D: 10 DIN Rail

VG: 82x156mm

XC1000 SERIES: up to 15 COMPRESSOR/FAN OUTPUT APPLICATIONS

- Electronic controllers for compressors and condensing fans management of medium-large compressor racks
- Scroll, semi-hermetic, multi stages, with different power and screw compressor management
- Concise information about the variables of the compressor rack through the VISOGRAPH display
- 2 analogue outputs for frequency compressors
- 2 analogue outputs for inverter for fans
- Hourly run time signals for maintenance
- Sub-cooling management
- Subcritical CO_2 regulation
- Compressor unloading in case of high condensing pressure alarm
- Suction superheat calculation with alarm management and possible stop of compressors
- Liquid injection valve activation to increase superheat
- Alarm management with absolute and relative pressure
- Hot Key or Prog Tool Kit connector for quick and easy programming
- Serial connection to monitoring systems
- 12VA max power absorption

HOW to ORDER

XC1000D

X	C	1	0			D	-	1	B	0	D	E

B	D	E
Measurement unit	**4÷20mA/0÷10V**	**Inputs**
C = °C	**0** = No	**C** = NTC
F = °F	**1** = Yes	**D** = PTC
B = Bar		**E** = 4÷20mA
P = PSI		**F** = Suction PP11; Condensing PP30
K = KPA		**G** = Ratiometric

VGC810

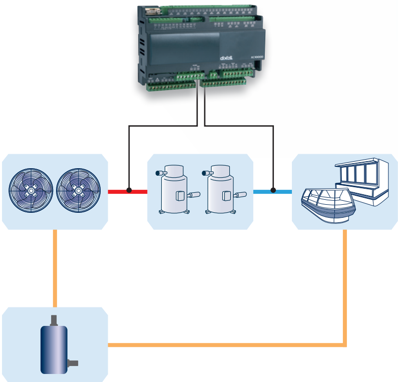
V	G	C	8	1	0	-	A	B	0	0	0

A	B
Buzzer	**Kind of mounting**
0 = No	**P** = Panel
1 = Yes	**W** = Wall

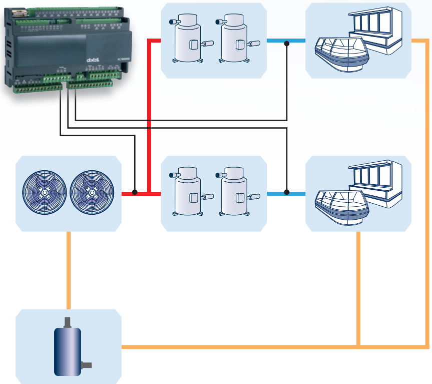
KINDS OF CIRCUIT

The XC1000D series is able to manage in the best possible way the majority of applications for refrigeration circuits.

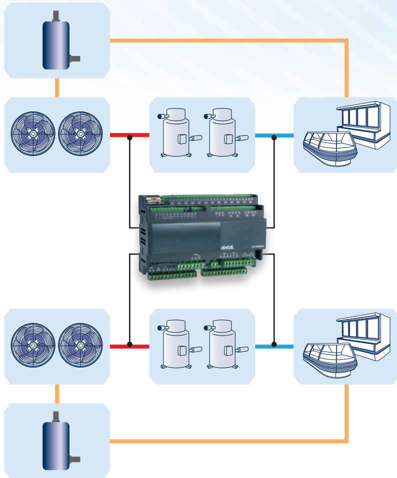
1 SUCTION CIRCUIT
1 CONDENSATION CIRCUIT



2 SUCTION CIRCUITS
1 CONDENSATION CIRCUIT



2 SUCTION CIRCUITS
2 CONDENSATION CIRCUITS

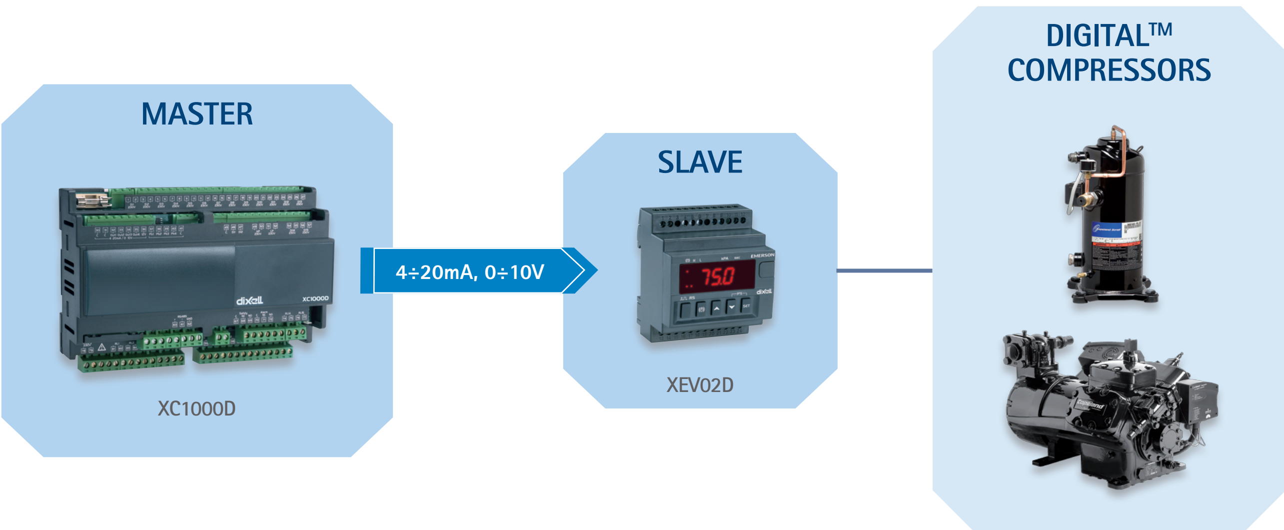


CO_2 REGULATION

CO_2 use is increasing thanks to the advantages it offers in cooling plants. For this reason there is also a greater demand for accessories. Thanks to special algorithms, the XC1000D series can manage and monitor CO_2 plants that work in cascade connection with sub-critical cycle.

COMPATIBILITY with DIGITAL™ COMPRESSORS

Thanks to its powerful hardware platform and to the advanced algorithms, the XC1000D family is able to drive the majority of compressor racks present in the market. An interesting match is the one with Dixell XEV02D driver that allows management of compressor racks equipped with Digital™ compressors. In these applications, by using the modulating capacity, the plant receives the optimum refrigeration power thereby reducing consumption.

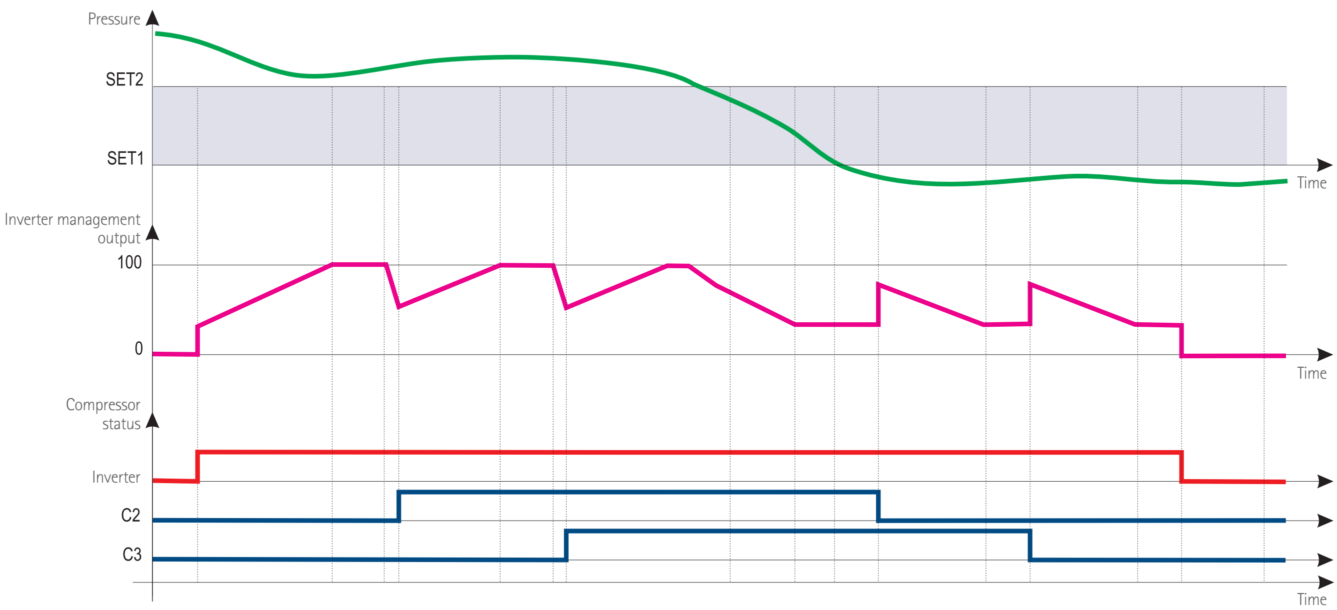


ENERGY SAVING MANAGEMENT

The XC1000D series gives to the user several solutions that let you to manage energy savings. The controllers have a special algorithm that lets you to optimize the efficiency of the plant, ensuing energy savings. The following are a range of the most important solutions that Dixell offers to customers to achieve energy savings.

COMPRESSORS with INVERTER

When the plant needs more power (when the temperature gets out of the band) the inverter compressor frequency increases. If this is not enough, the other compressors (C2, C3, ...) will be activated in sequence. At the same time the controller will modulate the inverter compressor frequency in order to have a uniform increase of the plant power.

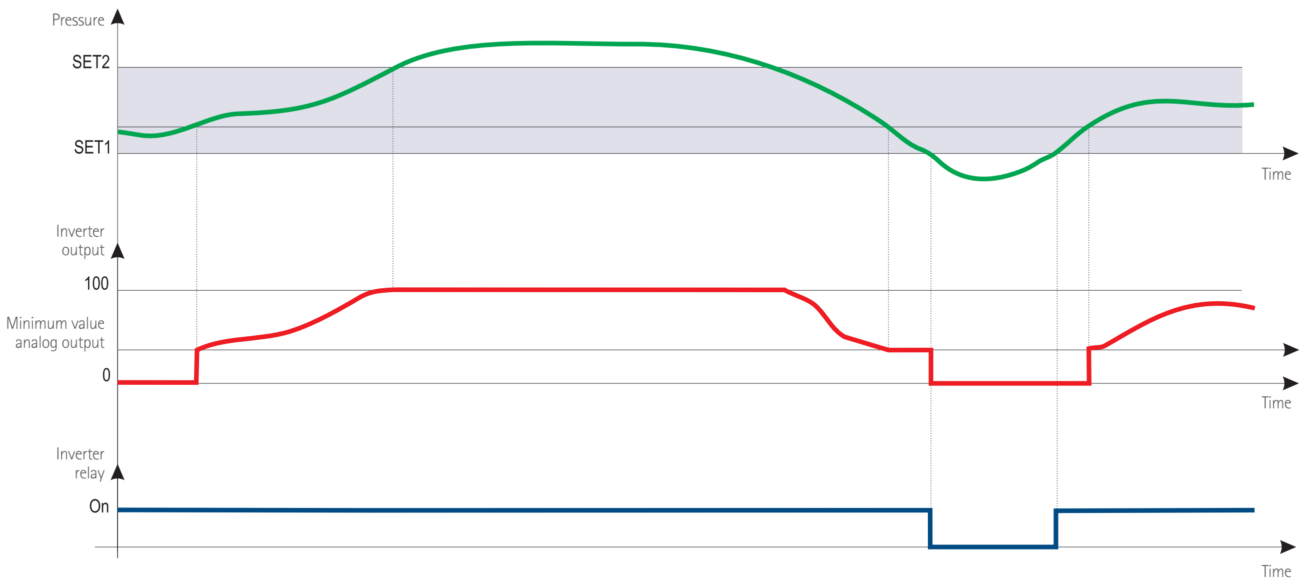


EC FANS – INVERTER

In this case all condensing fans are driven by one inverter or are EC fans.

The inverter power is proportional to the condensing pressure value and the analog output is modulated proportionally to the condensing pressure/temperature over the set (SET1÷SET2). Under SET1 the output will be switched off, over the SET2 the output is at 100%.

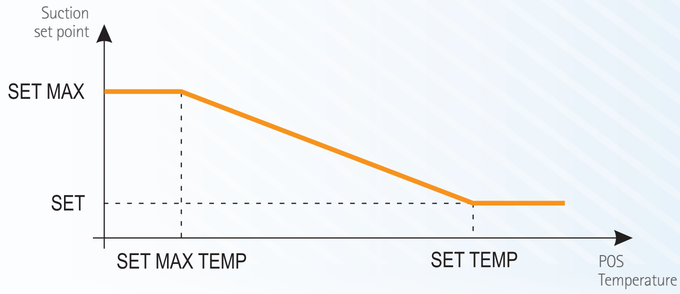
The relay set as inverter will be activated if the condensing pressure/temperature is higher than the SET1 and switched off when the condensing pressure is lower than the SET1. It can be used to allow the inverter regulation.



SUCTION DYNAMIC SET POINT

Suction temperature/pressure optimization can depending on retail space temperature.

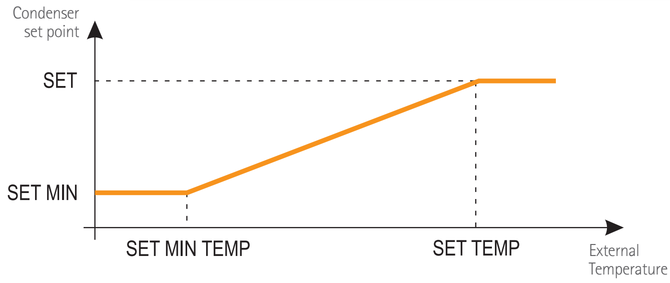
The dynamic set point guarantees excellent plant efficiency, considering the real operational conditions. The plant modifies the suction temperature/pressure according to the retail space temperature so the refrigeration power changes depending on the real thermodynamic exchange.



CONDENSER DYNAMIC SET POINT

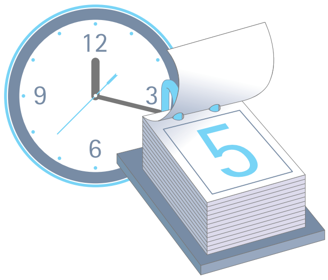
Condenser temperature/pressure optimization can depend on the external temperature.

The condenser temperature/pressure is modified according to the external temperature. The condensing set point is automatically adjusted according to the external temperature, to get an optimum condensing temperature.



REDUCED SET POINT

An internal 7 day clock can automatically change the adjustment's set point, depending on a particular system's individual requirements, to enter an energy saving cycle during nights and weekends, when less power is required. This energy saving cycle can also be initiated from an external source via a digital input.



SUPERVISION SET

The connection to the modern supervising systems (of Dixell) allows, thanks to the **CRO** (**C**ompressor **R**ack **O**ptimization), to manage in the best way the compressor rack set point depending on the devices connected, with the result of having an optimize energy saving on the plant. The system, equipped with the CRO function, analyzes the information from the controller in the application to determine if a controller needs more refrigeration power and the quantity. The set point will be re-calculate in order to satisfy the worse instance and sent from the supervising system to the XC1000D; this will be the working set point (**fig. 1**). If the supervising system can't manage the XC1000D, is the controller that "decided" to replace the set point (coming from the system) and will then define the set point in the program phase.

The 2 graphs (**fig. 2**) emphasize that when the CRO algorithm is active, in a real installation, the set point becomes on average higher, and consequently the energy consumption decreases. The dotted line represents the average weekly value.

fig. 1

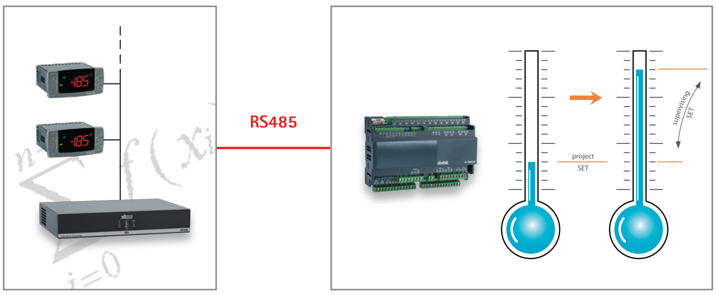
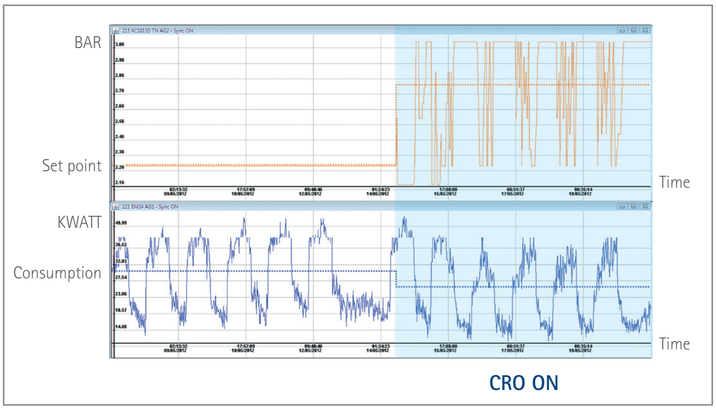


fig. 2



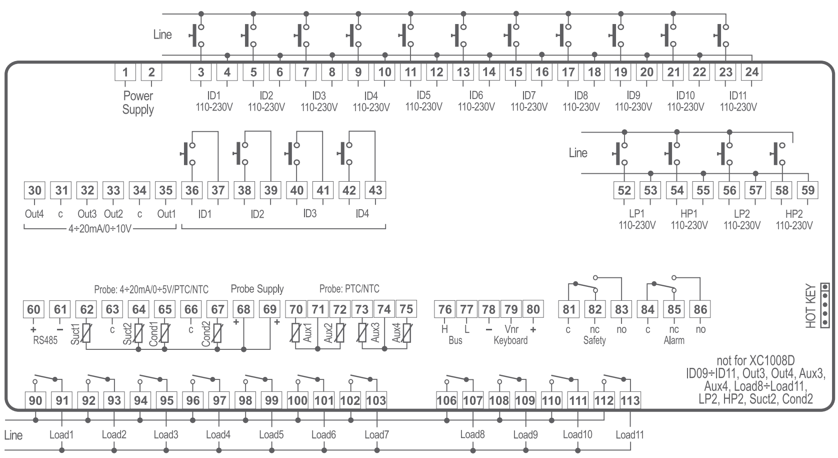
Up to 11 COMPRESSOR and FAN COMPRESSOR RACK CONTROLLERS

D: 10 DIN Rail

XC1008D	Digital controller for simultaneous management of up to 8 compressors and fans
XC1011D	Digital controller for simultaneous management of up to 11 compressors and fans

FEATURES	XC1008D	XC1011D
Display	LCD on VGC810	LCD on VGC810
Power supply	24Vac/dc (from TF10D)	24Vac/dc (from TF20D)
Probe inputs		
Suction	NTC, PTC, 4÷20mA, 0÷5V	NTC, PTC, 4÷20mA, 0÷5V
Suction 2		NTC, PTC, 4÷20mA, 0÷5V
Condensing	NTC, PTC, 4÷20mA, 0÷5V	NTC, PTC, 4÷20mA, 0÷5V
Condensing 2		NTC, PTC, 4÷20mA, 0÷5V
Auxiliary	NTC, PTC	NTC, PTC
Auxiliary 2	NTC, PTC	NTC, PTC
Auxiliary 3		NTC, PTC
Auxiliary 4		NTC, PTC
Digital inputs		
Low pressure switch	1	1
Low pressure switch 2		1
High pressure switch	1	1
High pressure switch 2		1
Safety loads	8	11
Configurable	4	4
Relay outputs		
Loads	8 x 7A config	11 x 7A config
Alarms	2 x 8A	2 x 8A
Other outputs		
Inverter compressors	4÷20mA/0÷10V opt	2 x 4÷20mA/0÷10V opt
Inverter fans	4÷20mA/0÷10V opt	2 x 4÷20mA/0÷10V opt
Hot Key/Prog Tool Kit	pres	pres
Visokey		
Serial	RS485	RS485
Other		
Remote display	VGC810	VGC810
Alarms	last 100	last 100
Buzzer	on keyboard	on keyboard

XC1008D – XC1011D



CONTROLLER and GRAPHIC DISPLAY for COMPRESSOR RACKS with up to 15 COMPRESSORS and FANS

XC1000

XC1015D	Digital controller for simultaneous management of up to 15 compressors and fans
VGC810	Remote keyboard with LCD graphic display and interface dedicated to the management of compressor racks by means of XC1000D controllers (IP65 front protection)

D: 10 DIN Rail

VG: 82x156mm

FEATURES	XC1015D	VGC810
Display	LCD on VGC810	LCD - 240x96pixels
Power supply	24Vac/dc (from TF20D)	from controller
Probe inputs		
Suction	NTC, PTC, 4÷20mA, 0÷5V	
Suction 2	NTC, PTC, 4÷20mA, 0÷5V	
Condensing	NTC, PTC, 4÷20mA, 0÷5V	
Condensing 2	NTC, PTC, 4÷20mA, 0÷5V	
Auxiliary	NTC, PTC	
Auxiliary 2	NTC, PTC	
Auxiliary 3	NTC, PTC	
Auxiliary 4	NTC, PTC	
Digital inputs		
Low pressure switch	1	
Low pressure switch 2	1	
High pressure switch	1	
High pressure switch 2	1	
Safety loads	15	
Configurable	4	
Relay outputs		
Loads	15 x 7A config	
Alarms	2 x 8A	
Other outputs		
Inverter compressors	2 x 4÷20mA/0÷10V opt	
Inverter fans	2 x 4÷20mA/0÷10V opt	
Hot Key/Prog Tool Kit	pres	
Visokey		pres
Serial	RS485	
Other		
Remote display	VGC810	
Alarms	last 100	
Buzzer	on keyboard	opt

XC1015D