ASCON TECNOLOGIC

EVERYTHING UNDER CONTROL

KUBE LINE

DYNAMIC COLOURS DISPLAY

THE COLOUR CHANGES ACCORDING TO PV/SP DEVIATION

VALVE CONTROLLER

COMPACT SIZE

- **Open/Closed** loop **Servomotor** drive;
- **Positioner** (pneumatic or electric) control outputs;
- With **Linear** or **Time proportional** control mode;
- **Real** or **Calculated Valve position** indication;
- **Potentiometer** input for valve **position detection**;
- **Automatic** potentiometer **calibration** (for startup time saving);
- **Self-learning** function for real servomotor **stroke time**;
- *evo*Tune - auto-tune PID parameters "push and forget";
- *evo* Green - for energy saving and easy alarm detection;
- *evo*Tool - programming key for up/down load parameters without PC.

FIELDS OF APPLICATION

- CERAMIC TUNNEL KILNS
- BRICK AND CERAMIC FURNACES
- GLASS BENDING FURNACES
- HEAT TREATMENT FURNACES

VALVE CONTROLLER

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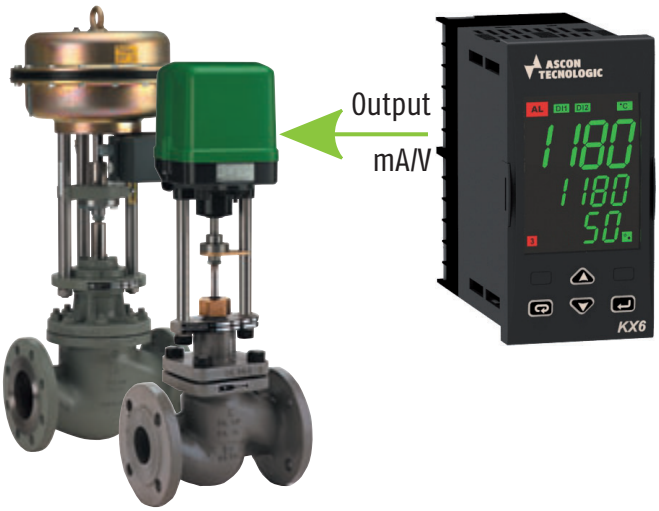
SERVOMOTOR DRIVE

Open loop control for motorized valves.
Potentiometer feedback for valve position indication (option).

I/P CONVERTERS/ELECTRIC POSITIONERS DRIVE

Control of valves with built-in electrical actuator or valves with electro-pneumatic actuator (mA/psi).



Valve position indication:
- **Real with potentiometer feedback;**
- **Calculated without the potentiometer.**

INVERTER SPEED REFERENCE

Speed reference signal to inverters.

TIME PROPORTIONAL (H OR H/C) CONTROL

Control of:

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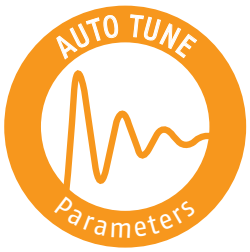
evoTUNE

evoTune is a technological evolution of the "classic" auto-tuning methods. Performs auto-tuning in all operating conditions.

At evoTune start-up the instrument evaluates the current situation (set point, current process measurements, etc.) and establishes the best tuning solution.

A Set point change, made during auto-tuning, restarts the process according to the new conditions.

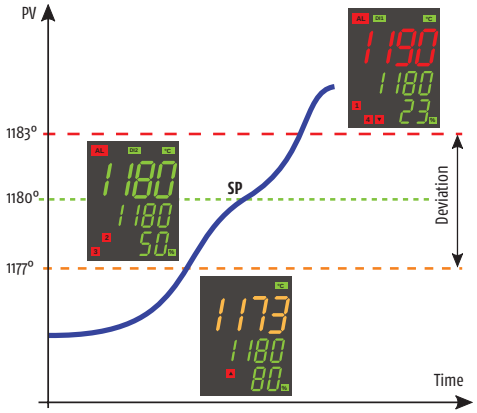


3 COLOUR DISPLAY

The colour of the main display changes depending on process value.

Color change thresholds are programmable and independent from alarms.

Immediate and intuitive process status acknowledgement, even at great distance. This function can be disabled by the user.



CUSTOMIZED PARAMETER SEQUENCE

Provide a user-defined operator interface has been, until now, a privilege of "custom" solutions.

KUBE Line allows to customize operator parameters making safe and easy the instrument use.

POTENTIOMETER SELF-CALIBRATION AND DIAGNOSTIC

Does not require constant operator supervision; just start the calibration from keyboard.

The instrument potentiometer diagnostic detects the following errors:

In calibration: Potentiometer reversed, No potentiometer and Calibration error (the middle display shows a dedicated message).

In Run time: Potentiometer malfunction (switches to the "Servo motor without potentiometer" control mode, icon starts flashing).

SERVOMOTOR TRAVEL TIME AUTO-LEARNING FUNCTION

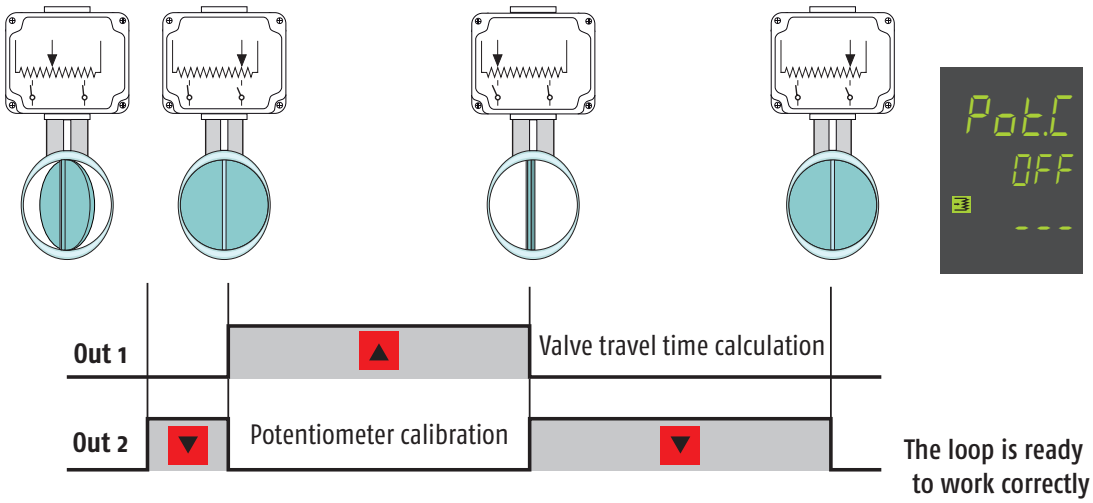
Automatic detection of real servomotor travel time between the min. and max. limits set by the user.

The right control with servomotor working at a reduced span.

To start the procedure select Pot.C = On

then push Enter

The rest of the process is fully automatic



The loop is ready to work correctly

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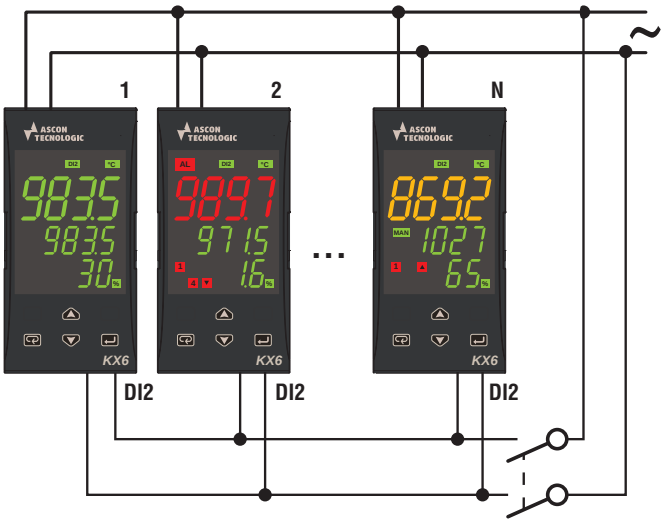
ISOLATED DIGITAL INPUT

A single digital command can change the status of several instruments: stand-by, set point selection (SP1/SP2) and much more.

The Digital Input 2 (DI2) is galvanically isolated.

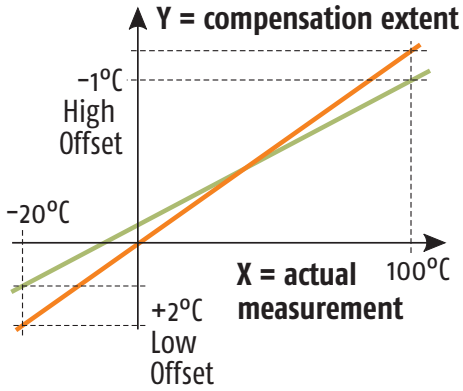


USER CALIBRATION

This function allows the equipment manufacturer to **calibrate the entire measurement chain** in order to compensate errors caused by:

- Sensor position;
- Sensor accuracy class;
- Instrument accuracy.

The "*User calibration*" **DOES NOT** change factory calibration and can be removed at any time.



evoGREEN ENERGY SAVING

This user selectable function allows to reduce energy consumption.
Once the function is activated, the display acts as follows:

- If no button is pressed within the user defined time, the display turns off and 4 display segments remain lit and alternate to report that the system is in operation;
- If an alarm is detected or a button is pressed, the display turns on again immediately.

ENPHASYS ON ALARM INDICATION

This function (selectable) allows to highlight the presence of alarms and process deviations from a great distance.

Very useful when more instruments are installed on the same panel.

Green LED segments = measure at Setpoint;

Amber LED segments = measure lower than Setpoint;

Red LED segments = measure higher than Setpoint;

The display switches back ON when an alarm occurs.

Normal operation

Alarm or
operator command

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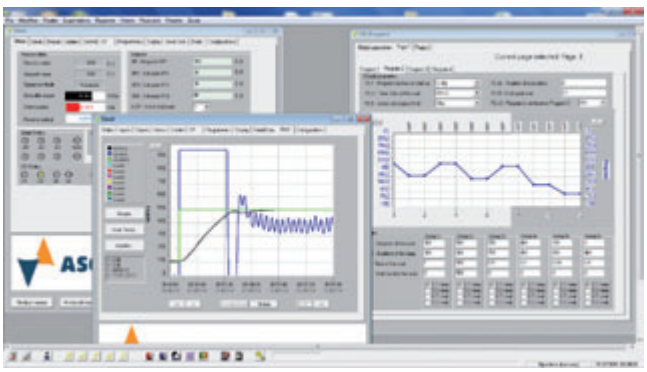
ACCESSORIES

A01 – Programming key

- A PC is NOT necessary to "copy and paste" a configuration (during production, startup or service);
- Copy an instrument configuration (to another key or a PC) even if the instrument is damaged (power supply or display not working);
- Configure/connect the instrument easily (even without a proper serial port) by using our configurator or a third party software;
- Configure the instrument safely from your desk (without supplying the instrument);
- Serial communication test (RS485);
- During startup, real time data monitoring allows easy and fast reaction (dynamic configurator);
- With a key preconfigured for a specific job, mistakes cannot be made by the operator. Just a buttonclick is required.

In other words you can:

- Copy the configuration from instrument to key, without a PC;
- Copy the configuration from key to instrument, without a PC;
- Use the key as USB/RS485 converter, with or without our SW;
- Use the key as USB/TTL converter, with or without our SW;
- Link a PC even if the instrument is not provided with an RS485 port.



Configuration software

Supplied free of charge, once loaded on the PC, provides:

- Easy configuration of an instrument;
- Upload and download previously saved configurations;
- Simplify the start-up, using the real time update of variables and parameters.

WinTec – Supervisor

Based on simple and flexible SCADA, it provides:

- Data acquisition;
- Centralized control;
- Alarm and recipes management;
- Trend;
- Report.

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VALVE CONTROLLER

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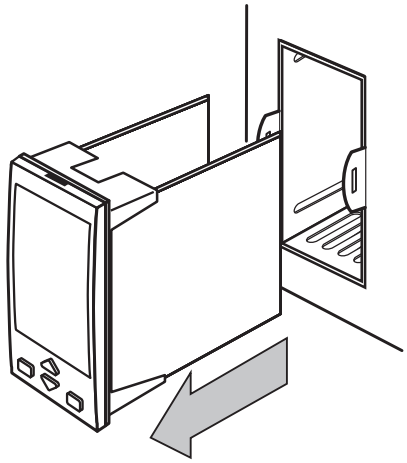
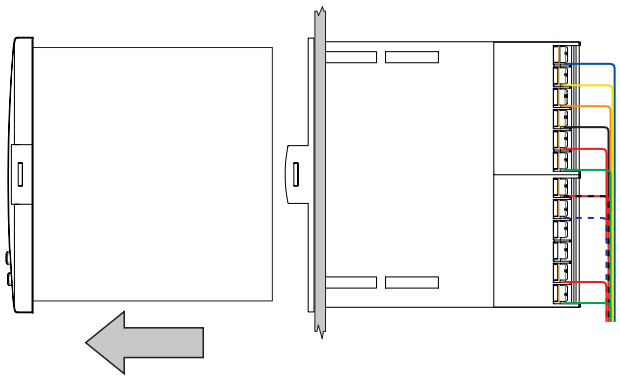
SPECIFICATIONS

DISPLAY	KX6	
3 displays, LED type	**Upper (main) display:**	15.5 dynamic three colours red, green and amber or 1 fixed selectable colour
	Central display:	4 digit height 10 mm (green colour)
	Lower display:	2 1/2 digit height 10 mm (green colour)
INPUTS		
Input 1 (configurable)	**Thermocouples:**	J (-50... +1000°C/-58... +1832°F), K (-50... +1370°C/-58... +2498°F), S/R (-50... +1760°C/-58... +3200°F), T (-70... +400°C/-94... +752°F)
	Linear signals:	0/4... 20mA
Measurement accuracy	±0.5% span ±1 digit, (±1% span ±1 digit for T/c type S)	
Input 2	Potentiometer 100 Ω... 10 kΩ (option)	
Digital inputs	**DI1:**	1 contact input
	DI2:	Isolated voltage input (24 VAC/DC or 110/230 VAC) (option)
OUTPUTS		
Up to four	**OUT1:**	Relay SPST-NO 2A/240 VAC or analogue 0/4... 20 mA, 0/2... 10 V galvanically isolated
	OUT2:	Relay SPST-NO 2A/240 VAC
	OUT3 and OUT4:	Relay SPST-NO 2A/240 VAC (for resistive loads)
FUNCTIONAL		
Control	PID single action (direct or reverse) for servomotor control or linear output (mA/V), PID Heating or Heating/Cooling action. On/Off, On/Off with Neutral Zone, Autotune, Selftune and *evo*Tune. Overshoot control	
Alarms	2 alarms (configurable as absolute, deviation and band alarm)	
Set Point	4 Set points selectable	
Serial communications	TTL (standard) + RS485 (optional), protocol: MODBUS RTU	
Communications speed	1200... 38400 baud selectable (8 bit + 1 stop bit, no parity)	
Evogreen	Time based Display switch-off, selectable	
Other functions	Potentiometer self-calibration	
	Auto learning servomotor stroke time	
GENERAL		
Power supply	100... 240 VAC/DC (-15... +10%), 50/60 Hz, power consumption 7 VA max.	
Temperature	**Operating:** 0... 50°C (32... 122°F); **Storage:** -20... +70°C (-4... +158°F);	
Relative humidity	20... 95 RH% with no condensation	
Front removable	Instrument removable from the case without unwiring or opening the cabinet (see picture below)	
Conformity	EN 61010-1, EN 61326	





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HOW TO ORDER

Order code

Model
KX6 - = Valve Controller

Power supply
H = 100... 240 VAC

Analogue input + digital input DI1 (standard)
B = J, K, R, S, T, mA

Output 1 + Output 2
I- = Output 1: 0/4... 20 mA, 0/2... 10 V; Output 2: Not available
MM = Output 1 + Output 2: Relays for servomotor SPST 2 A

Output 3
R = Relay SPST 2 A (resistive load)

Output 4
R = Relay SPST 2 A (resistive load)

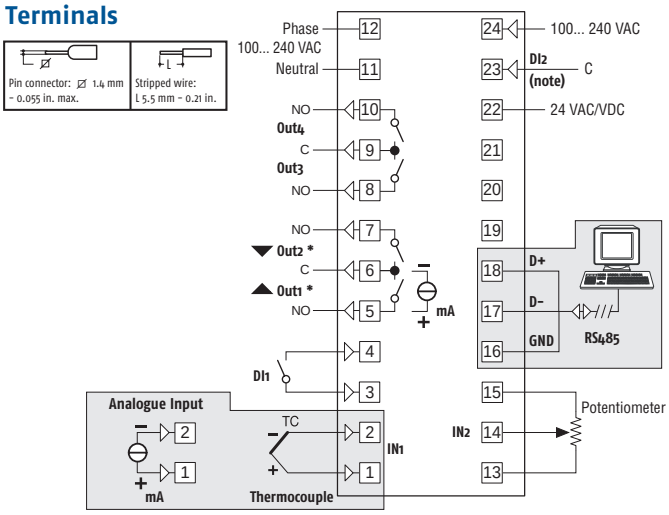
Options (the TTL Modbus port is always present)
- = Not available
C = Potentiometer input + Digital Input 2 + RS 485 Modbus
P = Potentiometer input + Digital Input 2
S = RS 485 Modbus

KX6-	H	B		R	R	

Note: Special versions have been developed for specific markets and requirements. Please contact our sales department for further information.

Electrical connections

Terminals



Note: The isolated DI2 Digital Input can be:
- Low level input driven by a 24 VAC/DC applied to terminals 22 and 23;
- High level input driven by a 100... 240 VAC applied to terminals 23 and 24.

WARNING!
The isolated DI2 Digital Input must be used **in only one** of the two available connections:
- Low level input;

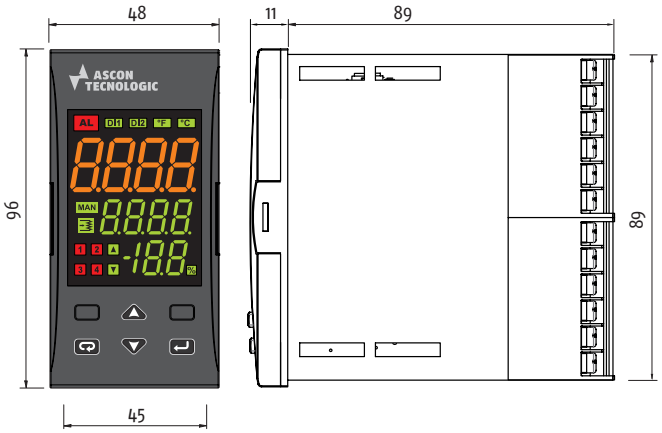
or
- High Level input.

*: For servomotor drive: OUT1 = Open, OUT2 = Close.

Mechanical characteristics

PARAMETER	
Housing	Self-extinguishing plastic UL 94 V0
Mounting	Front panel
Dimensions	48 x 96 x 89 mm (W x H x P)
Panel cut-out	45 x 89 (-0... +0.6 mm)
Weight	About 160 g
Terminals	24 terminals for cables from 2.5 mm² (AWG22... AWG14) on fixed terminal block with screw terminals
Protection degree	IP 65 panel mounted with gasket (IP20 for screw terminals) In conformity with En 60070-1 (internal use only)

Dimensions (mm)



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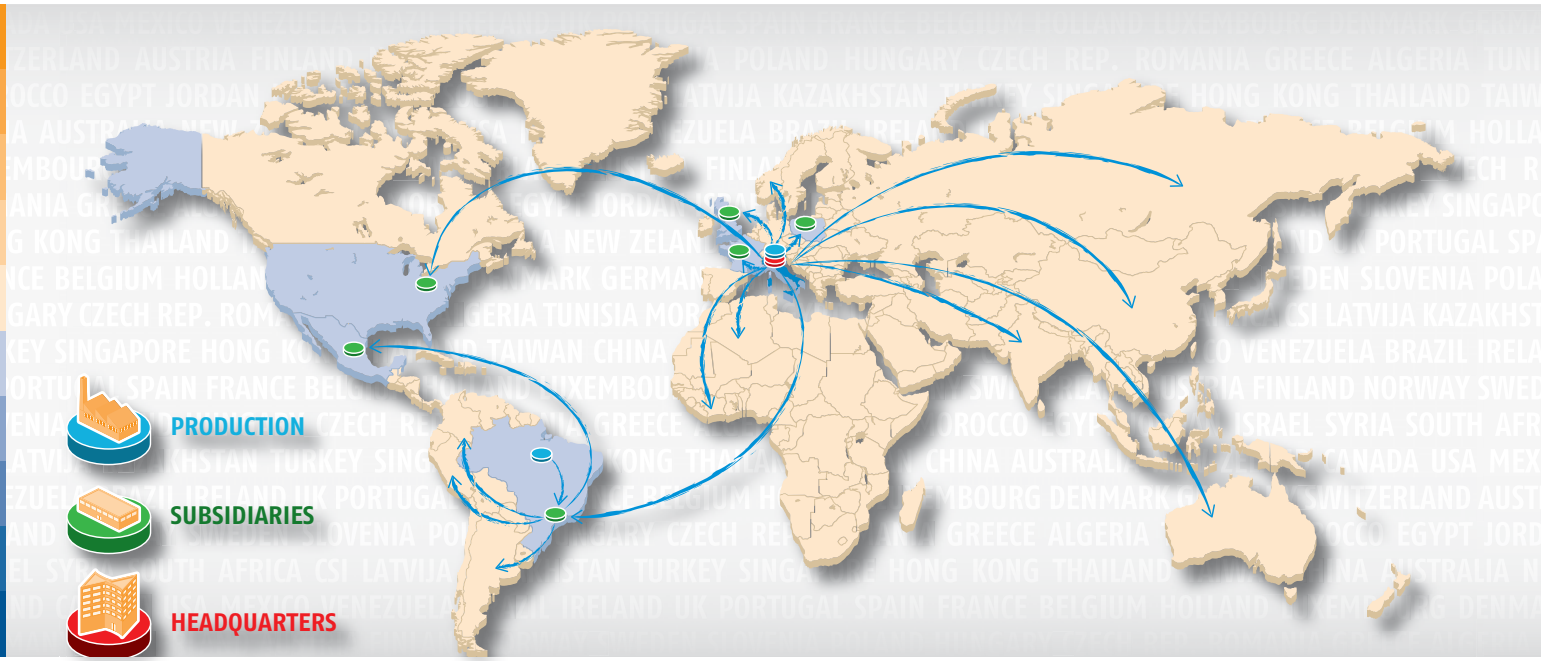

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COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV GL
= ISO 9001 =
= OHSAS 18001 =

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