

iProRACK ***Compressor Rack Controllers***

Belluno / Italy

20.11.2013

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EMERSON™
Climate Technologies

iProRACK



iPro.RACK



IPR200

Advanced Controllers for Compressor Racks Designed to Manage even the most Complex Installation

For...

Market Target:

- Installers & OEMs
- Retrofit Market

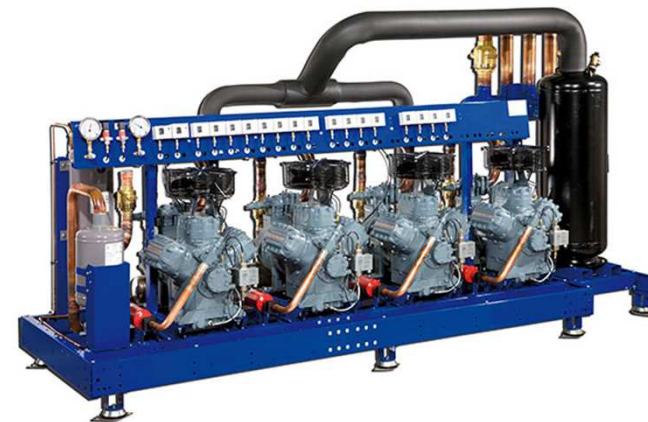


Controllers for Large Compressor Racks (MT/LT) with:

- Up to 2 Circuits and 12 Compressors per Circuit
- 2 Circuits with 2 Inverters

Kind of Compressors:

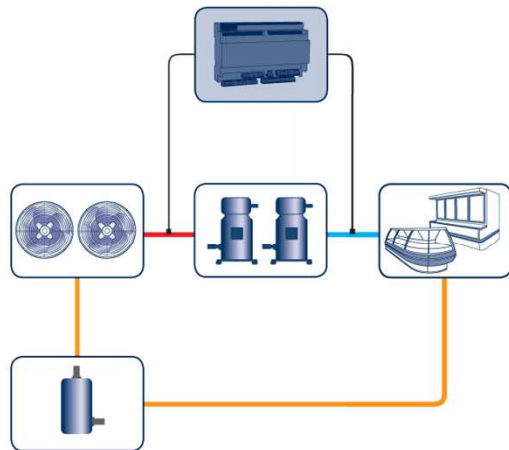
- Scroll
- Semi-hermetic (Reciprocating)
- Multi-stages
- Screw



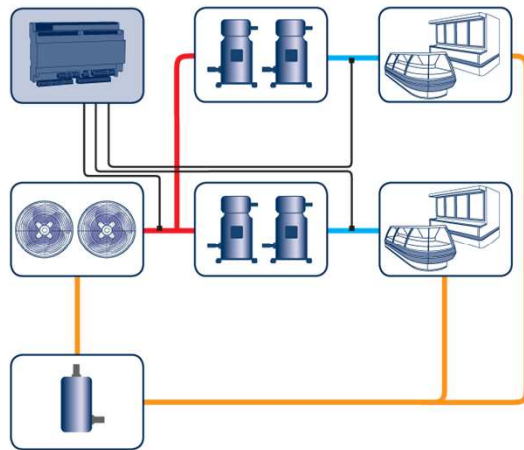
Applications

KINDS of CIRCUIT

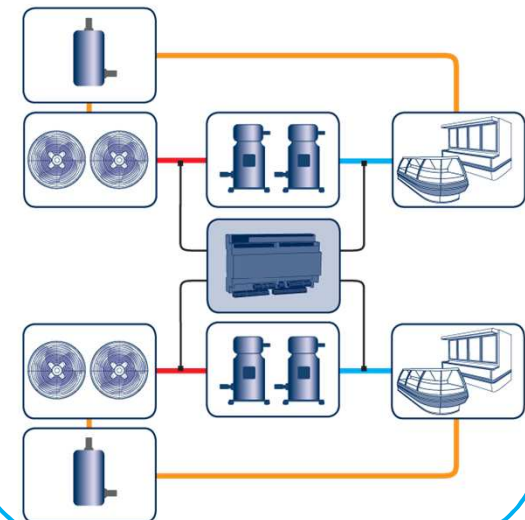
**1 SUCTION CIRCUIT,
1 CONDENSATION CIRCUIT**



**2 SUCTION CIRCUITS
1 CONDENSATION CIRCUIT**



**2 SUCTION CIRCUITS
2 CONDENSATION CIRCUITS**



MODULATING SUCTION : inverter or digital compressors in conjunction with XEV02D

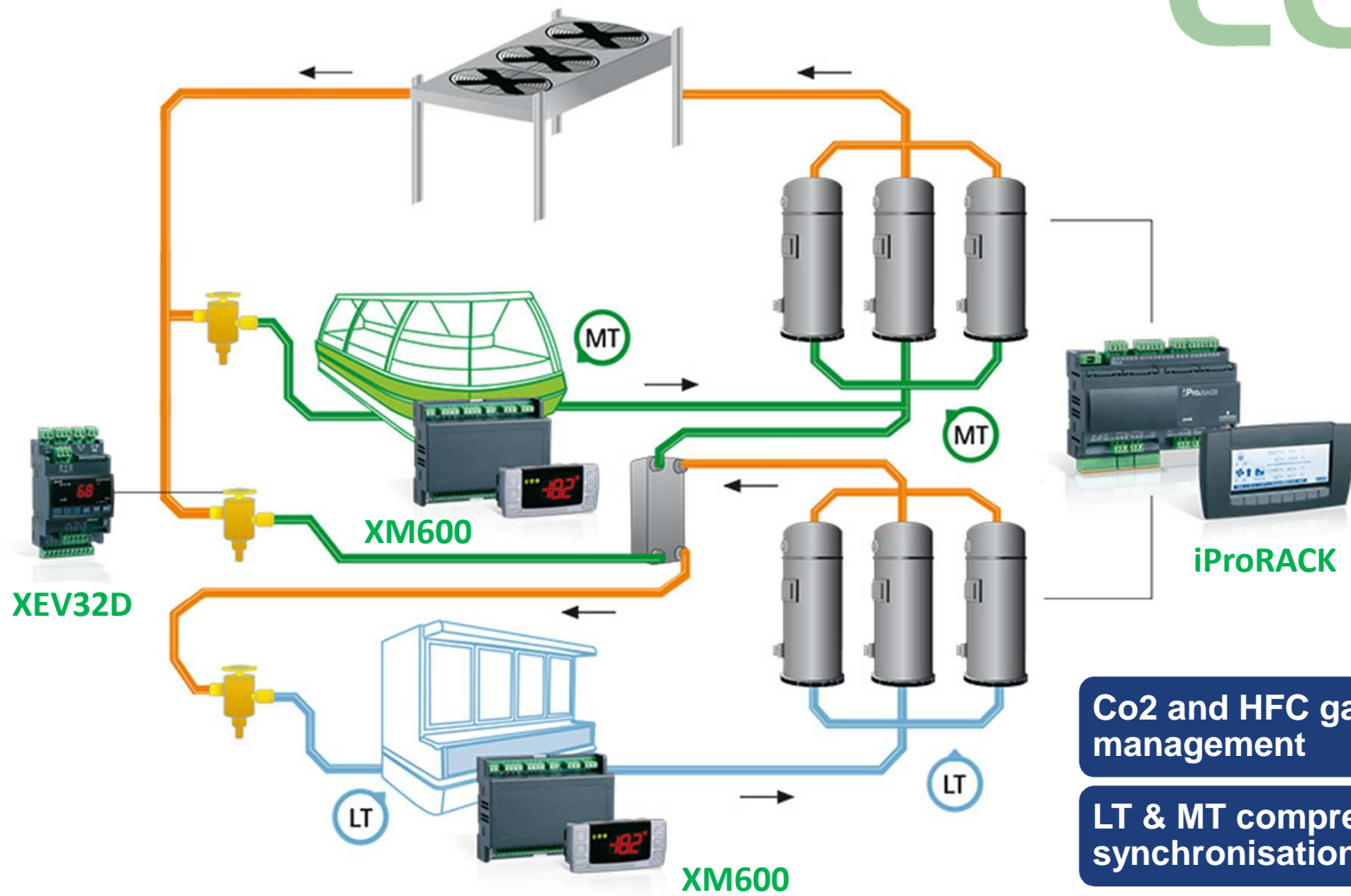
MODULATING CONDENSER: ECI fan or inverter or chopped phase device

Applications

SUBCRITICAL CO₂ APPLICATION

SUBCRITICAL SYSTEM (Cascade Solution)

CO₂

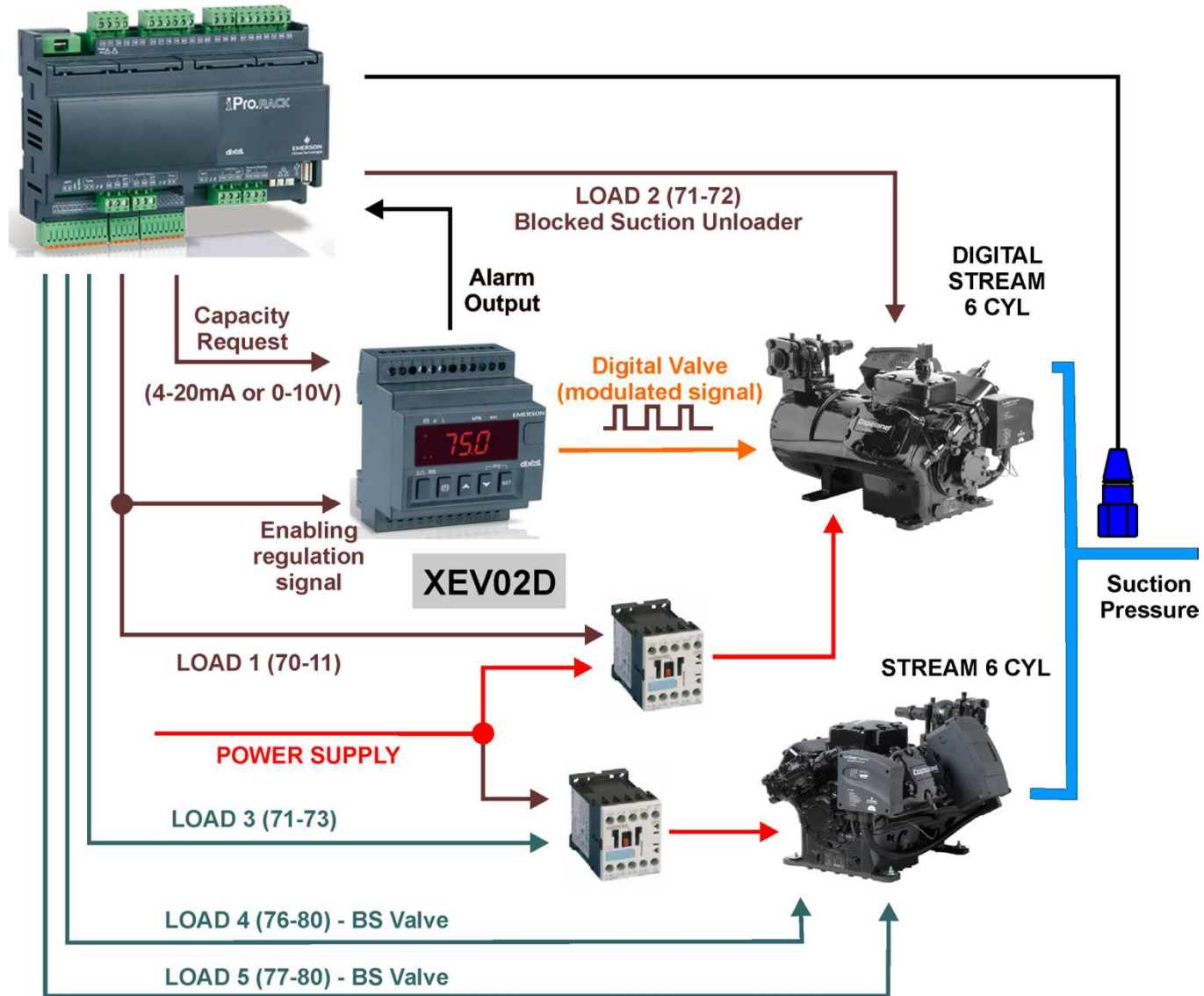


Co2 and HFC gas management

LT & MT compressors synchronisation

Applications

COPELAND STREAM 6D MANAGEMENT



Plus

ENVIRONMENTAL FRIENDLY

Optimized for energy savings

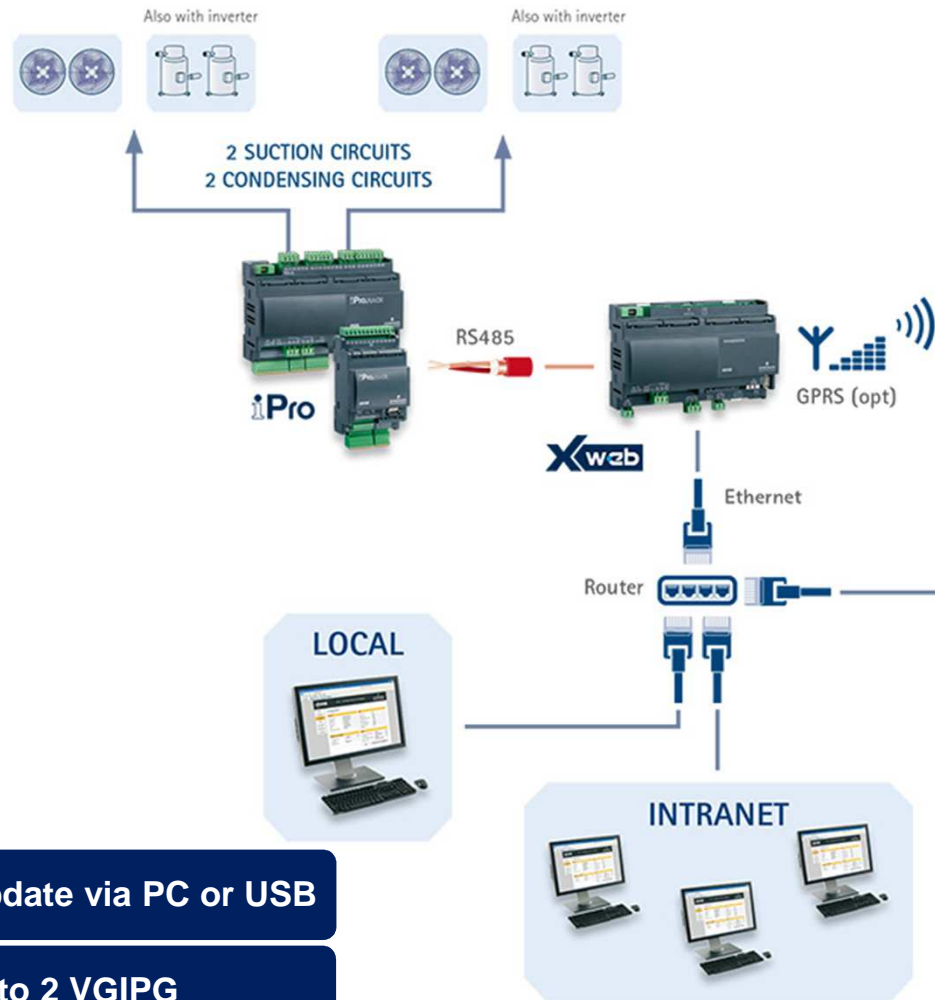
- Management of modulating devices both in suction and delivery for 2 circuits
- Floating set point for condenser according to external temperature

Refrigerant CO₂, R407C and R407F: to include the new low environmental impact assessment refrigerants



Plus

✓ COMMUNICATION & FLEXIBILITY



Software update via PC or USB

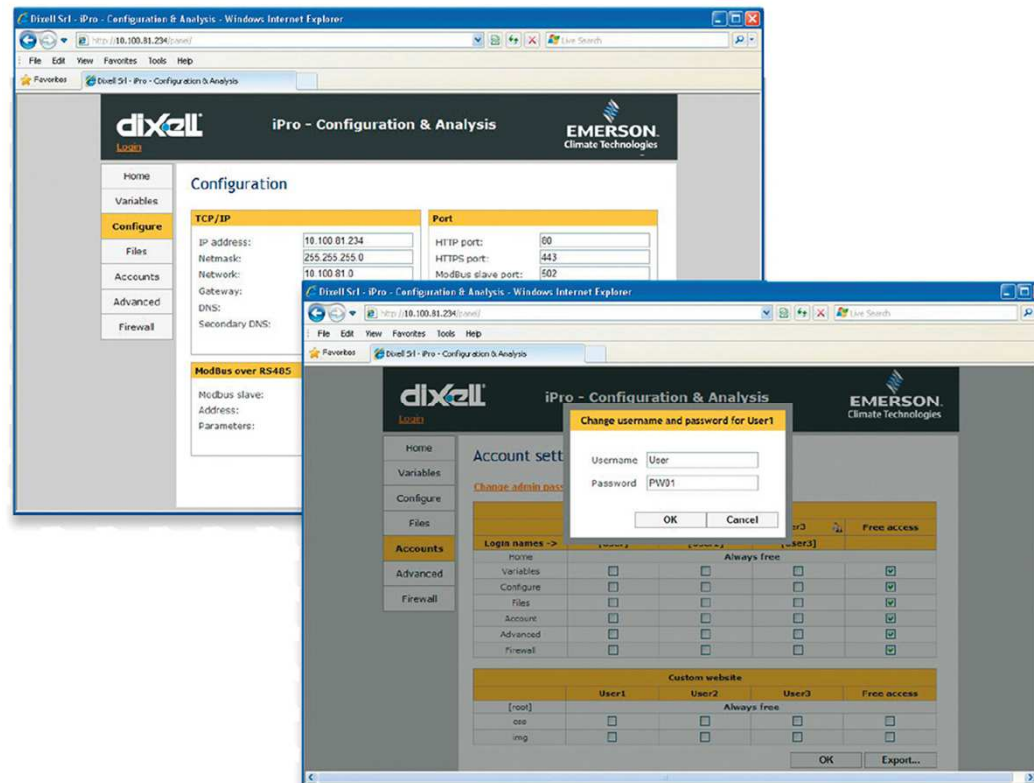
Up to 2 VGIPG

Plus



INTERNAL WEB SITE

The iProRACK controllers have an integrated web site that can be easily reached through a standard browser. This instrument is very useful to configure the controller and to display and change the machine variables.



Plus

- ✓ **USER FRIENDLY INTERFACE**
The Visograph with LCD display, gives concise information about the variables of the compressor rack
- ✓ **GREAT VERSATILITY**
Parametric solution that maintain all the iPro features: flexibility, scalability, configurability
- ✓ **HIGH INTEGRATION LEVEL**
iProRACK is designed for Stream Digital 6D-4D with XEV02D and can communicate with Copeland Stream Coresense®
- ✓ **LOW ENERGY CONSUMPTION**
Thanks to the advanced algorithm, the iProRACK reduces the power consumption



Family Overview

MAIN FEATURES

- **MAIN HW**
 - High I/O flexibility
 - RS485 Serial MST&SLAVE and Ethernet communication Line
- **MAIN FUNCTIONS**
 - Management of 2 circuits with different gases
 - Optimized management of
 - Dynamic set point for condenser
 - Dynamic set point for suction
 - RTC for energy saving
 - Neutral zone or proportional band
 - Up to 4 inverters management both for compressors and fans



Family Overview

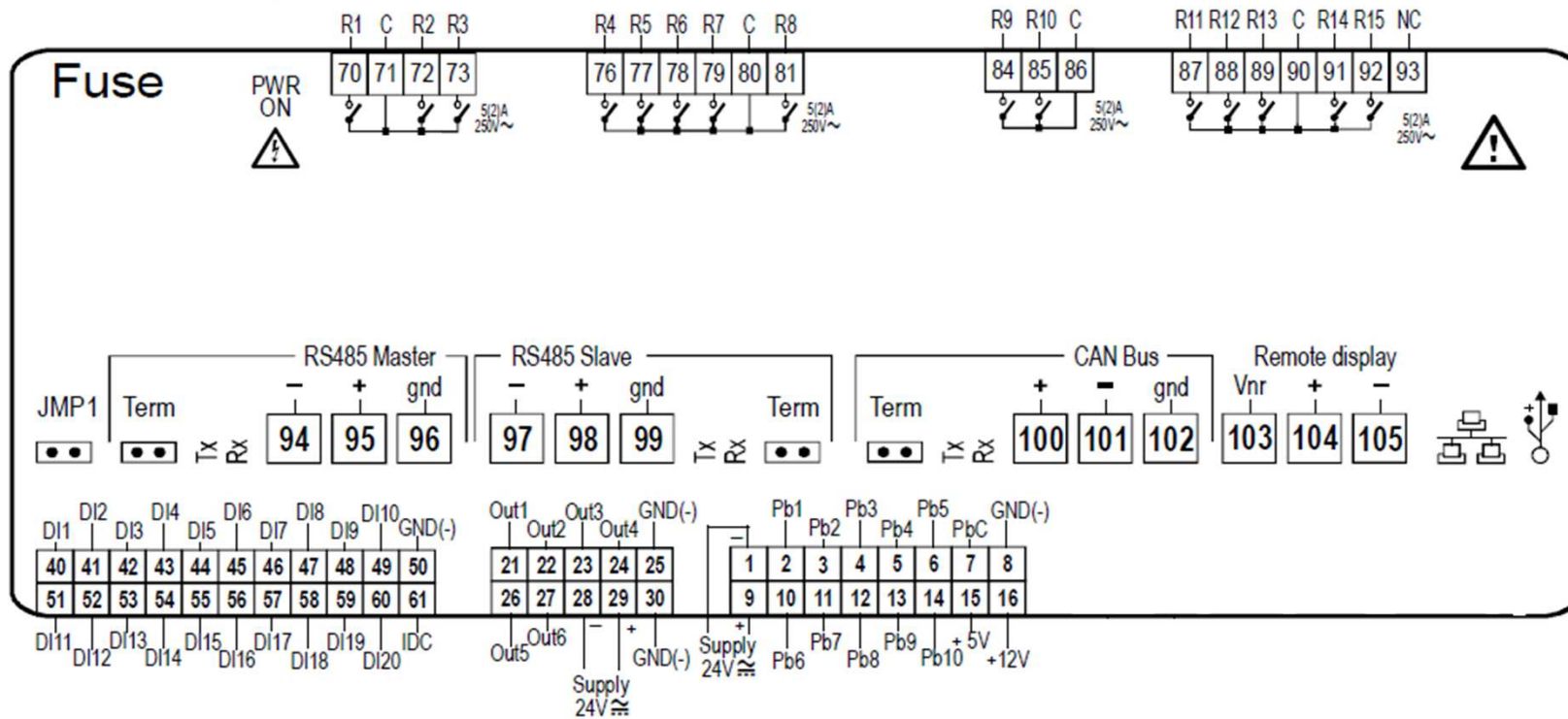
TECHNICAL FEATURES

Characteristics	IPR215D
Display	LCD on VGIPG (240x96pixels)
Power supply	24Vac/dc from TF20D
Probe inputs	10 x config (NTC, PTC, 4÷20mA, 0÷10V, 0÷5V, DI)
Digital inputs	20 x optoisolated (Free voltage or 24V)
Relay outputs	15 x config (5A)
Analog outputs	6 (4÷20mA, 0÷10V)
Remote display connection	1
USB port	Present
RS485 master	Present
RS485 slave	Present
LAN port	Present



Family Overview

WIRING DIAGRAM

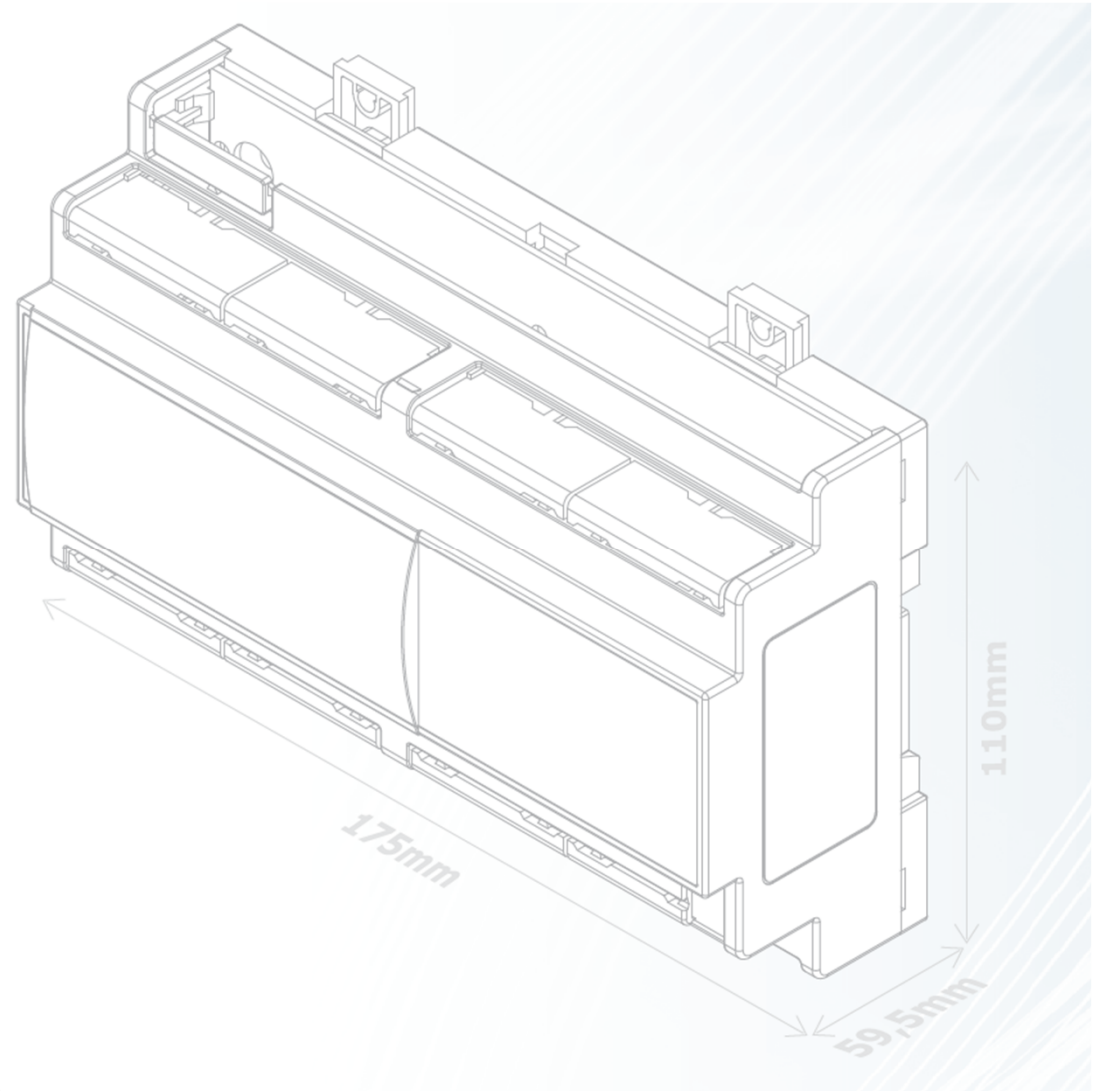
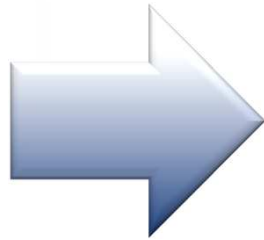


Family Overview

DIMENSIONS

10 DIN RAIL Format

Wall or DIN Rail mounting



Family Overview

ACCESSORIES

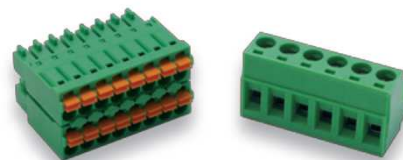


TF20D

The TF20D (DIN Rail mounting) 20VA model is available in the following versions: 230/24Vac and 110/24Vac. 3 DIN Rail format

IP-FC215CP

6 screw female connectors, 2-3(x2)-6-7-8 pins and 3 bayonet female connectors 10-16-22 pins



XJ485USB-KIT

The USB to RS485 serial converter (2 wires) is the perfect choice to interface any computer, equipped with WIZMATE software and a USB port, to a network of instruments. XJ485USB is only 78x40x22mm and supports different communication speeds in the range from 300 to 19200bps. The kit includes the USB cable type A-B, 1,5m and a USB with the drivers for the main operative systems (Microsoft Windows, Linux, MAC OS) and a WIZMATE software version

iProRack & Coresense®

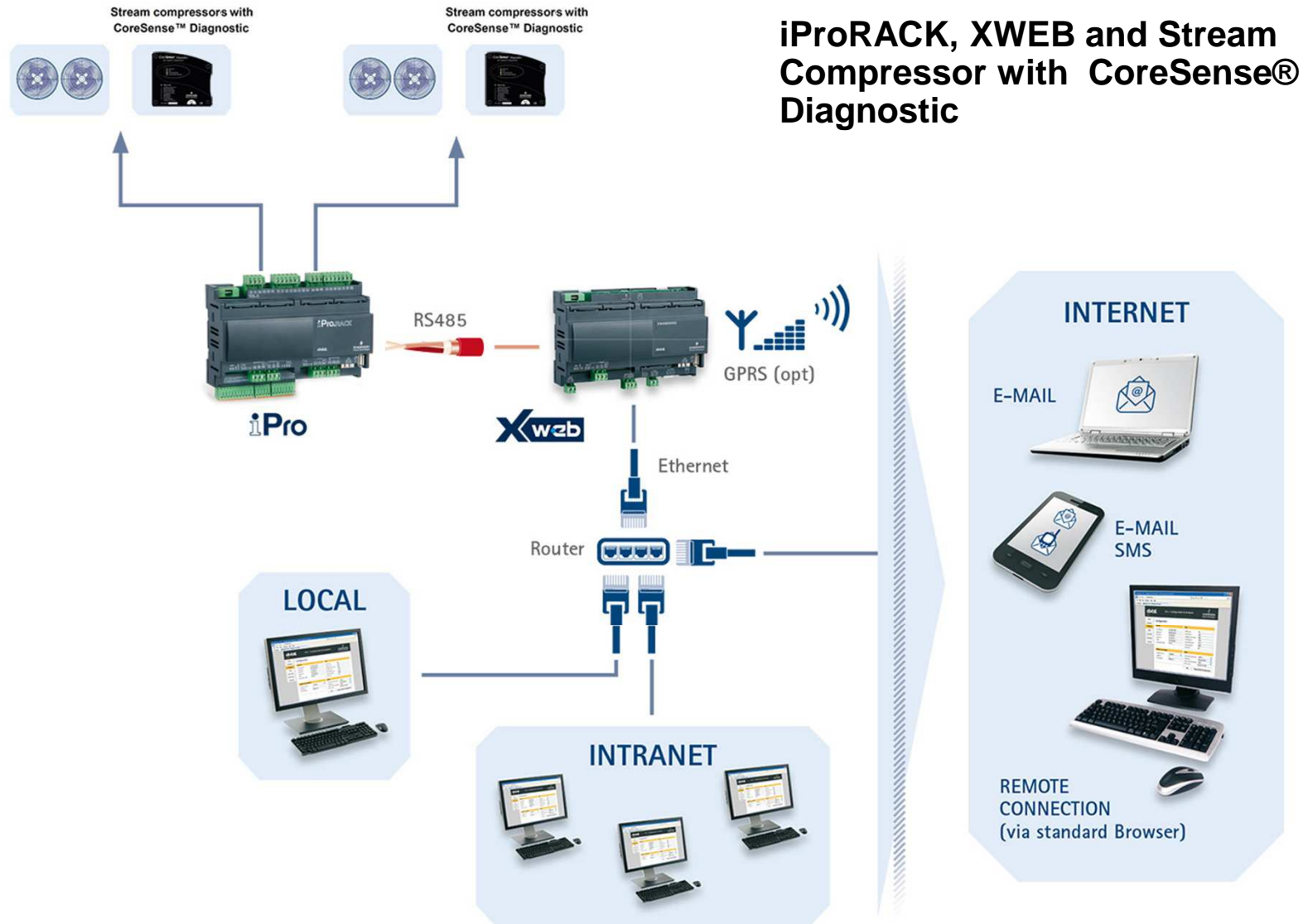


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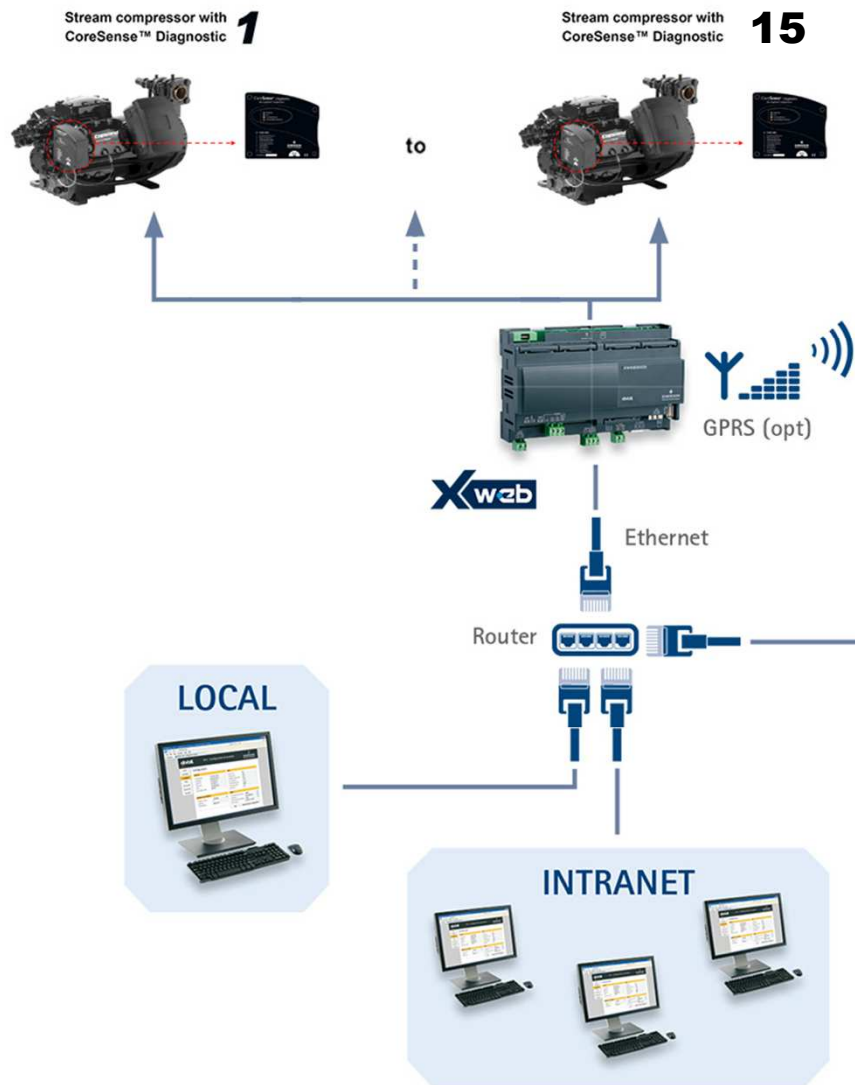
- In 2012 CoreSense Diagnostic has been launched with the Stream Compressors in Europe
- It is an Advanced Motor Protection Module with Diagnostics Features
- iProRack has been developed to communicate with the Coresense to make available towards monitoring system the variables monitored by the Coresense
- The Coresense must have F35 or greater FW release
- Data from Coresense are available
 - Locally on the iPro Keyboard
 - Remotely on the X-WEB system


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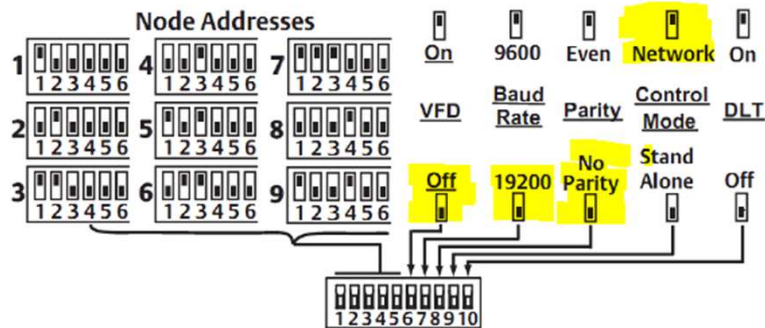


iProRACK, XWEB and Stream Compressor with CoreSense® Diagnostic

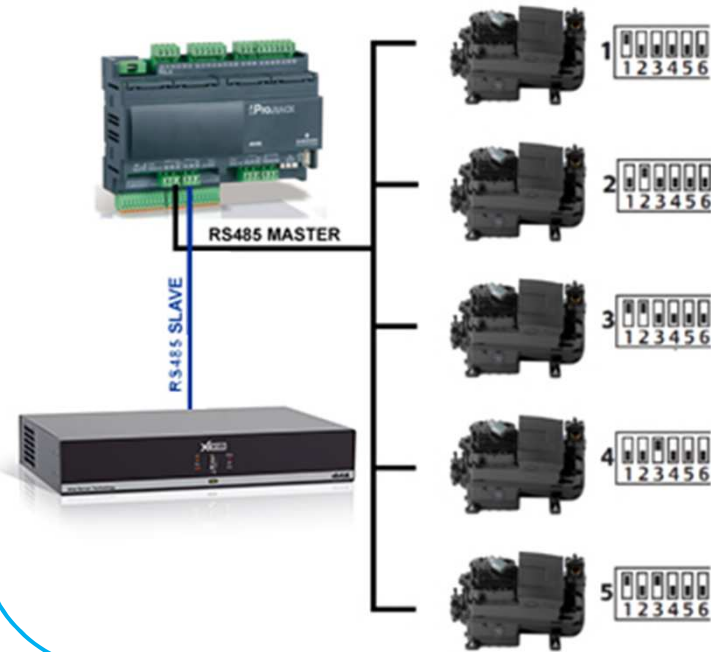


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CoreSense - Dip Switches and Address Setting

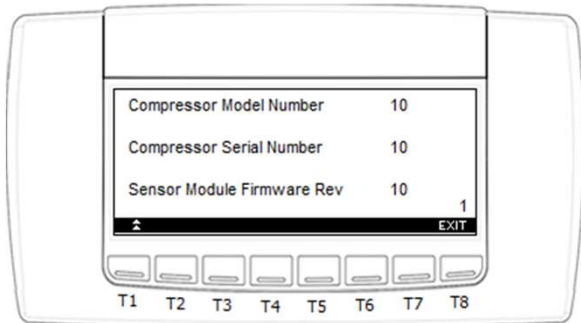


X-WEB – iProRack CoreSense



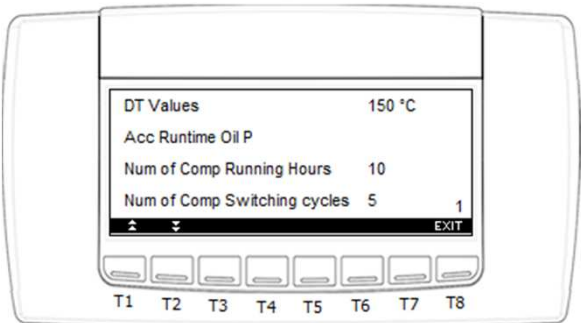
Physical addresses	Addresses in XWEB setup
iProRACK = 30	iProRACK = 30
Coresense 1 = 1	CS 1 = 31 (iProRack add. + CS 1 add.)
Coresense 2 = 2	CS 2 = 32 (iProRack add. + CS 2 add.)
Coresense 3 = 3	CS 3 = 33 (iProRack add. + CS 3 add.)
Coresense 4 = 4	CS 4 = 34 (iProRack add. + CS 4 add.)

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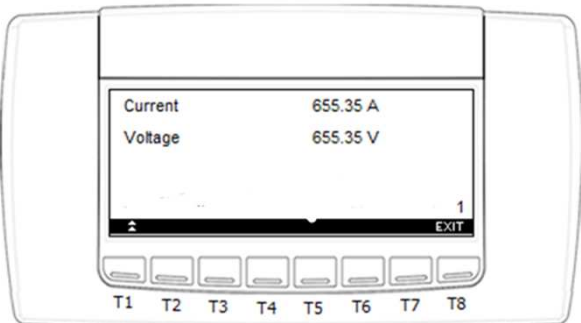
ASSET INFORMATION

- Compressor model
- Compressor serial number
- Sensor module firmware revision



OPERATING INFORMATION

- Number of compressor running hour
- Number of compressor switching cycle
- Running time without good oil pressure
- compressor power consumption
- current, voltage, power factor

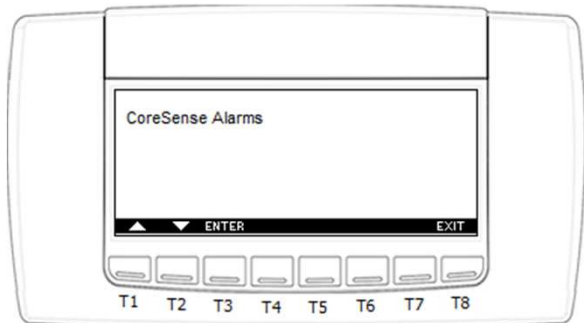


OPERATING PARAMETER

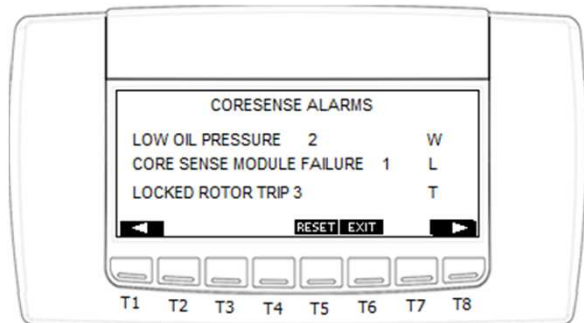
- DLT trip Value
- Power supply
- Voltage Imbalance
- Reset Core Sense

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1. Entry in the Alarm Menu
2. Select the Coresense Alarms sub-menu



3. With the RESET button it is possible to reset the alarms



KIND OF ALARMS

Type	ACTION	RESET
LOCKOUT	COMPRESSOR SWITCH OFF BUZZER ON LOG OF THE ALARM	REMOTE RESET (COMMAND) MANUAL RESET (CORE SENSE) the compressor will return available after the reset.
TRIP	COMPRESSOR SWITCH OFF BUZZER ON LOG OF THE ALARM	AUTOMATIC RESET : the compressor will return available until the alarm will be off
WARNING	COMPRESSOR WILL GO ON WORKING	AUTOMATIC RESET

ALARM LIST

Type	Visograph Description	Code of Alarm
Lockout	Insufficient Oil Pressure L	37 - Low Oil Pressure Lockout
Lockout	Missing Phase L	42 - Phase Loss Lockout
Lockout	Locked Rotor L	41 - Locked Rotor Lockout
Lockout	High Discharge Temp L	39 - Discharge Temperature Lockout
Lockout	Low Voltage L	54 - Low Voltage Lockout
Lockout	Module Failure L	43 - P470 Module Failure Lockout
Trip	Low Voltage T	21 - Compressor Low Voltage Trip
Trip	Locked rotor T	31 - Locked rotor Trip
Trip	Missing Phase T	28 - Phase Loss Trip
Trip	Voltage Imbalance T	24 - Voltage Imbalance Trip
Trip	High Discharge Temp T	19 - Discharge Temp Trip
Trip	Motor Temp. T	32 - Motor Temperature Trip
Warning	Communication Error (to SM) W	16 - Communication Error to SM
Warning	Current sensor fault W	12 - Connection lost between sensor
Warning	Communication Error to Ipro W	18 - Communication Error to E2
Warning	No.run & Fault Temp Probe W	7 - Normal Running & Fault Temp Probe
Warning	Hw Conf. Mismatch W	17 - E2/P470 Configuration Mismatch
Normal	Normal Off	44 - Normal OFF
Normal	Normal On	45 - Normal Running

Thank you!

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