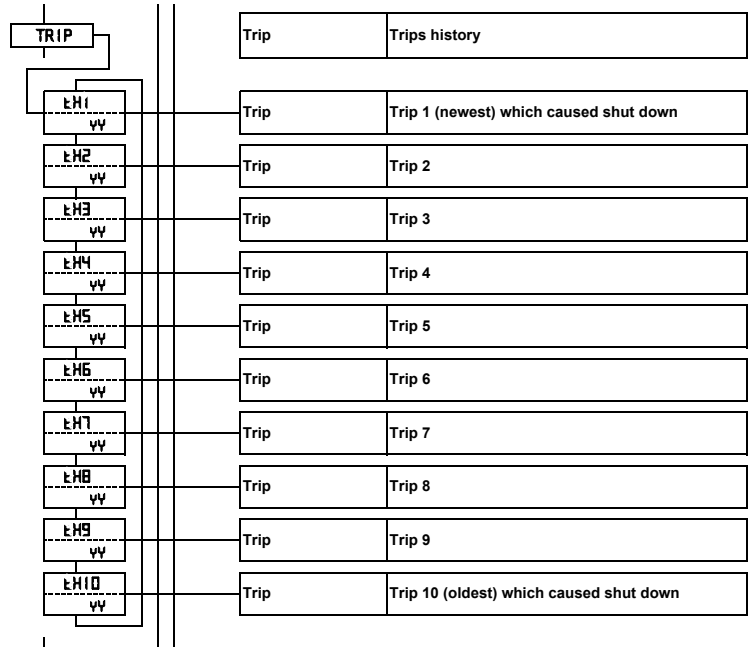


**Factory setting**

R404A / R507			R407C			R22			R134a		
LT	MT	HT	MT	HT	LT	MT	HT	MT	HT	MT	HT
35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C
15.0	15.0	15.0	14.5	14.5	12.5	12.5	12.5	8.0	8.0	8.0	8.0
46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	-10 °C	5 °C	5 °C
20.1	20.1	20.1	19.2	19.2	16.7	16.7	16.7	10.9	10.9	10.9	10.9
35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C	35. °C
15.0	15.0	15.0	14.5	14.5	12.5	12.5	12.5	8.0	8.0	8.0	8.0
46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	46 °C	-10 °C	5 °C	5 °C
20.1	20.1	20.1	19.2	19.2	16.7	16.7	16.7	10.9	10.9	10.9	10.9

Diagnostics





Trip coding. Refer to page 10 for more details.

- 1: OVERVOLTAGE
- 2: UNDERVOLTAGE
- 3: OVERCURRENT
- 5: EXTERNAL TRIP
- 6: INVERSE TIME
- 7: CURRENT LOOP
- 17: MOTOR OVERTEMP
- 24: DESAT (OVER I)
- nn: OTHER

**Variable-speed Fan group (VfG):**

- Frequency range:

- Resonance avoidance:

**Controllers**

- Condensing pressure:

**Other settings**

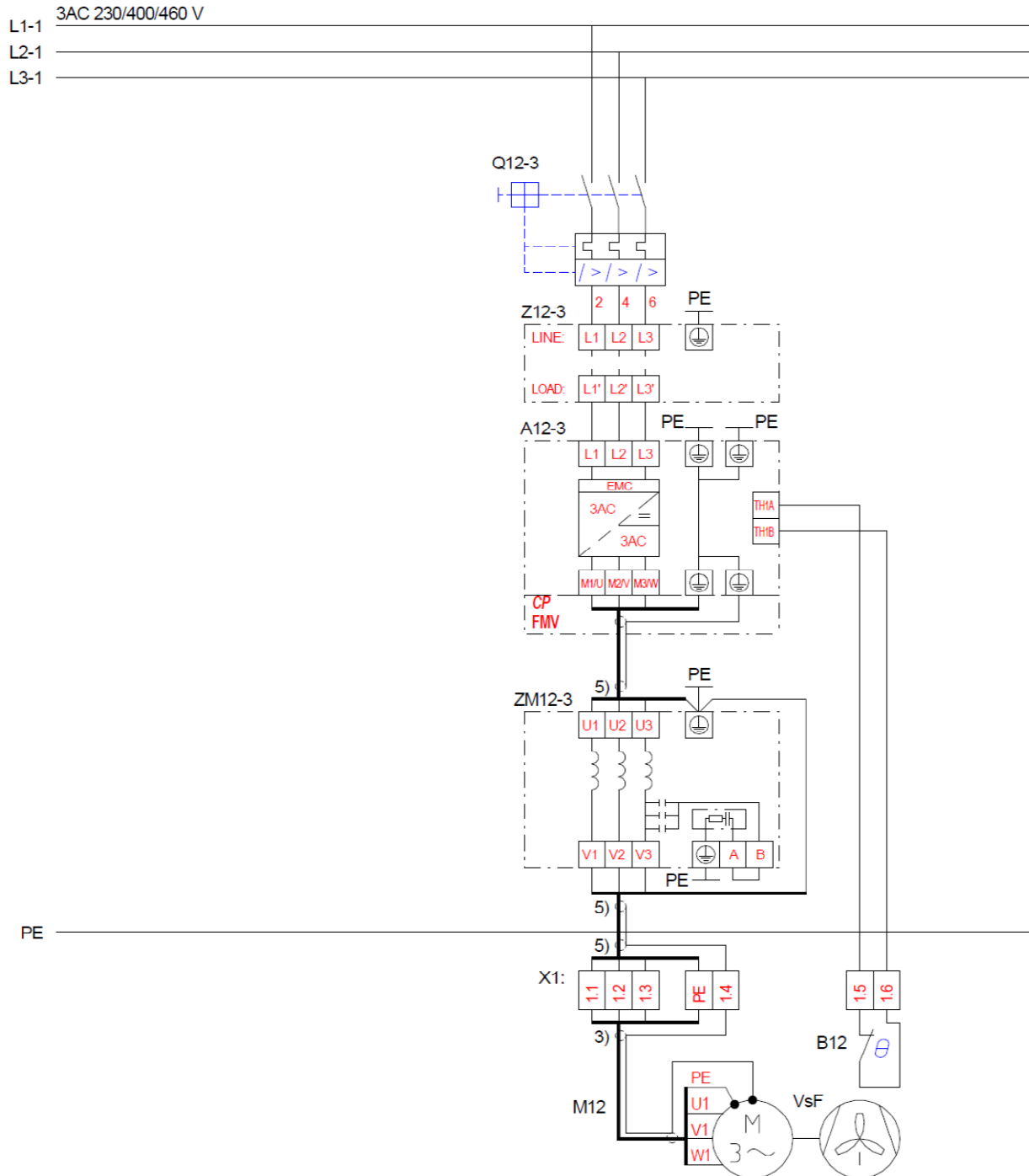
P 7	BASE FREQUENCY	Setting	VfG: Motor base frequency
55.0	Hz	__._ Hz	20.0 ... 60.0 Hz
SE11	SKIP FREQ 1	Setting	VfG, Skip frequency:
0.0	Hz	__._ Hz	20.0 ... 120.0 Hz
SE12	SKIP FREQ 1 BAND	Setting	VfG, Skip frequency band:
0.0	Hz	__._ Hz	0.0 ... 10.0 Hz
SE01	JOG ACCEL TIME	Setting	pc controller, Integral gain:
0.2	s	__._	0.0 ... 0.5 (e)
SE02	JOG DECEL TIME	Setting	PID trimm:
5.0	s	__._ (%)	0.0 ... 10.0 (e)
P 0	JOG SETPOINT	Setting	Mode of operation:
0.0	%	__._ %	0.0 ... 3.0 %

	Refrigeration circuits	Operation at fmin
0.0 %:	Single	Stop
1.0 %:	Single	Continue
2.0 %:	Twin	Stop
3.0 %:	Twin	Continue

Password required (Please enquire)

## POWER SECTION

### Power connections



ZM12-3: Special motor filter for certain fan motors (e.g. Ziehl-Abegg, EBM) to protect the motor winding and bearings  
Verdrahtung des Leistungsteils

CP FMV / iSE CCF.M:  
Power wiring

## Power terminals

Terminal / Designation	Signal / Function	Explanation	Further information
PE, PE	Protective earth connections (both to be earthed)	- Observe all safety and EMC requirements	7.7.1
L1	Three phases of voltage supply	- Ensure that supply voltage agrees with data on CondensPack / iSpeed CFF name plate	
L2/N			
L3			
DC+		- Do not use otherwise risk of damage to CondensPack / iSpeed CFF	
DBR			
(DC-)			
M1/U	Fan motors or motor filter		7.7.1/
M2/V			7.7.2
M3/W			
PE	#NV		7.7.2
(DBR+)		- Do not use otherwise risk of damage to CondensPack / iSpeed CFF	
(DBR-)			

POWER SECTION

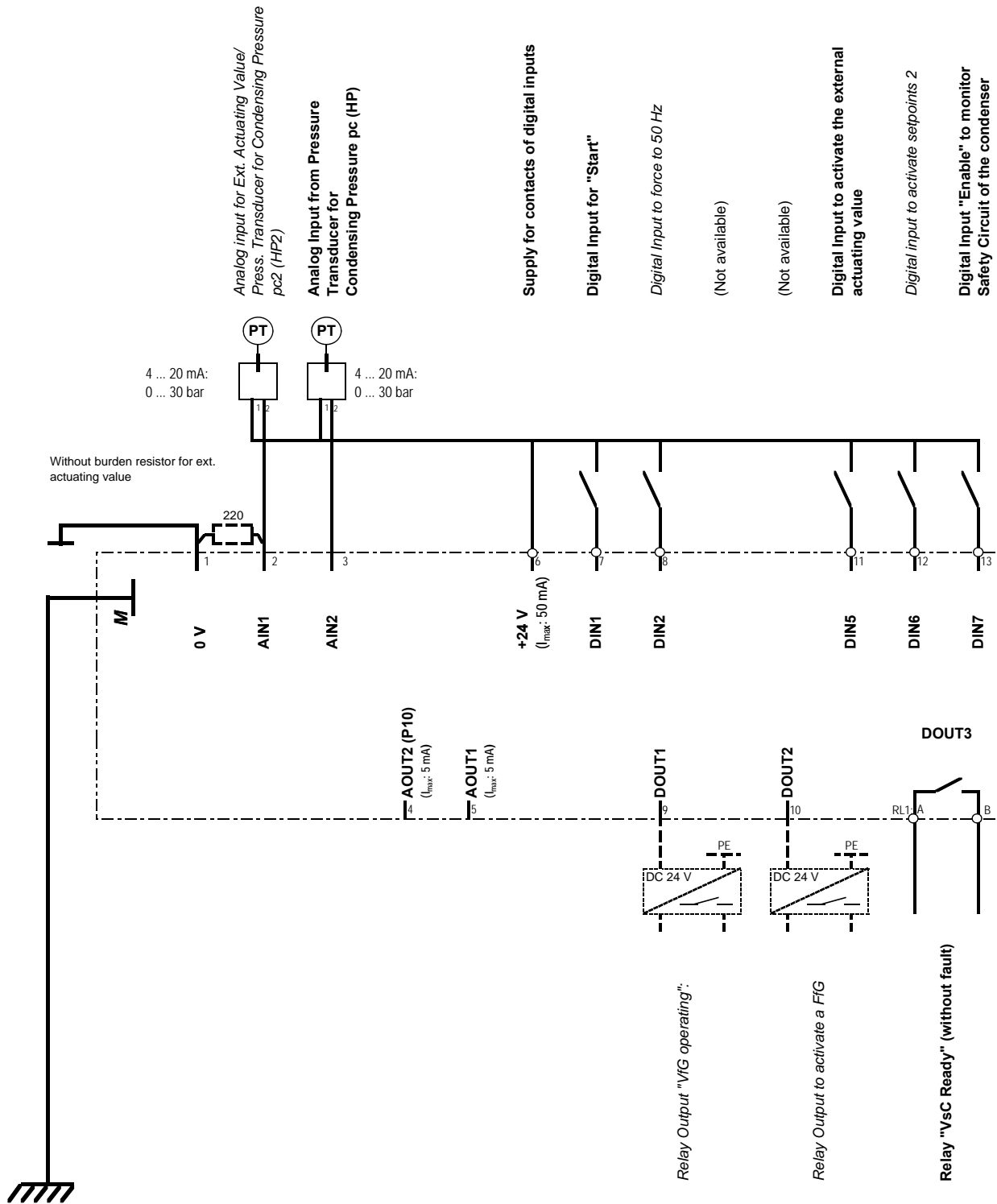
## Terminals for motor protection

Terminal / Designation	Signal / Function	Explanation	Further information
<b>X2:</b>			
FPE 1.5...7.5FMV- EMC: T H 1A - T H 1 B	Alternative a), Without processing:	- Thermistor protection is processed in safety circuit, these two terminals must be linked	6.2
	Alternative b), Direct processing of motor thermistors:	- Connect motor thermistors between these two terminals	
	Alternative c), Processing an external thermistor relay:	- Connect the "normally open" contacts of external thermistor relay (e.g. KRIWAN) between these two terminals	
	Alternative d), Processing an external thermistor relay:	- Connect the "Normally open" contacts of an auxiliary relay wired to an external thermistor relay (e.g. KRIWAN) between these two terminals.	

# CONTROL SECTION

## Control connections

CONTROL SECTION



Analog input for Ext. Actuating Value/  
Press. Transducer for Condensing Pressure  
pc2 (HP2)

Analog Input from Pressure  
Transducer for  
Condensing Pressure pc (HP)

Supply for contacts of digital inputs

Digital Input for "Start"

Digital Input to force to 50 Hz

(Not available)

(Not available)

Digital Input to activate the external  
actuating value

Digital input to activate setpoints 2

Digital Input "Enable" to monitor  
Safety Circuit of the condenser

VfG: Variable-speed fan group (Condenser / Dry cooler).

FfG: Fixed-speed Fan group

## Terminals for control functions

Terminal / Designation	Signal / Function	Explanation	Further information
1	0 V	Ground for analog signals	- Not available
2	<b>AIN1</b> <i>Analog input for Ext. Actuating Value/ Press. Transducer for Condensing Pressure pc2 (HP2):</i> 0 V: 0.0 % 10 V: 100.0 % Max. speed	- <i>Ext. actuating value (without burden resistor)</i>	7.7.4
		0 mA: Fault 4 mA: 0.0 bar 20 mA: +30.0 bar	
3	<b>AIN2</b> <b>Analog Input from Pressure Transducer for Condensing Pressure pc (HP):</b> 0 mA: Fault 4 mA: -0.5 bar 20 mA: +7.0 bar	- Condensing Pressure pc  - Suitable pressure transducer, Connection: - A REFR-P-TRANSD-HP30+PL, Terminal: 2	7.7.4
4	P10	Internal +10 V reference	- Do not use
5	AOUT1	Analog output:	- Do not use
6	+24 V	Supply for contacts of digital inputs	- Not available
7	<b>DIN1</b> <b>Digital Input for "Start":</b>  0 V: Controlled stop +24 V: Start	- Start	5.2.1-3, 7.7.3
8	<b>DIN2</b> <i>Digital Input to force to 50 Hz:</i>  0 V: No action +24 V: Activated	- Force to 50 Hz  - Optional use	5.2.2/3, 7.7.3
9	DIN3	Digital Input	- Not available
	DOUT1	Relay Output "VfG operating":  Open: VsC: Inhibited / Not operating Closed: VsC: Starting / Operating	- VfG operating  - An external relay with a DC 24 V low-current coil (<= 50 mA) is required
10	DIN4	Digital Input	- Not available
	DOUT2	Relay Output to activate a FfG:  Open: Not activated Closed: Activated	- Activate FfG - Optional use - An external relay with a DC 24 V low-current coil (<= 50 mA) is required AC 230 V; 250 VA
11	<b>DIN5</b> <b>Digital Input to activate the external actuating value:</b>  0 V: No action +24 V: Activate External Actuating Value	- Activate External Actuating Value	
12	<b>DIN6</b> <b>Digital input to activate setpoints 2:</b>  0 V: No action +24 V: Activate setpoints 2	- Activate setpoints 2  - Optional use	5.3, 7.7.3
13P - 13	<b>DIN7</b> <b>Digital Input "Enable" to monitor Safety Circuit of the condenser:</b> 0 V: Fault (immediate stop) +24 V: Without fault	- Safety circuit without fault - Must be used - Interrupt if there is a fault (Required to stop inverter operation)	5.4, 7.7.3
RL 1A - RL 1B	<b>DOUT3</b> <b>Relay output "Ready" (without fault):</b> Open: No supply, fault or alarm Closed: Ready (no fault)	- Ready to operate  - Max contact load: AC 230 V; 250 VA	5.4, 7.7.3

**VfG:** Variable-speed fan group (Condenser / Dry cooler).  
**FfG:** Fixed-speed Fan group

## Safety and control circuits

Reserved for later use



## FIRST TIME POWER UP

Mounting and electrical safety:	Ensure that all recommendations in the Product Manual have been adhered to.			
UL compliance where appropriate:	Ensure that all recommendations in the Product Manual for UL compliance have been adhered to.			
EMC compliance:	Ensure that all recommendations in the Product Manual for EMC compliance have been adhered to.			
Language selection:	The language is only relevant when the two-line keypad from the FP(E) FEP / iSE/P RCF ranges are used for commissioning. The language is programmed in the refrigeration software and cannot be changed. The language required must be stated at the time of purchase.			
Selection of this refrigeration application, Restoring factory settings:	<ul style="list-style-type: none"><li>- This refrigeration application is programmed in the refrigeration application software.</li><li>- On no account attempt to load the default factory settings as this will result in the refrigeration application being deleted.</li></ul>			
Storing configurations and parameter changes:	Storing parameter changes is automatic with CP FMV/ iSE CFF.			
Pressure transducers:	<p>This refrigeration application is designed for use with the following pressure transducers:</p> <table><tr><td>- pc: 0 ... 30 bar</td><td>0.00 ... 435.11 psi</td><td>Relative (gauge) pressure</td></tr></table> <p><b>WARNING:</b> Only use approved pressure transducers.</p>	- pc: 0 ... 30 bar	0.00 ... 435.11 psi	Relative (gauge) pressure
- pc: 0 ... 30 bar	0.00 ... 435.11 psi	Relative (gauge) pressure		
Recommended basic commissioning steps:	<ul style="list-style-type: none"><li>- Measure the pressures with a refrigeration pressure gauge. Verify that the pressure indicated at parameter 01: (and 03: if used) agree with these external measurements.</li></ul>			
Verifying fan-group operation:	<ul style="list-style-type: none"><li>- Ensure that CondensPack / iSpeed CFF is not running by putting the control switch in the OFF position or by removing the connection to DIN1 at</li><li>- Switch to LOCAL mode as follows depending on which keypad is used:<ul style="list-style-type: none"><li>- Small keypad fitted:<ul style="list-style-type: none"><li>- Press key 'E' until Rdy is displayed.</li><li>- Press key 'O' until a hand is displayed.</li></ul></li><li>- Large external keypad used:<ul style="list-style-type: none"><li>- Press key 'L/R'. LEDs "SEQ" and "REF" should light.</li></ul></li></ul></li><li>- Start the VfG by pressing the green key 'I'. After the start sequence the compressor will operate at the minimum set frequency.</li><li>- Stop the VfG by pressing the red key 'O'.</li><li>- The VfG will not restart until the time set by parameter AP13 has elapsed.</li><li>- Switch back to automatic operation on completion process by removing the electrical power, waiting until the keypad is dark, and then re-applying the electrical power.</li></ul> <p><b><u>On no account forget to reconnect DIN1 and to select automatic operation.</u></b></p>			

## TROUBLE SHOOTING LIST

TRIP MESSAGE	POSSIBLE CAUSE	Hints for fault finding	REMEDIES
<p><b>*** TRIPPED ***</b> <b>OVERVOLTAGE</b></p> <p>↑ Code: 1 → </p>	<ul style="list-style-type: none"> <li>* Voltage of supply too high</li> <li>* Safety contactor not controlled correctly</li> <li>* Compressor motor defect</li> </ul>	<ul style="list-style-type: none"> <li>- Measure and document the voltage in all three input phases</li> <li>- Check wiring of control circuit and compare function with KIMO RHVAC recommendations</li> <li>- Test if compressor motor will run with DOL supply</li> <li>- Measure resistance of motor winding and compare with manufacturer's data</li> <li>- Check insulation between phases and to earth</li> </ul>	<ul style="list-style-type: none"> <li>- Rectify cause of any high voltage</li> <li>- Modify wiring</li> <li>- Replace compressor motor</li> </ul>
<p><b>*** TRIPPED ***</b> <b>UNDERVOLTAGE</b></p> <p><b>*** TRIPPED ***</b> <b>VDC RIPPLE</b></p> <p><b>*** TRIPPED ***</b> <b>DESAT (OVER I)</b></p> <p><b>*** TRIPPED ***</b> <b>OVERCURRENT</b></p> <p>↑ Code: 2 → </p> <p>↑ Code: 25 → </p> <p>↑ Code: 24 → </p> <p>↑ Code: 3 → </p>	<ul style="list-style-type: none"> <li>* Voltage of supply too low</li> <li>* Phase of supply voltage missing</li> <li>* Safety contactor not controlled correctly</li> <li>* Compressor motor defect</li> <li>* Power section of FrigoPack / iSpeed faulty</li> <li>* Incorrect motor connection</li> </ul>	<ul style="list-style-type: none"> <li>- Measure and document the voltage in all three input phases</li> <li>- Check wiring of control circuit and compare function with KIMO RHVAC recommendations</li> <li>- Test if compressor motor will run with DOL supply</li> <li>- Measure resistance of motor winding and compare with manufacturer's data</li> <li>- Check insulation between phases and to earth</li> <li>- Remove motor cable connections to FrigoPack / iSpeed</li> <li>- Check if operation of CondensPack / iSpeed without a motor connected is possible (No trip message: Probably OK; Trip message: Probably defect)</li> <li>- Test for operation with a small test motor</li> <li>- Check wiring to motor terminals (choice of star/delta, part winding etc.)</li> </ul>	<ul style="list-style-type: none"> <li>- Rectify cause of any low voltage</li> <li>- Modify wiring</li> <li>- Replace compressor motor</li> <li>- Replace FrigoPack / iSpeed</li> <li>- Modify wiring</li> </ul>
<p><b>*** TRIPPED ***</b> <b>EXTERNAL TRIP</b></p> <p>↑ Code: 5 → </p>	<ul style="list-style-type: none"> <li>* Safety contactor not controlled correctly</li> <li>* Safety device in safety circuit tripped</li> <li>* DC 24 V control voltage missing</li> </ul>	<ul style="list-style-type: none"> <li>- Check wiring of control circuit and compare function with KIMO RHVAC recommendations</li> <li>- Check safety circuits. Possibly supply undervoltage at a monitoring device.</li> <li>- Check DC 24 V control voltage at FrigoPack / iSpeed</li> <li>- Short circuit with DC 24 V control voltage</li> </ul>	<ul style="list-style-type: none"> <li>- Modify wiring</li> <li>- Reset if necessary</li> <li>- Modify wiring</li> </ul>
<p><b>*** TRIPPED ***</b> <b>CURRENT LOOP</b></p> <p>↑ Code: 7 → </p>	<ul style="list-style-type: none"> <li>* Suction-pressure transducer not connected or connections swapped</li> <li>* Transducer for suction pressure faulty</li> </ul>	<ul style="list-style-type: none"> <li>- Check if blue LED at the input of FrigoPack / iSpeed lights</li> <li>- Measure current from transducer for suction pressure at input to FrigoPack / iSpeed (must be at least +4 mA)</li> </ul>	<ul style="list-style-type: none"> <li>- Verify correct connection to transducer for suction pressure. Exchange leads if necessary</li> <li>- Replace transducer for suction pressure</li> </ul>
<p><b>*** TRIPPED ***</b> <b>INVERSE TIME</b></p> <p>↑ Code: 6 → </p>	<ul style="list-style-type: none"> <li>* Compressor start aborted</li> </ul>	<ul style="list-style-type: none"> <li>- Liquid refrigerant in compressor?</li> <li>- Defect compressor</li> <li>- Incorrect size of FrigoPack / iSpeed or motor connected in delta instead of star.</li> </ul>	<ul style="list-style-type: none"> <li>- Contact KIMO RHVAC / Parker-CIC for advice</li> </ul>
<p><b>*** TRIPPED ***</b> <b>MOTOR OVERTEMP</b></p> <p>↑ Code: 17 → </p>	<ul style="list-style-type: none"> <li>* Link TH1A-TH1B or MOT/TEMP missing</li> <li>* No connection to motor protection PTC</li> <li>* Faulty connection to external PTC relay</li> <li>* Motor winding too hot</li> </ul>	<ul style="list-style-type: none"> <li>- Check wiring of motor protection circuit</li> <li>- Compressor overloaded</li> </ul>	<ul style="list-style-type: none"> <li>- Modify wiring</li> <li>- Contact KIMO RHVAC / Parker-CIC for advice</li> </ul>
<p><b>*** TRIPPED ***</b> <b>?ANYTHING ELSE?</b></p>	<ul style="list-style-type: none"> <li>* Anything else</li> </ul>		<ul style="list-style-type: none"> <li>- Contact KIMO RHVAC / Parker-CIC for advice</li> </ul>

TROUBLE SHOOTING LIST

### Important note:

These messages are of common trips likely to occur during commissioning.  
Other trip messages can occur in fault conditions.

When requesting advice from your supplier, always make an exact note of the following:

- Exact trip message (if appropriate message indicated in both lines of display)
- Message displayed when key 'E' is pressed for at least 10 s.

# CHECKLIST

KIMO Problem Code	Part of installation	Checklist of questions for PROBLEM REPORT	Explanation	Terminals	Answer/ Confirmation
ES	Electrical: - Supply	<ul style="list-style-type: none"> <li>• Are there any known power supply interruptions ?</li> <li>• Do these power supply interruptions occur at the same time each day ?</li> <li>• By what amount does the supply voltage vary ?</li> </ul>	<p>- Indicate approx. times</p> <p>- Indicate min. and max. voltages</p>		<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>When: _____ _____</p> <p>Min.: _____ [V]</p> <p>Max.: _____ [V]</p>
EI	- Installation	<ul style="list-style-type: none"> <li>• Motor cable: Approx. Length ?</li> <li>• Motor cable: Type of screen ?</li> <li>• Motor cable: Screen connected to mounting plate?</li> <li>• Motor cable: Screen connected to metal motor housing ?</li> <li>• Is a galvanised mounting plate used in the electrical enclosure ?</li> <li>• Is a motor filter used between the CondensPack / iSpeed CFF and the compressor motor ?</li> </ul>	<p>- Copper braid ?, Steel braid ?, - Steel conduit ?, none ?</p> <p>- Recommendations: - Contact with large surface area</p> <p>- Make sure no "pig tails"</p> <p>- If yes, indicate KIMO product code</p>		<p>Cu brd. <input type="checkbox"/> Fe brd. <input type="checkbox"/></p> <p>Fe cond. <input type="checkbox"/> None <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Pr. Cde: _____</p>
MT	Compressor motor	<ul style="list-style-type: none"> <li>• Have motor currents been entered into the PROBLEM REPORT ?</li> </ul>	<p>- Operating point</p> <p>- Start up</p>		<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
MM MM	CI CondensPack / iSpeed: - Control and sensor inputs	<ul style="list-style-type: none"> <li>• Protective Earth of CondensPack / iSpeed CFF connected to mounting plate (two separate short connections) ?</li> <li>• Is the DC P24 control voltage present ?</li> <li>• Connection of PTC motor protection ?</li> <li>• Safety circuit OK ?</li> <li>• Enable signal present ?</li> <li>• Signal from suction-pressure transducer present ?</li> <li>• Signal from high-pressure transducer present ? *</li> </ul> <p>* If used</p>	<p>- Terminal:</p> <p>- Terminal:</p> <p>- Without processing - Direct processing of motor thermistors</p> <p>- Processing an external thermistor relay</p> <p>- Terminal CP FMV / iSE CFF :</p> <p>- Terminals for measuring:</p> <p>- Terminals for measuring:</p> <p>- Terminals for measuring:</p> <p>- Terminals for measuring:</p> <p>- Terminal for measuring: Measured against:</p>	<p>2x PE</p> <p>6P - PE</p> <p>TH1 A-B</p> <p>13 - PE</p> <p>7 - PE</p> <p>3B - PE</p> <p>2B - PE</p> <p>..</p> <p>..</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Relay <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>_____ [V]</p> <p>_____ [V]</p>
MM	PS - Power section	<ul style="list-style-type: none"> <li>• Reserved for future use</li> </ul>			
MM	CA - Control assembly	<ul style="list-style-type: none"> <li>• Reserved for future use</li> </ul>			
MM	CS - Control settings, parameter	<ul style="list-style-type: none"> <li>• Operating Mode LOCAL (Programming Pad: LEDs SEQ + REF light) ?</li> <li>• Refrigeration / cooling parameters set ?</li> </ul>	<p>- Not suitable for normal operation, only use for commissioning:</p> <p>- The following parameters must be set:</p> <p><b>AP06 . . . AP09</b></p>		<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
RI	AP Refrigeration: - Application	<ul style="list-style-type: none"> <li>• Required Refrigeration Power entered into PROBLEM REPORT ?</li> <li>• Number of cooling outputs entered into the PROBLEM REPORT ?</li> <li>• Operating pressure and temperatures entered into PROBLEM REPORT ?</li> <li>• On/Off times of compressor pack entered into PROBLEM REPORT ?</li> </ul>	<p>- Operating point</p> <p>- At start up</p> <p>- Enter variable and fixed speed compressor times separately</p>		<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
RI	IN - Installation	<ul style="list-style-type: none"> <li>• Reserved for future use</li> </ul>	- tbd		
RI	PS - Pressure transducers	<ul style="list-style-type: none"> <li>• Approx. cable length</li> <li>• Type of screen</li> <li>• Screen NOT connected at sensor end ?</li> <li>• Screen connected to mounting plate of electrical enclosure ?</li> <li>• Are measured pressures stable ?</li> </ul>	<p>- Copper braid ?, Steel braid ?, - Steel conduit ?, none ?</p> <p>- Large area contact, no pig tails</p> <p>- Indicate range of variation within 30 s</p>		<p>_____ [m]</p> <p>Cu brd. <input type="checkbox"/> Fe brd. <input type="checkbox"/></p> <p>Fe cond. <input type="checkbox"/> None <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>pe/LP _____ pc/HP _____ [bar]</p>
RI	RC - Refrigeration compressor	<ul style="list-style-type: none"> <li>• Oil present ?</li> <li>• Basic data entered into PROBLEM REPORT ?</li> </ul>			<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>

CONFIGURATION OVERVIEW / PROBLEM REPORT

<b>Application</b>	Refrigeration <input type="checkbox"/>	No. of cooling outlets _____	Air Conditioning <input type="checkbox"/>	Condenser <input type="checkbox"/>	Other _____	
<b>Refrigerant</b>	R404A..... <input type="checkbox"/>	R407C..... <input type="checkbox"/>	R134a..... <input type="checkbox"/>	Total refrig. Power _____ [kW]	Other _____	
	R507A..... <input type="checkbox"/>	R22..... <input type="checkbox"/>	R.....			
<b>Compressor 1</b>	Piston <input type="checkbox"/>	No. of cylinders _____	Scroll <input type="checkbox"/>	Screw <input type="checkbox"/>	Other _____	
	Start unloader <input type="checkbox"/>	Part Winding <input type="checkbox"/>	Variable speed <input type="checkbox"/>	OR Fixed speed <input type="checkbox"/>	No. of compressors _____	
	Capacity control _____ [%]	_____ [%]	_____ [%]	_____ [%]		
	Manufacturer _____	Model _____	Anything special _____			
<b>Compressor 2</b>	Piston <input type="checkbox"/>	No. of cylinders _____	Scroll <input type="checkbox"/>	Screw <input type="checkbox"/>	Other _____	
	Start unloader <input type="checkbox"/>	Part Winding <input type="checkbox"/>	Variable speed <input type="checkbox"/>	OR Fixed speed <input type="checkbox"/>	No. of compressors _____	
	Capacity control _____ [%]	_____ [%]	_____ [%]	_____ [%]		
	Manufacturer _____	Model _____	Anything special _____			
<b>Operating point</b>	Suction pressure _____	High (discharge) pressure _____	Pascal/ <input type="checkbox"/>	Suction gas temperature _____ [°C]	Discharge gas temperature _____ [°C]	Motor current _____ [A]
			bar/ <input type="checkbox"/>			
<b>Start up</b>	Suction pressure _____	High (discharge) pressure _____	lb/in <sup>2</sup> <input type="checkbox"/>	Anything special _____		Motor current _____ [A]
			gauge/ <input type="checkbox"/>			
		absolute <input type="checkbox"/>				
<b>CondensPack</b>	<b>CondensPack/iSpeed/MotorMaster</b>		<b>Pressure sensors</b>		<b>FrigoSoft refrigeration/ A/C software</b> FS EA.2_1b	
	Frequency inverter	Type CP/MM/IS _____ Serial number _____	Suction pressure _____ Discharge pressure _____	Version _____ Mode _____		
		<b>Compressor switching times</b>				
		Variable-speed compressor (VsC) t <sub>ON</sub> _____ [s] t <sub>PERIOD</sub> _____ [s]	Fixed speed compressor(s) (FsCs) t <sub>ON</sub> _____ [s] t <sub>PERIOD</sub> _____ [s]			
<b>Report</b>	List of Measured Values in the APP MENU menu			List of Adjustable Parameters in the APP MENU menu		
	<b>AP01 01:pc1 CND PRES</b> _____ [bar] <b>AP02 02:AIN1/pc2 CND</b> _____ [%/bar] <b>AP03 03:pcm CND PRDV</b> _____ [%] <b>AP04 04:VfG MOT FREQ</b> _____ [Hz] <b>AP05 05:Ar_Si_Lm_FfG</b> _____			<b>AP06 06:pc1 SETPNT 1:</b> 15.0 bar _____ [bar] <b>AP07 07:pc1 SETPNT 2:</b> 20.1 bar _____ [bar] <b>AP08 08:pc2 SETPNT 1:</b> 15.0 bar _____ [bar] <b>AP09 09:pc2 SETPNT 2:</b> 20.1 bar _____ [bar] <b>AP10 10:VfG CURR MAX:</b> FF.F _____ [A] <b>AP11 11:VfG FREQ MAX:</b> 50.0 Hz _____ [Hz] <b>AP12 12:VfG FRQ MAX2:</b> 40.00 _____ [Hz] <b>AP13 13:VfG FREQ MIN:</b> 10.00 _____ [Hz] <b>AP14 14:VfG tinh TIM:</b> 20.0 s _____ [s] <b>AP15 15:VfG CNTR PGN:</b> 4.00 _____ <b>AP16 16:FS__EA.2_1x:</b> A21b _____  Special settings: <b>P7 BASE FREQUENCY:</b> 50.0 Hz _____ [Hz] <b>St11 SKIP FREQ 1:</b> 0.0 Hz _____ [Hz] <b>St12 SKIP FREQ 1 BAND:</b> 0.0 Hz _____ [Hz] <b>St01 JOG ACCEL TIME:</b> 0.2 s _____ [s] <b>St02 JOG DECEL TIME:</b> 5.0 s _____ [s] <b>P8 JOG SETPOINT:</b> 0.0 % _____ [%]		
<b>TRIP HISTORY</b>	<b>TRIP</b>	1 _____	2 _____	3 _____	4 _____	5 _____
		(NEWEST)	6 _____	7 _____	8 _____	9 _____
<b>Manufacturer</b>	<b>Agent / Partner</b>		<b>Customer</b>		<b>Installation</b>	
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