Control Unit

M702

Features

- Powerful microprocessor based control unit
- Great operative flexibility
- Extreme accuracy
- Ideal for the visualization and output calibration of signals coming from sensors or analysers
- Linearizations, computing and compensations between signals
- Easy data programming through pre-selected menu
- Optional autocalibration routine keyboard selectable with zero and span output contacts
- Isolated 4-20 mA output (optional RS 232 C)
- Free contacts for alarms and logic of control
- Versions for safe area or in Explosion-Proof housing for hazardous area Zone 1 / Zone 21

M702 Control Unit

Description

Powerful microprocessor-based system (keyboard configurable) allowing selection of range, type of alarms, set point and it can receive 3 analogical input signals (2 of them can be used for cross sensitivity compensation or special functions).

On request, a system to perform zero and/or full scale autocalibration can be provided.

The instrument has been designed to re-transmit the 4-20 mA signal proportional to the set range.

Optional RS232C output can directly drive a printer with selectable timing and baud rate. Isolated current output is standard.

Mounting

The unit can be housed in a compact Noryl DIN case for panel mounting (standard), in a IP 65 case with clear front door for wall mounting or in explosion proof housing for mounting in classified area.

Single or dual alarm

A single alarm (high or low) or dual alarms (1 high and 1 low, 2 high or 2 low) can be provided as option. Each alarm consists of: 1) a keyboard configurable alarm threshold; 2) a LED, which is lit when an alarm is detected; 3) a relay contact that can be used to actuate an external signal or to start a shutdown process device.

Auxiliary Functions

Other options with diagnostic and calibration fault contacts are available (contact Adev technical office).

Display

It provides a continuous readout indication of the requested variable in engineering units (e.g. %), of alarms set point and alarms condition.

Control unit main elements

- 4 digits display for variable visualization.
- 3 digits auxiliary display for channel visualization.
- Led for alarms status indication.
- Led for instrument programming status indication.
- Two increase—decrease push buttons.
- One **F** key for display selection.
- One **A** key to enter into programming.

Conformity to European Normative

In accordance to Low Voltage directive 2006/95/EC
In accordance to EMC directive 2004/108/EC:
- EN 61000-6-2
- EN 61000-6-3
- EN 50270

Technical Specifications

Inputs

Input signals: 3 adjustable and linearizable from 10 mV with accuracy better than 1:10000
Scanning time: 0,5 seconds
Conversion type: double ramp
Resolution: 1/20000
Input impedance: 100 Mohm typical
Isolation between channels: none

Alarms

Contact rating: N.O./N.C. 1 A @ 250 Vac (define the alarm contact condition -soldering type- at order. Refer to suffix E).
Set: programmable on 100% of range
Relay status: normally triggered / not triggered
Number of alarms: 2 on concentration. Wrong calibration and fault alarms available.
Threshold: high or low to be selected at order; field adjustable by soldering jumpers. Refer to suffix D1 and D2.

Serial interface

Standard: RS 232 C
Check lines: CTS
Speed: 9600, 4800, 2400, 1200. 600, 300 baud/sec.
Parity: even, odd, none
Isolation: 1500 V

Analogical output

Output: 4-20 mA isolated proportional to 100% of range on maximum load of 500 Ω
Total Range (over range): 3.6 - 24 mA
Resolution: 1/3800
Isolation: 1500 V
Uploading time: 1 second

Printing messages

Periodical printing: programmable in hours, min.
Alarm printing: automatic printing
Printing message: year, month, day, hour, minutes, % (Ch1), temperature (Ch2, Ch3), alarm 1 status, alarm 2 status

Ranges of variables

Read out in engineering units, in accordance to customer specification.

Ambient requirements

Working temperature: 0 ÷ 50 °C
Storage temperature: -10 ÷ +75°C
Humidity: 10 ÷ 90% without condense

Power Supply:

220/110 Vac; 50/60 Hz; 5 VA

Physical specification

Dimensions: 96 x 96 x 185 mm.
Weight: about 0,5 Kg.
Mounting: panel cut out

Clock

Clock type: Gregorian
Back-up: by means of lithium battery
Battery life: 1 year in case of power supply absence. Accuracy: 1 second/month

Explosion-proof housing

Protection mode:
II 2 GD EEx d IIC T6 IP65 T85°C T$_{amb}$ -20 ÷ +60°C
for hazardous area ZONE 1 / ZONE 21

Installation:
Wall or panel
Dimensions:
240 x 240 x 300 mm

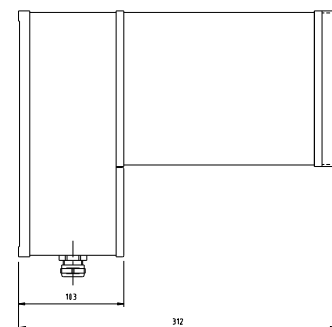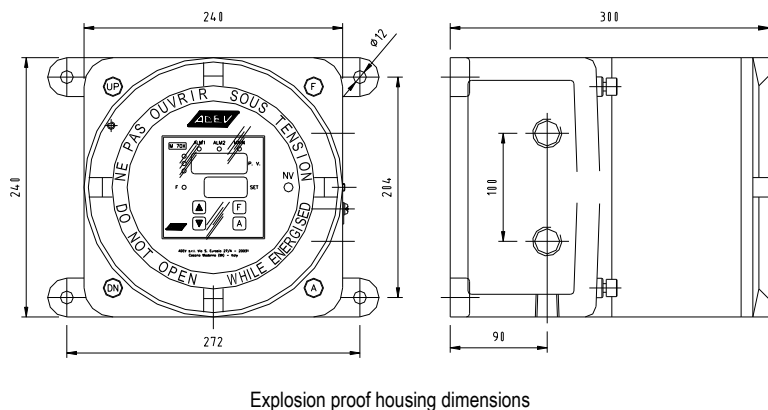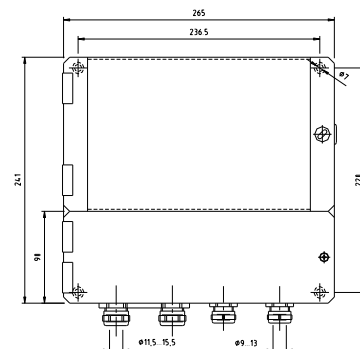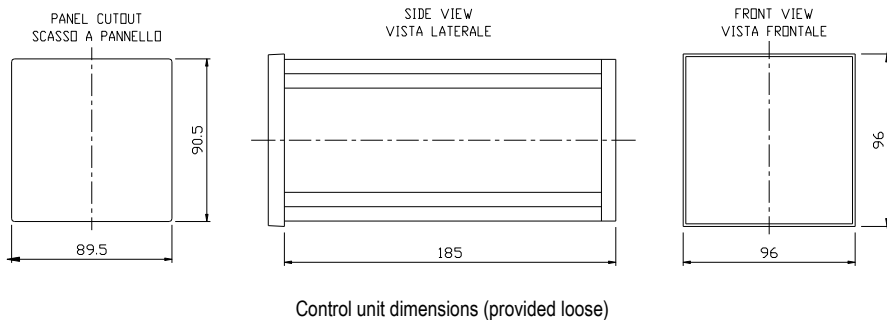Adjustable without opening the housing

3 Gk 3/4" holes

IP65 housing

Installation:
Wall or panel

Dimensions:
265 x 241 x 312 mm
Clear front door

Dimensional Specifica-

PANEL CUTOUT
SCASSO A PANNELLO

90.5

89.5

SIDE VIEW
VISTA LATERALE

185

FRONT VIEW
VISTA FRONTALE

96

96

Control unit dimensions (provided loose)

265
236.5
241
228
91
Ø11.5..15.5   Ø9..13

240
Ø12
240
204
272

300
100
90

183
312

Explosion proof housing dimensions

IP65 housing dimensions

Ordering M702

A - B - C - D1 - D2 - E - F - G - H

Suffix A - Line voltage
2   230 V 50/60 Hz
4   115 V 50/60 Hz

Suffix B - Type of sensor combined with
S   On specification ᵃ⁾

Suffix C - Range
S   On specification ᵇ⁾

Suffix D1 - Alarm threshold
0   None
1   1 low alarm
2   1 high alarm
3   1 high alarm + 1 low alarm
4   2 low alarms
5   2 high alarms
9   On specification

Suffix D2 - Wrong calibration and fault alarms
0   None
1   Wrong calibration alarm shared with an alarm threshold
2   Fault alarm shared with an alarm threshold
3   Wrong calibration alarm on dedicated relay
4   Fault alarm on dedicated relay
5   Wrong calibration alarm shared with fault alarm
9   On specification

Suffix E – Alarm contacts
0   None
1   Closed in alarm condition
2   Open in alarm condition

Suffix F - Serial output
0   NO
1   RS 232 C + internal clock

Suffix G– Control unit configuration
1   Provided loose for mounting in a cut out 89,5 x 90,5 mm
2   Mounted in IP65 housing
3   Mounted in EEx-d housing
9   On specification

Suffix H - Autocalibration
0   NO
1   Autocalibration
2   Autocalibration + autocalibration start inlet free contact
3   Autocalibration + autocalibration start inlet free contact with calibration in progress free contact
4   calibration in progress free contact (for manual calibration)

Notes:

a)   Specify the type of input, at which channel it is related, or the type of Adev sensing unit used. Specify zero and full scale in engineering units related to the electrical signal, or range and model of the sensing unit.

b)   It's necessary to specify the wanted range on display and output for each channel.

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