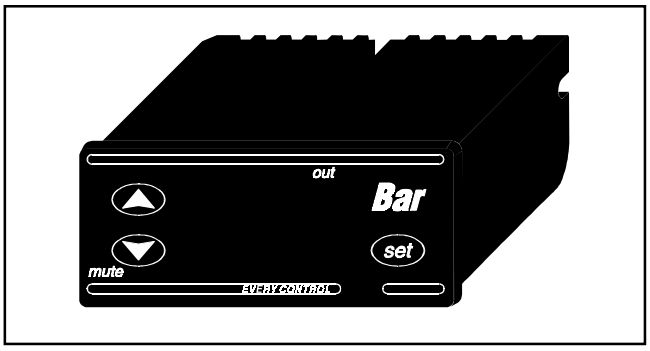


DIGITAL PRESSURE CONTROLLER
with one output

EC 3-533

GENERAL CHARACTERISTICS

*** Size: 74 x 32 mm.**

*** 12 or 12-24Vac/dc power- supply**

*** Alarm buzzer included**

*** Custom configuration through keyboard or Personal Computer**

*** Configuration parameters accessible through Password**

*** Easy integration with remote-assistance or remote-managing**

*** Three digits display, height: 12,5mm.**

*** Indication of pressure with decimal point**

*** One relay output (8A at 230 Vac)**

*** Two widely configurable pressure-alarms**

*** Setpoint locking facility**

EC 3-533 is a digital one output pressure controller, designed to work with current output (0-20 mA or 4-20 mA) 2 or 3 wires pressure transducers and it can provide the power-supply to the transducers as long as they are abled to work inside a range of supply-voltage between 9 an 20 V.

In factory, the instrument gets programmed to accept, at the input, one of the Every Control transducers (EC PRS 00, EC PRS 01, EC PRS 02 or EC PRS 03) that permit to cover a range of pressure between -0.5 and 250 bar; however, just changing some parameters it is possible to connect the instrument to other transducers.

The output can be easily programmed to activate at the decrease of pressure (reverse functioning) or to activate at the increase of pressure (direct functioning).

The SPDT relay output can manage (up to) 8A loads at 230 Vac and are supplied in standard version; as option, it is possible to request an output with low-voltage signal, suitable to drive the SSR modules (solid state relay).

Besides that, through some parameters programming, it is possible to submit the output activation to a series of delays, in order to guarantee a proper use of the connected load.

The acoustic alarm, normally mounted in this instrument, and the flashing display, have been concepted in order to catch user' s attention in case of not proper functioning: defective probe, corrupted memory-data or probe-signal outside the limits.

The instrument is provided of **two pressure alarms**, that can be disabled, each of them is configurable in six different ways of working; the intervention of each alarm activates the acoustic alarm with intermittent beep, at the same time the display will show "AL 1" (or "AL 2") alternated to the measured pressure value.

MOUNTING

For a proper mounting, take note of the attached indications; be sure that the conditions of use (voltage of power-supply, environment temperature, humidity) are inside the instrument working limits.

Do not overload the relay-output, keep inside the indicated limits.

Voltage at terminal 12 is not stabilized. If the transducer is powered by the instrument, it should be verified that in all working conditions, especially for high output signal, **the voltage on the transducer** does not drop below the minimum working value, in order to guarantee a correct measure.

WARNING: The instrument is not protected from overloads; so it is necessary to give the output the suitable protections, besides that, according to the source of power-supply, find a protection able to limit the quantity of current absorbed by the instrument in case of failure.

CONFIGURATION

There are two levels of configuration (LEVEL 2 is protected by PASSWORD):

Level 1

Push	▲	and	▼			at the same time, for 4 seconds at least : the symbol "PA" appear on the display
Push	▲	or	▼			to select the parameter to modify at LEVEL 1
Push	set	and	▲	or	▼	to modify the selected parameter.

Level 2

From LEVEL 1 push			▲	or	▼	to selected the parameter "PA"
Push	set	and	▲	or	▼	to set "-19"
Push	▲	and	▼			at the same time for 4 seconds at least : the first parameter of LEVEL 2 will appear on the display.
Push	▲	or	▼			to selected the parameter to modify at LEVEL 2
Push	set	and	▲	or	▼	to modify the selected parameter.

How to leave "Configuration"

Push	▲	and	▼	at the same time for 4 seconds at least or wait for 50 seconds without operating on the keyboard, or stop and restart the instrument.

USE

In normal operating conditions the instrument displays the value read by the probe. Push set to the display the actual Setpoint value; the led "**out**" will flash.

To change the Setpoint value push set and ▲ or ▼ .

If the parameter rA5 has value 1, the Setpoint can not be modified. After changing, release the key set as last.

SIGNALS AND ALARMS

The led "**out**", when lighted, indicates that the **output** is activated; if it is flashing it indicates that the instrument is in phase of delay-temporisation at the output.

"**E0**" flashing on the display and buzzer beeping intermittent means one of the following defects: probe-signal outside the limits, defective probe or wrong connection (in case of not connected probe, the indication "**E0**" will appear if the parameter is /0=30 (4-20 mA) and "**0**" if the parameter is /0=31 (0-20 mA)).

"**E2**" flashing on the display and buzzer beeping intermittent : failure of memorised configuration-data; try to switch the power-supply off, and then, switch it on.

If the display indicates a proper value alternated to the signal "**AL 1**" (or "**AL 2**") and the buzzer beeps intermittent, it means that the pressure read by the probe is off the limits previously set in parameters "**AA1**" and/or "**Ab1**".

CONFIGURATION PARAMETERS

	CODE	PARAMETER	DESCRIPTION	MIN	MAX	U.M.	ST
(1)	PA	PASSWORD		-55	+99	----	
	/	**PROBE**					
	/0	kind of probe	30 = 4-20 mA ; 31 = 0-20 mA	30	31	----	30
(1)	/1	calibration (measure offset)		-9.0	+10	bar	0
	/2	digital filter (speed response)	0=0s; 1=0.4s; 2=1.2s; 3=3.0s; 4=8.0s; 5=19.8s; 6=48.0s	0	6	----	3
	/4	without leading zeros	0=NO; 1=YES	0	1	----	1
	/5	with decimal point	0=NO; 1=YES	0	1	----	0
	/6	start of scale for input 0-20 mA or 4-20 mA	corrispondent to input's minimum value	-99	999	bar	see table 2
	/7	end of scale for input 0-20 mA or 4-20 mA	corrispondent to input's maximum value	-99	999	bar	see table 2
	rA	**PRESSURE REGULATOR**					
(1)	rA0	regulator hysteresis (differential)		-99	+999	bar	-0.2
	rA1	minimum setpoint admitted		-99	+999	bar	see table 2
	rA2	maximum setpoint admitted		-99	+999	bar	see table 2
	rA3	output action	0=active for high pressure (direct); 1=active for low pressure (reverse)	0	1	----	1
	rA4	hysteresis selection	0=asymmetric; 1=symmetric	0	1	----	0
	rA5	setpoint adjustement locking	0=unlocked; 1=locked	0	1	----	0
	CA	**OUTPUT ACTIVATION DELAY**					
	CA0	output activation delay since instrument power-on		0	999	sec	0
	CA1	after start delay		0	999	sec	0
	CA2	after stop delay		0	999	sec	0
	CA3	relay output status in case of probe failure	0=OFF; 1=ON	0	1	----	0
	CA4	ON and OFF delay	0=no delay; 1=3sec	0	1	----	0
	AA/Ab	**ALARM**	**AA=refered to alarm 1; Ab=refered to alarm 2**				
	AA/Ab0	alarm hysteresis (differential)		1	+99	bar	0
	AA/Ab1	alarm setpoint		-99	+999	bar	0
	AA/Ab3	alarm disabling time since instrument power-on		0	999	min	0
	AA/Ab4	alarm mode		see table 1			1
	L	**NETWORK CONNECTION**					
	L1	instrument address		1	15	----	1
	L2	instrument group		0	7	----	0

notes

(1) = configuration parameter on LEVEL 1

N.B. On request, it is possible to configure the instrument with different unit of measure.

The transducers pressure ranges are to be considered as " **relative to atmospheric pressure** ";
the unit of measure is **bar** (1 bar = 0.1 MPa; 1 MPa = 10 bar).

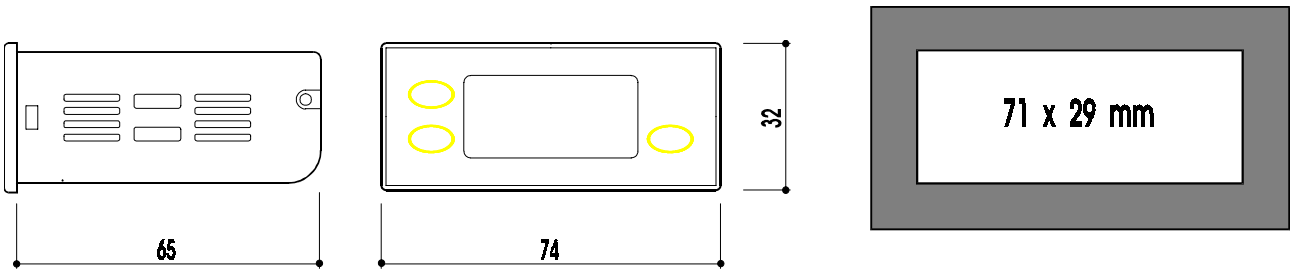
TABLE 1

parameter AA/Ab4	alarm mode
1	disabled
2	absolute minimum alarm
3	absolute maximum alarm
4	minimum alarm relative to setpoint 1
5	maximum alarm relative to setpoint1
6	minimum alarm relative to setpoint 1 with automatic enabling and recompute
7	maximum allarm relative to setpoint 1 with automatic enabling and recompute

TABLE 2

connected transducer	range (bar)	par. /6 (bar)	par. /7 (bar)	par. rA1 (bar)	par. rA2 (bar)
EC PRS 00	-0.5÷7	-0.5	7	-0.5	7
EC PRS 01	0÷25	0	25	0	25
EC PRS 02	0÷30	0	30	0	30
EC PRS 03	0÷250	0	250	0	250
CUSTOM	configurable according to the needs				

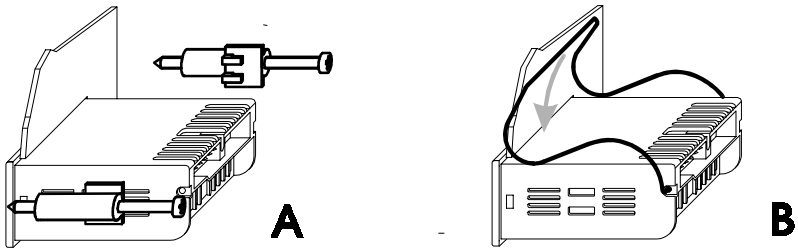
SIZE AND PIERCING TEMPLATE



OPTIONS OF MOUNTING

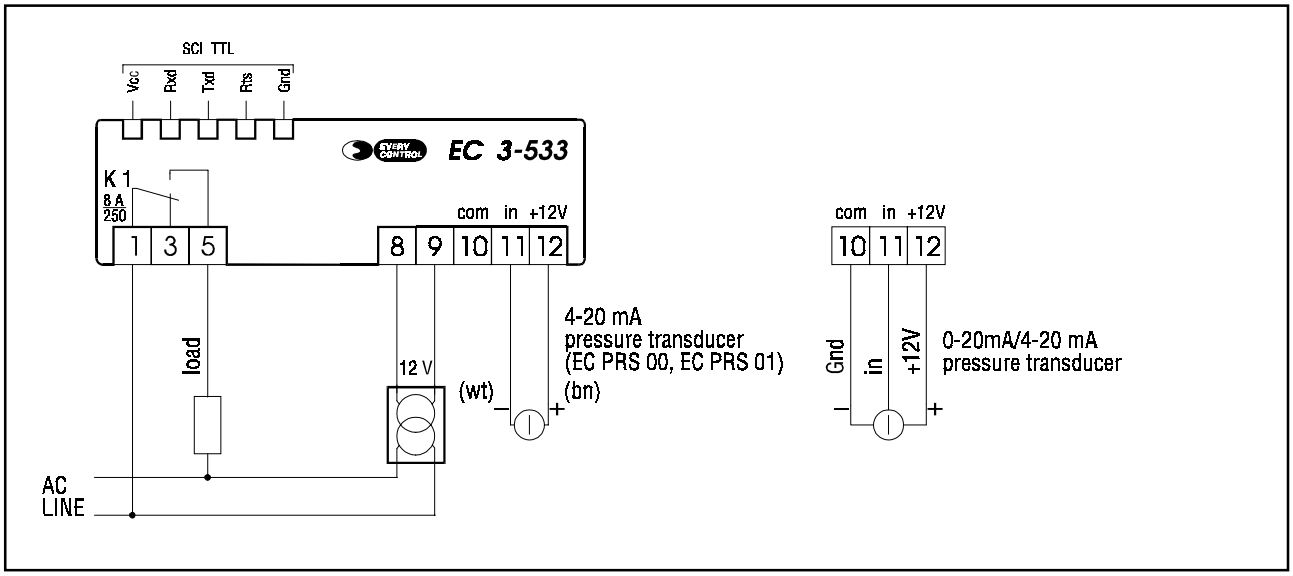
- Screw-brackets (A) .
- Spring-bracket (B).

The panel thickness will be between 1 and 5 mm.



ELECTRICAL CONNECTIONS

Example of typical application



ELECTRO-MECHANICAL CHARACTERISTICS

Box: Self-extinguishing plastic (PC-ABS) according to UL94 V-0.
Size: 74 x 32 x 65 mm.
Mounting : Panel-mounting through fixing brackets.
Environment temperature: from 0 to + 60°C.
Humidity : 10...90% not condensing.
Connections : Screw connectors.
Insulation-class : II (With transformer, according to EN 60742).
Power-supply : 12 Vac/dc (Standard) or 12...24Vac/dc (on request); 1,5 W.
Inputs for measure: 1 configurable for pressure transducers with current output (4-20 mA or 0-20 mA).
Input resistance: 56 ohm.
Transducer power-supply: available at terminal 12 (voltage 12V +30%, -20%).

Range of measure:
from -0.5 to 7 bar (if programmed for EC PRS 00),
from 0 to 25 bar (if programmed for EC PRS 01),
from 0 to 30 bar (if programmed for EC PRS 02),
from 0 to 250 bar (if programmed for EC PRS 03).
Resolution: 0.1 bar or 1 bar.
Setpoint adjustement: possible in the entire range of measure.
Display: 3 digits display, output-status indicator.
Alarm buzzer: incorporated.
Outputs: one SPDT 8A/250V relay for the output 1 (K1)
Serial port for data exchange : TTL with EVCOBUS (standard protocol).

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