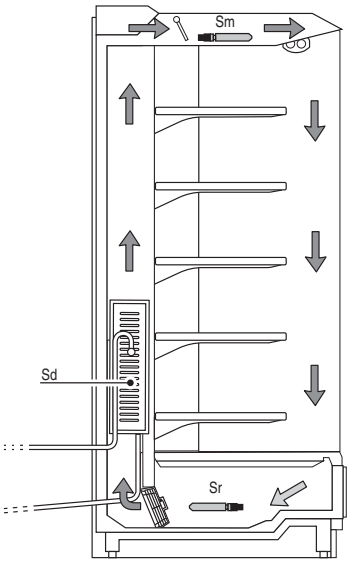

Fig. 1.b

Key:

Sm	Outlet probe	Sr	Intake probe
Sd	Defrost probe	E	evaporator
SV	Solenoid valve	EEV	electronic expansion valve

Below is a description of the series of components and accessories in the MPXPRO range:

Master board (MX30M*****)

Fitted with clock (RTC) and RS485 card, this can independently manage a refrigeration unit, synchronise events over a LAN and connect to a CAREL or Modbus® supervisory network. Plastic spacers are provided for fitting the for electronic valve driver (EEV) expansion board or the 0 to 10 Vdc output expansion board.

Fig. 1.c

Slave board (MX30S*****)

Without clock (RTC) and RS485 card, these can manage a refrigeration unit without the supervisor and clock functions. Slave boards can be converted into Master boards by fitting in place (see photo) the RTC and RS485 interface card (MX3OP48500) and setting a parameter (In). Plastic spacers are provided for fitting the EEV driver expansion board or the 0 to 10 Vdc output board.

Fig. 1.d

Master/Slave boards (MX30*25HO0)

With 2 PWM outputs and E2V driver board with 0 to 10 Vdc output incorporated.

Fig. 1.e

Master/Slave boards (MX30*24HO0)

With 2 PWM outputs and PWM driver board with 0 to 10 Vdc output incorporated.

Fig. 1.f

Stepper EEV expansion board (MX3OPST***).

Optional board for controlling a CAREL E²V electronic expansion valve driven by stepper motor. Model MX3OPSTP0* also has a 0 to 10 V modulating output for controlling the evaporator fans and anti-sweat heaters.
Available in version with ultracap technology to ensure the electronic valve closing in the event of power failure to avoid the installation of liquid solenoid valve.

Fig. 1.g

PWM (Pulse-Width Modulation) EEV expansion board (MX3OPPWM**)

Optional board for controlling an AC or DC PWM electronic expansion valve. Model MX3OPPWM0* also has a 0 to 10 V modulating output for controlling the evaporator fans and anti-sweat heaters.

Fig. 1.h

0 to 10 Vdc expansion board (MX*OPA10**)

Optional board used to manage the evaporator fans and anti-sweat heaters with a 0 to 10 Vdc control signal.

Fig. 1.i

RTC and RS485 interface card (MX3OP48500)

Optional card that adds the clock (RTC) and RS485 interface (CAREL and Modbus® protocol) functions to the MPXPRO Slave controllers, making them MPXPRO Master controllers.

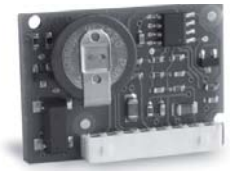

Fig. 1.j

User terminal (IR00UG*300) and remote display (IR00XG*300)

The user terminal includes the display and the keypad, featuring 4 buttons that, pressed alone or in combination, are used to program the controller. The remote display is used to show system variables. Both devices are available in two versions, with or without infrared receiver and commissioning port.

user terminal

Fig. 1.k

remote display

Fig. 1.l

USB/RS485 converter (CVSTDUMOR0)

The USB/RS485 converter is an electronic device that is used to interface an RS485 network to a personal computer using the USB port.

Fig. 1.m

USB/I2 Cconverter (IROPZPRG00)

Converter used to connect a personal computer to an MXOPZKEYA0 programming key, so as, using the VPM program (Visual Parameter Manager), to read, edit and write the parameters. In turn the programming key can be used to program other controllers or read the parameters, for example to copy the parameter settings entered on the keypad of other controllers.

Fig. 1.n

Programming key (MXOPZKEYA0/IROPZKEYA0)

Fitted with interchangeable connectors, the MXOPZKEYA0 programming key for MPXPRO is used to copy the complete set of parameters, storing up to six different control parameter configurations. Below is the table of compatibility with MPXPRO firmware versions.

Fig. 1.o

Programming key	MPXPRO firmware version	Sets of parameters available
MXOPZKEYA0	≥ 2.1	6
IROPZKEYA0	≤ 1.2	2

Tab. 1.c

VPM programming tool (Visual Parameter Manager)

The program can be downloaded from http://ksa.carel.com. Once running on the computer the tool can be used to commission the controller, edit the parameters and update the firmware. The USB/RS485 converter is required.

Fig. 1.p

Remote control (IRTRMPX000)

The remote control is used for programming and commissioning the MPXPRO. See the chapter on User interface.

Fig. 1.q