

XC400/600 for small/medium compressor rack management

Dixell introduces the new compact parametric controllers for compressor rack with advanced energy saving.



ENERGY SAVING



ENVIRONMENTALLY FRIENDLY



Dixell presents the **XC400/600 series**, dedicated to the control of **small/medium modulating compressor racks** with up to 6 compressor/fan outputs. The advanced power management features allow to manage, both **suction and condenser inverters** and the new **environmental friendly gases** such as R407F.

The controllers are available in **DIN rail or 32x74 formats** and thanks to a wider dual display with icons the user can instantly have a complete information about the status of the machine (suction and discharge pressure/temperature, loads status and alarms).

Through the serial output with **ModBUS-RTU** protocol all series can be monitored remotely via **XWEB** system.



1 MAIN APPLICATIONS

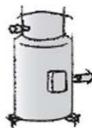
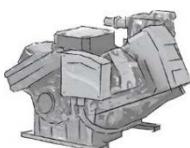
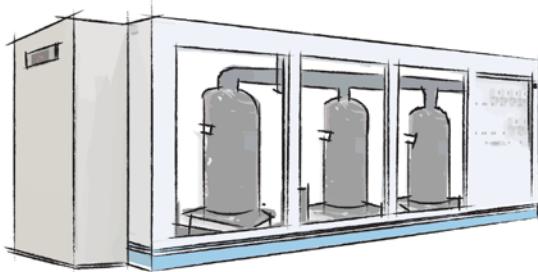
Thanks to the completeness of the hardware and several optimized functions the new XC400/600 series is the ideal solution for small and medium compressor racks in retail field.

RACK TYPES:

- Only compressors or fans - with or without inverters
- Compressors and fans - with or without inverters
- 2 suctions and 1 condenser

Designed for modulating compressor racks

Designed for frequency or digital compressors



The **XC645CX** (32x74mm format) and the **XC645D** (DIN Rail format), dedicated to **Copeland Digital™** world, were designed to manage both **Scroll and Stream compressors** (4MD or 6MD).

2 MAIN FEATURES

2.1 XC400

On the XC400 series, now with disconnectable screw terminal blocks, flexibility has been improved for a wider range of racks such as:

- Only compressors or fans (with or w/out inverter)
- Standard compressors and modulating fans
- Frequency compressor and fans
- Frequency compressor and modulating fans



2.2 XC600

New hardware and new functions on the XC600 series ensure more flexibility for a wider range of racks such as:

- Only compressors or fans (with or w/out inverter)
- Standard compressors and modulating fans
- Frequency compressor and fans
- Frequency compressor and modulating fans

2.2.1 XC600CX

- Capability of managing an inverter in both suction and delivery phases, thanks to the two 0÷10V or 4÷20mA analogue outputs
- Floating set point for fans: it allows the optimization of condensing temperature according to the external temperature, reducing the energy consumption. Increment the seasonal efficiency
- Two additional configurable digital inputs with new functions:
 - Silence mode: it reduces the fan speed during the night
 - External alarm: can be connected to phase monitor to report problems on the line
- Addition of R407C and R407F refrigerants: in order to include the new low environmental impact assessment refrigerants
- Set point for inverter in relation to the floating set
- XC645CX TRIAC at 24Vac (all loads at 24V)



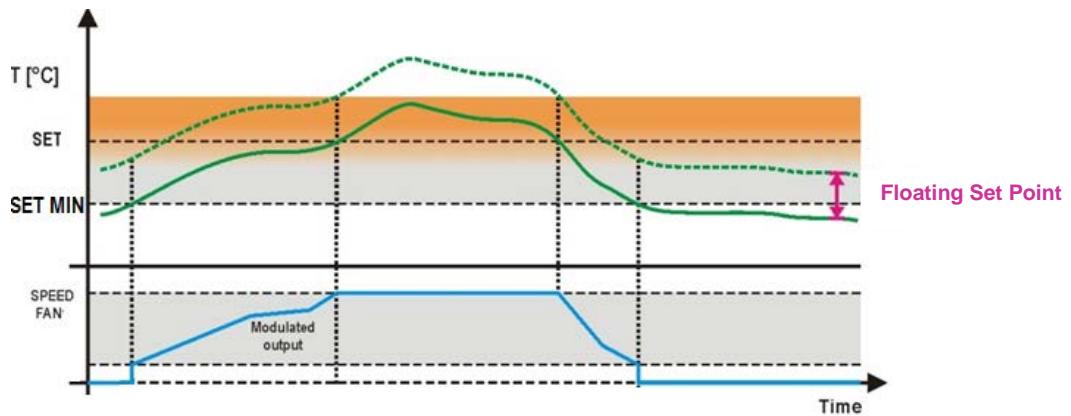
2.2.2 XC600D

- Floating set point for fans: it allows the optimization of the condensing pressure according to external temperature, reducing the energy consumption. It improves the seasonal efficiency
- Each relay has its own line in order to simplify the external wiring connection
- Specific inputs for low and high pressure switches, operating at line voltage. It reduces the cost of external contactors to decouple voltages
- Two additional configurable digital inputs with new functions
 - Silence mode: it reduces the fan speed during the night for the racks placed in residential areas
 - External alarm: can be connected to phase monitor to report problems on the line
- Connection for VC660 external keyboard: it allows to mount the XC660D controller on the electrical panel, while the keyboard is mounted on the door. This makes connections simpler
- Built in RS485 line: the controller can be connected to the monitoring system without external serial converters
- Possibility to choose the voltage for the solenoid valve of the digital compressor: 24V or 110/230V without changing the part number (XC645D)
- Addition of R407C and R407F refrigerants: in order to include the new low environmental impact assessment refrigerants



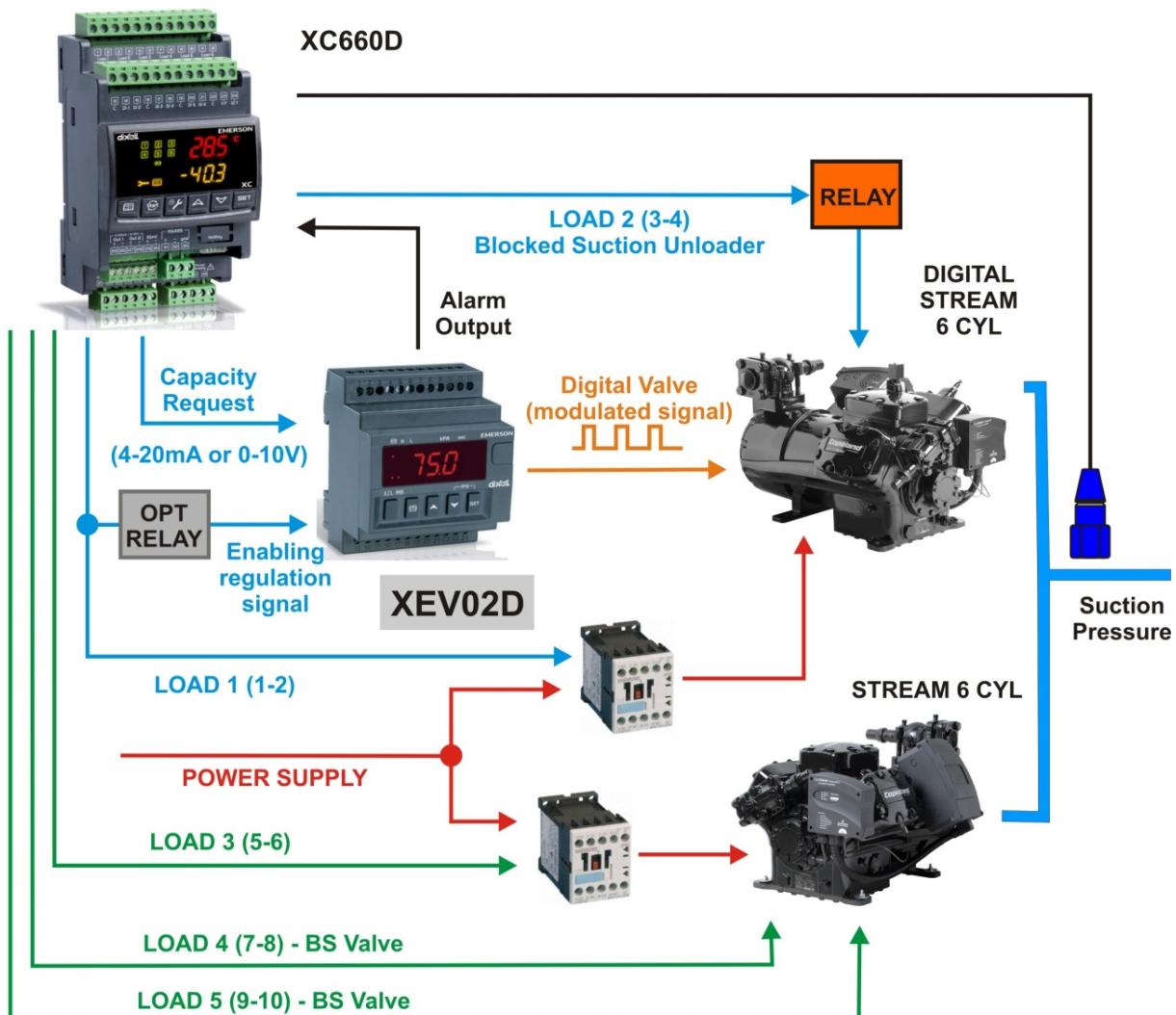
2.2.3 FLOATING SET POINT

The **XC600 series** allows to adjust the condensing capacity through modulated fans. Furthermore, the Floating Set Point function can be set to adjust the condensing pressure according to the external temperature; in this way the minimum allowable condensing pressure is always maintained and the compressor work improves in efficiency and energy saving.



COMPRESSOR RACK with XC660D + XEV02D for DIGITAL STREAM 6 CYLINDERS

Here below an example of circuit combining XC660D with XEV02D (Slave mode driver for Digital™ compressor management).



3 BENEFITS

3.1 FLEXIBILITY

XC660 series is designed to manage small or medium compressor racks, up to 6 compressors, thanks to the complete configurability of the relays that are on board and to the software optimized for these types of application.



3.2 A SPECIFIC SOLUTION FOR DIGITAL™ COMPRESSORS

XC645D and XC645CX controllers are the ideal solution for the management of compressor racks with 1 **Digital Scroll** compressor and up to 3 **standard Scroll** compressors. Fans can be electronic or of variable speed type.

3.3 SIMPLIFIED COMMISSIONING OPERATIONS

The standard configuration offered by Dixell allows to install XC400/600 controllers quickly and without special settings in most systems.

3.4 SIMPLICITY in PROGRAMMING

The system optimization is now even easier thanks to the configuration customization of the controller; only few parameters have to be modified.

3.5 OPERATION is ALWAYS UNDER CONTROL

The multiple monitoring and fault signaling functions allow an optimum control of the unit operation. Any malfunctions are promptly reported and, where possible, managed.

4 XC400/600CX MAIN FEATURES

	XC450CX	XC645CX	XC650CX
Power supply	12, 24Vac/dc	12, 24Vac/dc	12, 24Vac/dc
Display	dual display with 17 icons	dual display with 17 icons	dual display with 17 icons
Disconnectable terminal blocks	screw type	12/14 pins	12/14 pins
Probe inputs			
Suction 1 (NTC/4÷20mA/0-5V)	•	•	•
Suction 2 (NTC /4÷20mA/0-5V)			•
Condensing (NTC /4÷20mA/0-5V)	•	•	•
Fourth configurable (NTC)	•	•	•
Digital inputs - free voltage			
LP		•	•
LP2			•
HP		•	•
Safety load alarm	up to 5	up to 5	up to 6
Configurable D.I. (E.S.; on/off; Liquid Level)	•	•	•
Relay outputs			
Loads	5 (5A)	4 (5A)	5 (5A)
Other outputs			
Triac output for digital compressor		•	
0-10V output for inverter-compressor	Opt		Opt
0-10V output for inverter-fan	Opt	opt	Opt
12V output (5th/6th load)		•	•
Other			
Alarms log	latest 10	latest 10	latest 10
Buzzer	•	•	•
TTL serial output	TTL	TTL	TTL
Hot Key connector	•	•	•

4.1 XC600D FEATURES

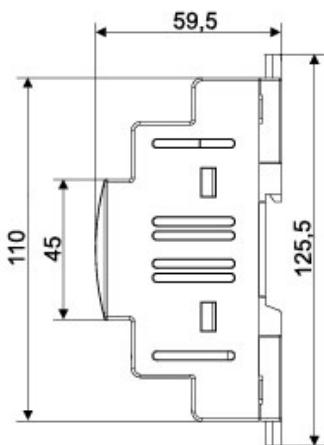
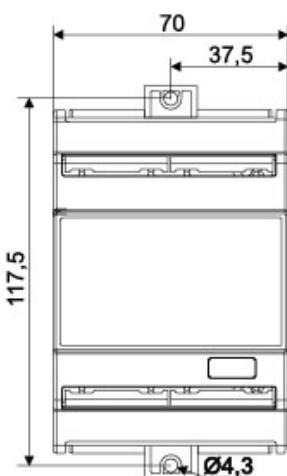
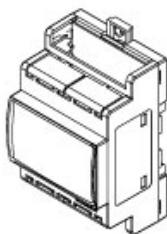
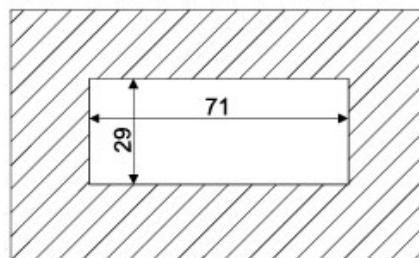
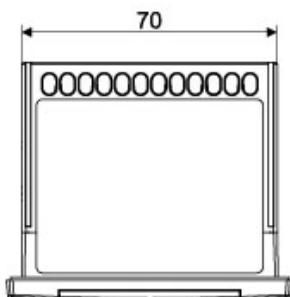
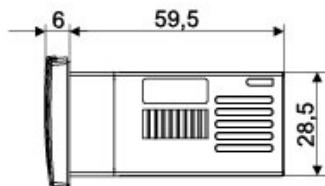
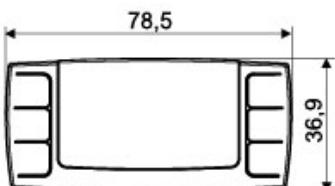
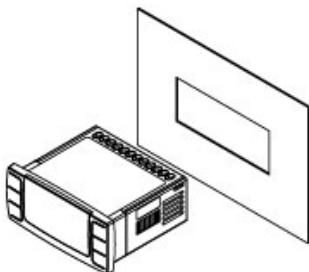
	XC640D	XC645D	XC660D
Power supply	110, 230Vac 100÷240Vac	110, 230Vac 100÷240Vac	110, 230Vac 100÷240Vac
Display	dual display with 17 icons	dual display with 17 icons	dual display with 17 icons
Disconnectable terminal blocks	screw type	screw type	screw type
Probe inputs			
Suction 1 (NTC/4÷20mA/0-5V)	•	•	•
Suction 2 (NTC /4÷20mA/0-5V)			•
Condensing (NTC /4÷20mA/0-5V)	•	•	•
Fourth configurable (NTC)	•	•	•
Digital inputs			
LP (Main voltage)	•	•	•
HP (Main voltage)	•	•	•
Safety load alarm (Free voltage)	4	4	6
Configurable dig. input (E.S.; on/off; Liquid Level, External alarm, Silence funct.)	•	•	•
Relay outputs			
Loads	4 (3A)	4 (3A)	6 (3A)
Other outputs			
Triac output for digital compressor		24V or 230V	
0-10V output for frequency-compressor	opt		opt
0-10V output for inverter-fan or ECI fan	opt	opt	opt
Other			
Alarms log	last 10	last 10	last 10
Buzzer	•	•	•
RS485 serial output	•	•	•
Remote display connection	(*)	(*)	(*)
Hot Key connector	•	•	•

(*): only with 100÷240V supply

4.2 TECHNICAL FEATURES

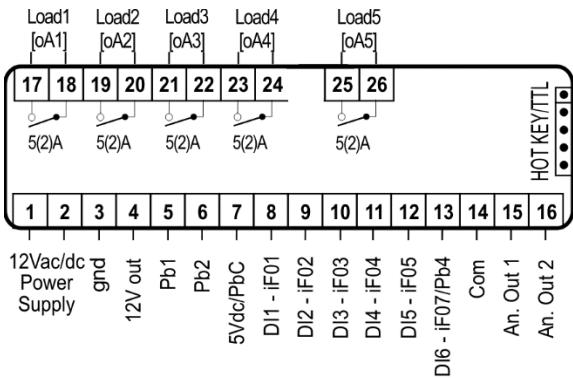
Housing	Self extinguishing ABS
Mounting	panel mounting in a 29x71mm panel cut-out (XC645CX, XC650CX) on DIN rail (XC640D, XC645D, XC660D)
Frontal protection	IP65 for XC645CX, XC650CX
Display	upper 4-digit display with decimal point lower 4-digit display with decimal point
Connections	Removable terminal block 10÷14 ways XC600CX series Removable screw terminal block - XC400CX - XC600D series
Power supply	12Vac/dc -10 ÷ +15%; 24 Vac/dc ±10%; 50/60Hz 110Vac ±10%; 230Vac ±10%; 100÷240Vac; 50/60Hz
Power absorption	Max. 5VA
Transducer inputs	3 x 4÷20mA or 3 x 0.5÷4.5Vdc or 3 x NTC 10K
Probe inputs	1 x NTC 10K or NTC86K
Digital inputs	7 x free voltage
Relay outputs	Up to 4 x SPST 5(3) A, 250Vac - XC600CX Series Up to 6 x SPST 5(3) A, 250Vac - XC600CX Series
Triac output	30W - XC645CX , XC645D
External relay output	0÷12V, 40mA max - XC650CX
Analogue output	opt. 2 x 0÷10V o 4÷20mA
Data storing	on non-volatile memory (EEPROM)
Operating temperature	-10÷60°C (20÷140°F)
Storage temperature	-30÷85°C (-22÷185°F)
Relative humidity	20÷85% (no condensing)
Measuring range	-40÷110°C (-40÷230°F)
Resolution	0,1 °C; 1°F; 0.1bar; 1 PSI (selectable)
Accuracy	(ambient temp. 25°C): ± 0.7°C ± 1digit

4.3 DIMENSIONS

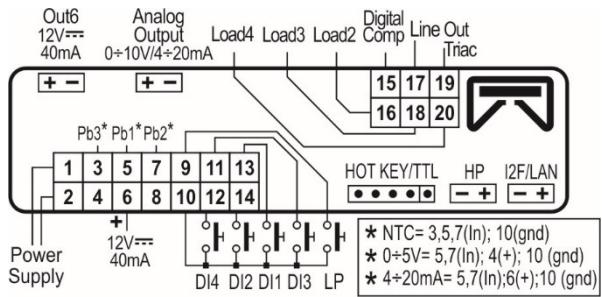


4.4 WIRING DIAGRAMS

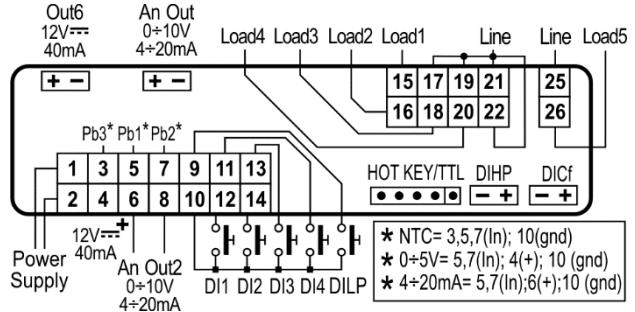
XC450CX



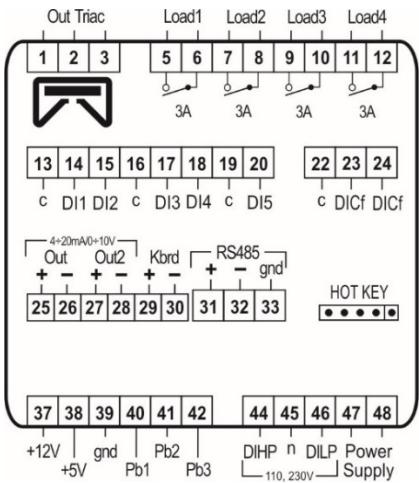
XC645CX



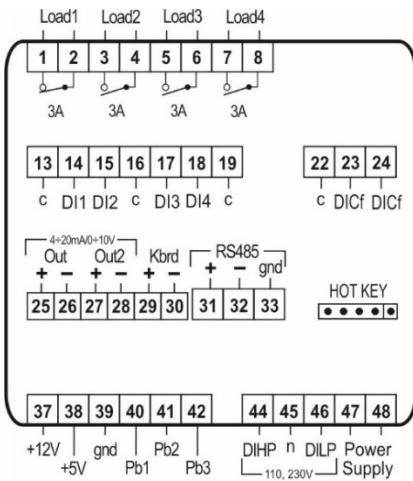
XC650CX



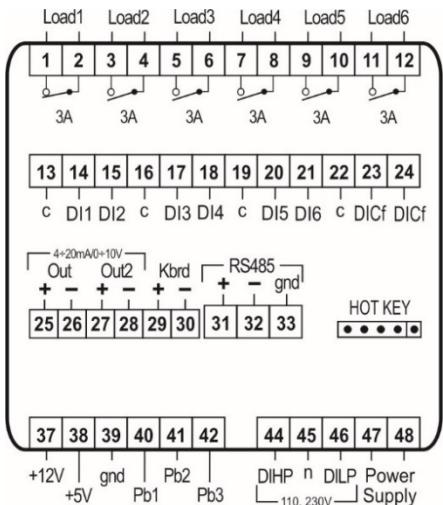
XC640D



XC645D



XC660D



5 MAIN ACCESSORIES

	XJ485USB-KIT USB-RS485 converter for PC connections
	HOT KEY Programming key
	XJ485CX Serial interface that converts the TTL output into an RS485 signal. It can be used to connect the unit to the controlling and supervising system. For XC600CX series
	WIZMATE PROG-TOOL KIT Programming kit for an easy and fast update of parameters
	VC660 Remote keyboard for XC600D controllers

	CWC15-KIT 2 disconnectable female connectors, 6-14 pins with wires 1,5m for XC645CX
	CWC30-KIT 2 disconnectable female connectors, 6-14 pins with wires 3m for XC645CX
	CW15-KIT 2 disconnectable female connectors, 12-14 pins with wires 1,5m for XC650CX
	CW25-KIT 2 disconnectable female connectors, 12-14 pins with wires 2,5m for XC650CX
	CABCJ15 Connector with 1,5m wires for XC600CX
	CABCJ30 Connector with 3m wires for XC600CX

6 PROBES

	PP11 2 wires transducer with 4÷20mA output and measurement range -0,5÷7bar (male or female fitting)
	PP30 2 wires transducer with 4÷20mA output and measurement range 0÷30bar (male or female fitting)
	PP60 2 wires transducer with 4÷20mA output and measurement range 0÷60bar (male or female fitting)
	NP4-67 NTC sensor, Pipemount fitting, diameter Ø4÷ Ø30mm, IP67, over-molded, copper head
	NT6-67 NTC sensor, Pipemount fitting, diameter Ø4÷ Ø30mm, IP67, over-molded, thermoplastic head

7 HOW to ORDER

X C 4 5 0 C X - A B C D E B

X C 6 4 5 C X - A B C D E

X C 6 5 0 C X - A B C D E B

A		B		C		D				E	
Power supply		Measurement Unit		Buzzer	Triac Tension		Analogue output 4÷20mA/0÷10V		Input		
0	12Vac/dc	C	°C	0	No	0*	110÷220V	No	C	NTC	
1	24Vac/dc	F	°F	1	Yes	1*	110÷220V	Yes	F	suction PP11; discharge PP30	
		B	bar			2*	24V	No	E	4÷20mA	
		P	psi			3*	24V	Yes	R	0÷5V ratiometric	
		K	KPA			4**	NO TRIAC	No			
						5**	NO TRIAC	Yes			

* Only for XC645CX

** Only for XC450CX and XC650CX

X C 6 _ _ D - A B C D E

A		B		C				D		E	
Power supply		Measurement Unit		Display on board		Remote display output		RS485 optoisolated		Input	
4	110Vac	C	°C	0*	No		Yes	1	No	C	NTC
5	230Vac	F	°F	1	Yes		No	3*	Si	F	suction PP11; discharge PP30
7	100÷240Vac	B	bar	2*	Yes		Yes			E	4÷20mA
		P	psi							R	0÷5V ratiometric
		K	KPA								

* Only with 100-240V power supply

8 PRICES

Contact our sales department for prices, quotations and further information.

9 AVAILABILITY and ORDERS

Models are available with standard delivery times.