

DIMENSIONAL DATA

OVERALL DIMENSIONS

The dimensions are expressed in millimetres and inches (third-scale drawing).

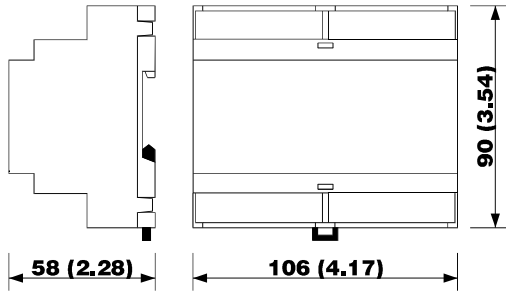


Fig. 3
ds66me.wmf

INSTALLATION

WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER

On DIN EN 50022 standard rail according with DIN 43880 norms (third-scale drawing).

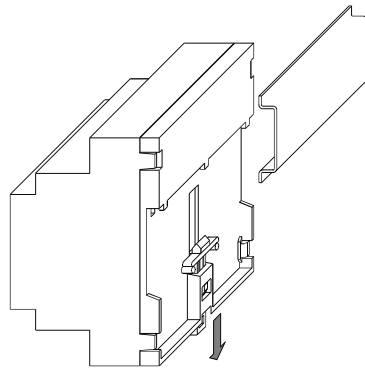


Fig. 4
ms66m.wmf

ELECTRICAL CONNECTION

CONNECTIONS TO DERIVE

Instance of typical application.

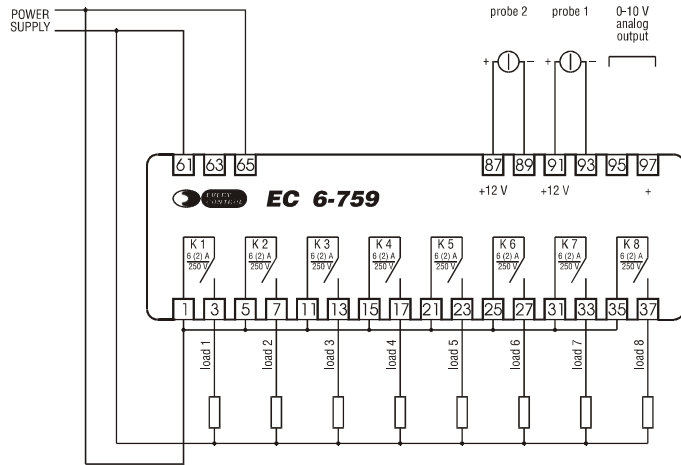


Fig. 5
c6-759e.wmf

BUILDER DATA

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EC 6-759

ON-OFF eight relay outputs digital pressure controller with analog output

Operating instructions

Version 1.01 of 30th September 2004

File ec6759_eng_v1.01.pdf

PT

IMPORTANT:

The use of this new instrument is easy; but for safety reasons, it is important read these instructions carefully before the installation or before the use and follow all additional informations.

It is very important keep these instructions with the instrument for future consultations.

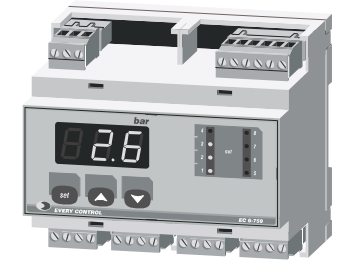


Fig. 1
f6-759.wmf

GENERAL INFORMATIONS

WHAT IS THE USE

EC 6-759 is an ON-OFF eight relay outputs digital pressure controller with analog output.

In factory the instrument gets preset to accept at the measure inputs 2 wires 4-20 mA pressure transducers (it is possible to set the reading scale).

Some parameters permit to manage the analog output according with one's requirements, to set each relay output for "high or low pressure" functioning, to establish the pressure to associate to each relay output (pressure read by the probe 1 or pressure read by the probe 2).

EC 6-759 is available in the 106 x 90 mm (4.17 x 3.54 in., 6 DIN modules) case and it is studied for DIN standard rail installation.

GETTING STARTED

INSTALLATION

EC 6-759 was studied for DIN EN 50022 standard rail installation according with DIN 43880 norms (the overall dimensions are related in Fig. 3, the fixing system suggested by the builder is related in Fig. 4).

ADDITIONAL INFORMATIONS

- verify if the using conditions (ambient temperature, humidity, etc.) are within the limits indicated by the builder (see the chapter TECHNICAL DATA)
- install the instrument in a location with a suitable ventilation, to avoid the inter-thermal overheating of the instrument
- do not install the instrument near surfaces that can obstruct the air-grating (carpets, covers, etc.), heating sources (radiators, hot air ducts, etc.), locations subject to direct sunlight, rain, humidity, excessive dust, mechanical vibrations or bumps, devices with strong magnets (microwave ovens, big speakers, etc.)
- according with the safety norms, the protection against possible contacts with electrical parts and parts protected with functional insulation only must be ensured through a correct installation procedure of the instrument; all parts that ensure the protection must be fixed so that they can not be removed if not with a tool.

ELECTRICAL CONNECTION

EC 6-759 is provided with six extractable screw terminal blocks for cables up to 2.5 mm² (0.38in², for the connection to the power supply, measure inputs, relay outputs and analog output) located on the instrument frontal panel (the connections to derive are related in Fig. 5 and they are checkable on the polyester label stuck on the instrument case).

ADDITIONAL INFORMATIONS

- if the instrument is brought from a cold to a warm location, the humidity may condense inside the instrument; wait about an hour before supply the instrument
- verify if the operating power supply voltage, electrical frequency and power of the instrument correspond to the local power supply (see the chapter TECHNICAL DATA)
- do not supply more instruments with the same transformer
- if the instrument is installed on a vehicle, its power supply must be derived directly from the battery of the vehicle
- give the instrument a protection able to limit the current absorbed in case of failure
- the instrument remains connected to the local power supply as long as the terminals 61 and 65 are derived to the local power supply, even if the instrument is apparently turned off
- give the relay outputs a protection able to protect them against short circuit and overload
- do not try to repair the instrument; for the repairs apply to highly qualified staff
- if you have any questions or problems concerning the instrument please consult Every Control (see the chapter BUILDER DATA).

USE

PRELIMINARY INFORMATIONS

After derived the connections related in Fig. 5, the instrument executes an autotest.

Passed eight seconds the instrument automatically moves to the normal functioning.

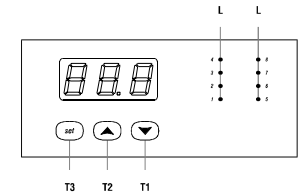


Fig. 2
iu6758.wmf

During the normal functioning the instrument displays the pressure read by the probe 1, except what established with the parameter /AL.

If an alarm should be active the instrument displays the alarm code as long as the cause that has given it does not disappear (see the chapter SIGNALS AND ALARMS).

EC 6-759 is provided with some configuration parameters that get stored in a non volatile memory and that permit to set the instrument according with one's requirements (see the chapter CONFIGURABILITY).

The output K 1 is associated to the first setpoint, ... the output K 8 to the eighth, they remain activated continuously as long as the pressure read by the probe 1 reaches the working setpoints and when it rises above (if the outputs were set for "high pressure" functioning) or it falls below (if the outputs were set for "low pressure" functioning) the respective working setpoint of the hysteresis value (differential) the outputs get reactivated, except what established with the parameters of the family rP.

To display the pressure read by the probe 2 keep pushed the key T3.

ANALOG OUTPUT

The 0-10 V analog output is associated to the pressure read by the probe 1, except what established with the parameter /Au.

The analog output signal is proportional to the pressure read by the probe 1 in every point between the pressure values corresponding to 0 and 10 V.

CONFIGURATION PARAMETERS SETTING

Configuration parameters are arranged on two levels, to protect the most tricky settings against undesirable violations and they are arranged in families that can be recognized through the initial letter of the label.

To gain access to the first level keep pushed at the same time for four seconds at least the keys T1 and T2 (passed four seconds the instrument displays the label PA).

To select a parameter of the first level push and release over and over the key T1 or T2 as long as the instrument displays the label of the desired parameter.

To modify the parameter value keep pushed the key T3 (the instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the instrument displays the desired value (keeping pushed the key T1 or T2 the value gets decreased or increased more quickly); after the modification release the key T3 last (to the release of the key T3 the instrument displays the label of the parameter again).

To gain access to the second level enter inside the first level and select the label PA.

Keep pushed the key T3 (the instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the instrument displays -19 (keeping pushed the key T1 or T2 the value gets decreased or increased more quickly); after the modification release the key T3 last (to the release of the key T3 the instrument displays the label PA again); keep pushed at the same time for four seconds at least the keys T1 and T2 (passed four seconds the instrument displays the first parameter of the second level).

To select a parameter of the second level push and release over and over the key T1 or T2 as

long as the instrument displays the label of the desired parameter.

To modify the parameter value keep pushed the key **T3** (the instrument displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the instrument displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the instrument displays the label of the parameter again).

To turn out from the configuration parameters setting procedure keep pushed at the same time for four seconds at least the keys **T1** and **T2** or do not operate with the keys for fifty seconds at least (time-out exit).

ADDITIONAL INFORMATIONS

- for the whole period of a corrupted memory data alarm the access to the configuration parameters setting procedure is refused
- the modification of a parameter value which unit of measure is the hour or the minute or the second has not immediate effect; to obtain this effect it must not be executed during the course of the value
- the modification of the parameters /6u, /7u, rP 1 ... 8 value has immediate effect; to avoid damages to the connected users, it must be executed with the users not connected
- the modification of the parameter /Au value has not immediate effect; to obtain this effect, after the modification turn OFF and turn ON again the instrument
- the configuration parameters values get stored in a non volatile memory even if a lack of power supply happens.

CONFIGURABILITY

CONFIGURATION PARAMETERS

LABEL	MIN.	MAX.	U.M.	ST.	PASSWORD
PA	-90	100	---	0	password (\$)

It is the password that permits to gain access to the second level.

LABEL	MIN.	MAX.	U.M.	ST.	MEASURE INPUTS
/1A	-9.9	+9.9	bar	0.0	probe 1 calibration (\$)

It establishes a threshold to add algebraically to the signal coming from the probe 1 (for instance to correct the signal).

/1b	-9.9	+9.9	bar	0.0	probe 2 calibration (\$))
-----	------	------	-----	-----	----------------------------

It establishes a threshold to add algebraically to the signal coming from the probe 2 (for instance to correct the signal).

/2	0	3	---	0	digital filter
----	---	---	-----	---	----------------

It establishes a time constant to apply to the signals coming from the measure inputs, as indicated:

0 =	0 sec.	1 =	0.4 sec.
2 =	1.2 sec.	3 =	3.0 sec.

/5	0	2	---	1	decimal point
----	---	---	-----	---	---------------

It establishes the decimal point position when a pressure gets displayed, as indicated:

- 0 = the decimal point gets not displayed
- 1 = the decimal point gets displayed on the dozens display
- 2 = the decimal point gets displayed on the hundreds display.

/6A	-9.9	+99.9	points	0.0	lower end of scale for 4-20 mA input (it coincides with the minimum calibration value of the transducer 1)
-----	------	-------	--------	-----	------------------------------------------------------------------------------------------------------------

It establishes the lower end of scale for 4-20 mA input and it must coincide with the minimum calibration value of the transducer 1.

/7A	-9.9	+99.9	points	+7.0	upper end of scale for 4-20 mA input (it coincides with the maximum calibration value of the transducer 1)
-----	------	-------	--------	------	------------------------------------------------------------------------------------------------------------

It establishes the upper end of scale for 4-20 mA input and it must coincide with the maximum calibration value of the transducer 1.

/6b	-9.9	+99.9	points	0.0	lower end of scale for 4-20 mA input (it coincides with the minimum calibration value of the transducer 2)
-----	------	-------	--------	-----	------------------------------------------------------------------------------------------------------------

It establishes the lower end of scale for 4-20 mA input and it must coincide with the minimum calibration value of the transducer 2.

/7b	-9.9	+99.9	points	+7.0	upper end of scale for 4-20 mA input (it coincides with the maximum calibration value of the transducer 2)
-----	------	-------	--------	------	------------------------------------------------------------------------------------------------------------

It establishes the upper end of scale for 4-20 mA input and it must coincide with the maximum calibration value of the transducer 2.

/6u	-9.9	+99.9	bar	0.0	pressure value corresponding to 0 V of the analog output
-----	------	-------	-----	-----	----------------------------------------------------------

It establishes the pressure value corresponding to 0 V of the analog output according with the modality established with the parameter /Au.

/7u	-9.9	+99.9	bar	+99.9	pressure value corresponding to 10 V of the analog output
-----	------	-------	-----	-------	-----------------------------------------------------------

It establishes the pressure value corresponding to 10 V of the analog output according with the modality established with the parameter /Au.

/Au	0	1	---	0	pressure to associate to the analog output
-----	---	---	-----	---	--------------------------------------------

It establishes the pressure to associate to the analog output, as indicated:

0 = pressure read by the probe 1

1 = pressure read by the probe 2.

LABEL	MIN.	MAX.	U.M.	ST.	ON-OFF PRESSURE REGULATOR ASSOCIATED RESPECTIVELY TO THE FIRST WORKING SETPOINT AND TO THE OUTPUT K 1, ... AND TO THE EIGHTH WORKING SETPOINT AND TO THE OUTPUT K 8
r 0	+0.1	+9.9	bar	+5.0	hysteresis (differential) (\$))

It establishes the hysteresis (differential) relative to the working setpoints.

rC1	-9.9	+99.9	bar	+10.0	first working setpoint
-----	------	-------	-----	-------	------------------------

It establishes the pressure associated to the output K 1 according with the modality established with the parameter rP1.

rC2	-9.9	+99.9	bar	+10.0	second working setpoint
-----	------	-------	-----	-------	-------------------------

It establishes the pressure associated to the output K 2 according with the modality established with the parameter rP2.

rC3	-9.9	+99.9	bar	+10.0	third working setpoint
-----	------	-------	-----	-------	------------------------

It establishes the pressure associated to the output K 3 according with the modality established with the parameter rP3.

rC4	-9.9	+99.9	bar	+10.0	fourth working setpoint
-----	------	-------	-----	-------	-------------------------

It establishes the pressure associated to the output K 4 according with the modality established with the parameter rP4.

rC5	-9.9	+99.9	bar	+10.0	fifth working setpoint
-----	------	-------	-----	-------	------------------------

It establishes the pressure associated to the output K 5 according with the modality established with the parameter rP5.

rC6	-9.9	+99.9	bar	+10.0	sixth working setpoint
-----	------	-------	-----	-------	------------------------

It establishes the pressure associated to the output K 6 according with the modality established with the parameter rP6.

rC7	-9.9	+99.9	bar	+10.0	seventh working setpoint
-----	------	-------	-----	-------	--------------------------

It establishes the pressure associated to the output K 7 according with the modality established with the parameter rP7.

rC8	-9.9	+99.9	bar	+10.0	eighth working setpoint
-----	------	-------	-----	-------	-------------------------

It establishes the pressure associated to the output K 8 according with the modality established with the parameter rP8.

rd1	0	1	---	0	"high or low pressure" functioning of the output K 1
-----	---	---	-----	---	------------------------------------------------------

It establishes the output K 1 functioning, as indicated:

0 = "high pressure" functioning

1 = "low pressure" functioning.

rd2	0	1	---	0	"high or low pressure" functioning of the output K 2
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rd3	0	1	---	0	"high or low pressure" functioning of the output K 3
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rd4	0	1	---	0	"high or low pressure" functioning of the output K 4
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rd5	0	1	---	0	"high or low pressure" functioning of the output K 5
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rd6	0	1	---	0	"high or low pressure" functioning of the output K 6
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rd7	0	1	---	0	"high or low pressure" functioning of the output K 7
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rd8	0	1	---	0	"high or low pressure" functioning of the output K 8
-----	---	---	-----	---	------------------------------------------------------

It has the same significance of the parameter rd1.

rP1	0	1	---	0	pressure to associate to the output K 1
-----	---	---	-----	---	-----------------------------------------

It establishes the pressure to associate to the output K 1, as indicated:

0 = pressure read by the probe 1

1 = pressure read by the probe 2.

rP2	0	1	---	0	pressure to associate to the output K 2
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

rP3	0	1	---	0	pressure to associate to the output K 3
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

rP4	0	1	---	0	pressure to associate to the output K 4
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

rP5	0	1	---	0	pressure to associate to the output K 5
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

rP6	0	1	---	0	pressure to associate to the output K 6
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

rP7	0	1	---	0	pressure to associate to the output K 7
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

rP8	0	1	---	0	pressure to associate to the output K 8
-----	---	---	-----	---	-----------------------------------------

It has the same significance of the parameter rP1.

r 4	0	1	---	0	kind of hysteresis (kind of differential)
-----	---	---	-----	---	-------------------------------------------

It establishes the kind of hysteresis (kind of differential), as indicated:

0 = asymmetrical

1 = symmetrical.

LABEL	MIN.	MAX.	U.M.	ST.	RELAY OUTPUTS PROTECTION
/AL	0	1	---	0	pressure to display during the normal functioning

It establishes the pressure to display during the normal functioning, as indicated:

0 = pressure read by the probe 1

1 = pressure read by the probe 2.

LABEL	MIN.	MAX.	U.M.	ST.	RELAY OUTPUTS PROTECTION
C 0	0	999	sec.	0	disabling time to the outputs activation from the instrument start

It establishes the time that disables the outputs activation from the moment of the instrument start.

C 1	0	999	sec.	0	disabling time to the output activation from the previous activation
-----	---	-----	------	---	----------------------------------------------------------------------

It establishes the time that disables the output activation from the moment of the previous output activation.

C 2	0	999	sec.	0	disabling time to the output activation from the previous deactivation
-----	---	-----	------	---	------------------------------------------------------------------------

It establishes the time that disables the output activation from the moment of the previous output deactivation.

C 3	0	1	---	0	outputs status during a probe failure alarm
-----	---	---	-----	---	---------------------------------------------

It establishes the status the outputs are forced during a probe failure alarm according to the modality established with parameters belonging to family rP, as indicated:

0 = during a probe failure alarm the outputs will be forced OFF, as indicated:

1 = during a probe failure alarm output K8 will be forced ON; the remaining outputs will be forced OFF.

ADDITIONAL INFORMATIONS

- the symbol (\$) indicates that the parameter is of the first level.

SIGNALS AND ALARMS

SIGNALS

If the LED **L1 ... 8** is turned ON it means that the output K 1 ... 8 is activated.

If the LED **L1 ... 8** flashes it means that a count of a disabling time to the output K 1 ... 8 activation is running (see the parameters C 0, C 1 and C 2).

If the instrument displays the indication "**888**" and the LED **L1, ...** and **L8** are turned ON it means that the autotest is running.

ALARMS

If the instrument displays the indication "**E 2**" (**corrupted memory data alarm**) it means that there is a corruption of the configuration data in the memory (turn OFF and turn ON again the instrument; if to the turning ON again the alarm does not disappear the instrument must be replaced); during this alarm the access to the configuration parameters setting procedure is refused, the outputs K 1 ... 8 get forced to the status OFF and the analog output signal is 0 V.

If the instrument displays the indication "**EOA**" (**probe 1 failure alarm**) it means that: the kind of connected probe 1 is not proper (verify the kind of connected probe 1), the probe 1 is faulty (verify the probe 1 integrity), there is a mistake in the instrument-probe 1 connection (verify the instrument-probe 1 connection integrity), the pressure read by the probe 1 is outside the limits permitted by the probe 1 in use (verify that the pressure near the probe 1 be inside the limits permitted by the probe 1); during this alarm if the parameters rP1 ... 8 have value 0 the outputs K 1 ... 8 get forced to the status established with the parameter C 3 and if the parameter /Au has value 0 the analog output signal is 0 V.

If the instrument displays the indication "**E0b**" (**probe 2 failure alarm**) it means that there is one of the faults saw in the previous case but referred to the probe 2; during this alarm if the parameters rP1 ... 8 have value 1 the outputs K 1 ... 8 get forced to the status established with the parameter C 3 and if the parameter /Au has value 1 the analog output signal is 0 V.

If the instrument displays the pressure read by the probe 2 and the indication "**EOA**" every four seconds (**probe 1 failure alarm**) it means that there is one of the faults saw in the previous case but referred to the probe 1 and that the pressure read by the probe 1 is associated to a relay output; during this alarm if the parameters rP1 ... 8 have value 0 the outputs K 1 ... 8 get forced to the status established with the parameter C 3 and if the parameter /Au has value 0 the analog output signal is 0 V.

If the instrument displays the pressure read by the probe 1 and the indication "**E0b**" every four seconds (**probe 2 failure alarm**) it means that there is one of the faults saw in the previous case but referred to the probe 2 and that the pressure read by the probe 2 is associated to a relay output; during this alarm if the parameters rP1 ... 8 have value 1 the outputs K 1 ... 8 get forced to the status established with the parameter C 3 and if the parameter /Au has value 1 the analog output signal is 0 V.

TECHNICAL DATA

TECHNICAL DATA

Case:	plastic grey (PPO), self-extinguishing.
Size:	106 x 90 x 58 mm (4.17 x 3.54 x 2.28 in., 6 DIN modules).
Installation:	on DIN EN 50022 standard rail installation according with DIN 43880 norms.
Type of protection:	IP 40.
Connections:	extractable screw terminal blocks with pitch 5 mm (0.19 in., power supply, measure inputs, relay outputs and analog output) for cables up to 2.5 mm ² (0.38 in. ²).
Ambient temperature:	from 0 to +60 °C (+32 to +140 °F; 10 ... 90 % of not condensing relative humidity).
Power supply:	230 Vac, 50/60 Hz, 3 VA.
Insulation class:	II.
Measure inputs:	2 for 2 wires 4-20 mA pressure transducers (Ri 56 Ohm); at terminal 87 and 91 +12 V (+50 %, -15 %) are available to supply the transducers.

Working range:	configurable.
Setting range:	from -9.9 to +99.9 bar.
Resolution:	configurable for 0.1 or 1 or 10 bar.
Display:	3-digit display 12.5 mm (0.49 in.) high red LED display with automatic decimal point and minus sign, relay outputs status indicators.

Outputs:
eight NO contact 6 (2) A @ 250 Vac relays for regulation loads management and one 0-10 V analog output configurable to be associated to the pressure read by the probe 1 or 2.