INSTALLATION MANUAL

QUICK WIRING

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LINE PER FLOOR (UP TO 8 FLOORS) PAGE 08
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Universal-Encoder

DEUM

POSITION INDICATOR ENCODER INSTALLATION MANUAL

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QUICK WIRING

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1 PRODUCT DESCRIPTION

DEUM.M16 encoder allows interfacing controllers with line per floor and binary formats with DMG/MAD programmable display series and voice annunciator.

DEUM encoder can either be mounted in the machine room or inside the car operating panel. If mounting in Machine room, only four wires are required to connect DEUM encoder with the PI.

The main specifications of the DEUM.M16 are as follows:

- Power supply: 12/24 Vdc
- Position input: 12 - 120V ac/dc
- Link with DMG's 4-wire serial format
- Possibility to automatically manage a floor detection kit independent from the control panel.

1.1 - Main features

Input protocols: 1 line per floor • 1 wire per segment • Binary/Gray 6 bit

- Self diagnosis: internal LED + messages on position indicator
- Different scrolling / no scrolling arrows control depending upon the elevator movement
- Encoders are programmed by MAD or can be programmed directly on site through the two pushbutton ADV and PRG
- "Energy saving" mode to save power when the system is idle

1.2 - Technical specifications

Power supply	12/24V dc
Max. absorbed power	50 mA max
Dimensions	100x115x40 mm
Weight	150 gr.
Fixing	*Snap fixings on DIN rails*
Power supply position input	**DEUM.M16** 12 - 120V ac/dc *Opto-insulated*
Common position input	**DEUM.M16** *Two independent commons for position/signals*
Common arrows	**DEUM.M16** *Parted from the position inputs*
Annunciator trigger	**DEUM.M16** *Atomatic/manual Trigger*
Direction arrows on display	**DEUM.M16** *Scrolling / not scrolling, depending upon the elevator direction*

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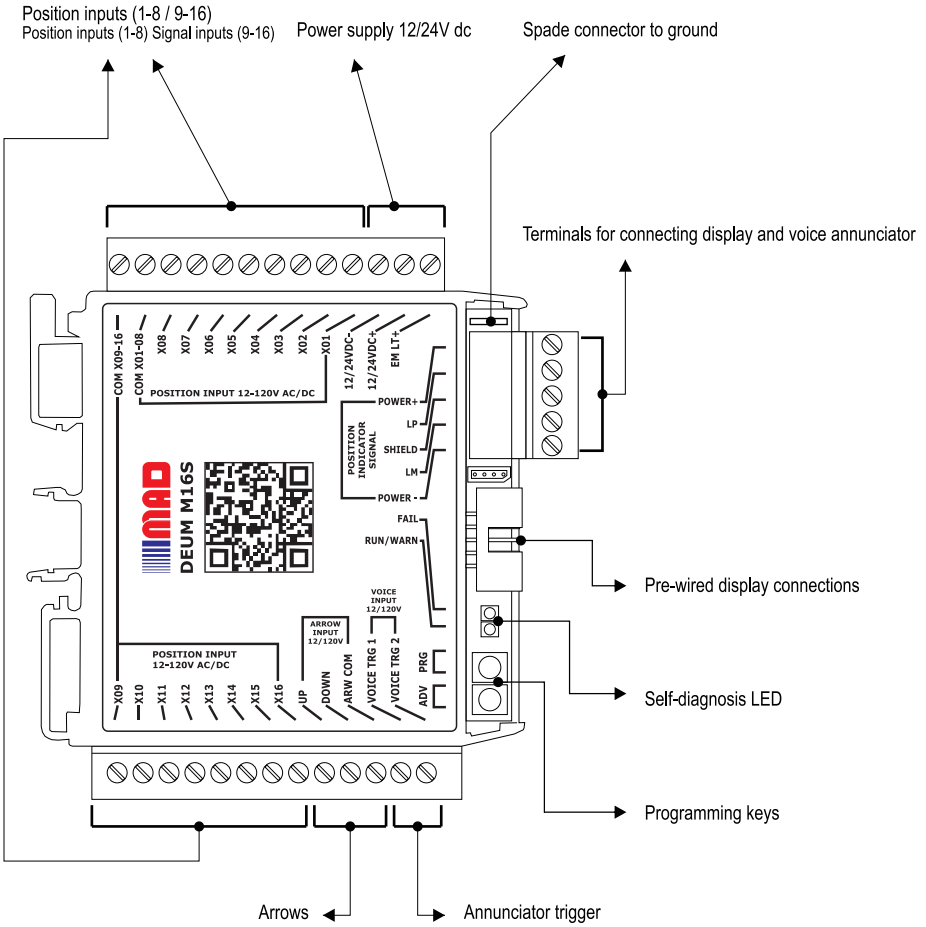
2 CONNECTIONS

DEUM.M16



BINARY SIGNAL FORMAT SET UP

2.1 WIRING GUIDE (BINARY SIGNAL)

- DEUM encoder is used to interface controller with binary PI format with DMG/MAD position indicators.
- DEUM encoder can either be mounted in the machine room or inside the car operating panel. If mounting in Machine room, only four wires are required to connect the DEUM encoder with the PI.
- Power up the DEUM driver by connecting 12/24VDC power to terminals **+12/24VDC** and **-12/24VDC.**
  Note: This is represented by ALIM+ and ALIM- on previous versions
- Connect the binary signal common wire from your controller to terminal "**COM X01-08**".
- Connect each binary signal/bit to terminals **X01** through **X05. X01** representing the first binary bit
- Connect your common wire for your special/priority messages to terminal **COM X09-16** on DEUM units.
- Connect the special messages signal wires to terminals **X09** through **X16**. Below are default messages:

  X09 → FIRE SERVICE
  X10 → INSPECTION
  X11 → INDEPENDENT SERVICE
  X12 → N/A
  X13 → OVER LOAD
  X14 → SLEEP MODE/POWER SAVING MODE FOR POSITION INDICATOR
  X15 → DOOR CLOSING
  X16 → EMERGENCY POWER

- Connect your arrow common to terminal **ARR_COM**, and the arrow signal wires to **UP** and **DOWN** as labeled.
- To activate voice annunciations, supply voltage to **VOICE TRG1 AND VOICE TRG2** on the DEUM unit. Your door limit switch or door zone landing switch can be used to engage this.
  Note: This is represented as TRG_1 AND TRG_2 on previous version DEUM units.
- Connect **power+** and **power-** from the opposite side of the DEUM driver to **power supply +** and **–** respectively on the position indicator.
  Note: This is represented by ALIM+ and ALIM- on previous versions.
- Connect the terminals labeled **LP** and **LM** on the DEUM unit (**LINE+** and **LINE-** on previous version of DEUM units) to **LP** and **LM** inputs on the position indicator. This represents signal inputs.
  Note: This is represented by RS485P and RS485M on previous versions of Mosaic Matisse Position Indicator.

MAD programs all DEUM units to match the signal formats i.e. binary or line per floor as requested by our clients. It is also programmed to match the floor markings on each car.

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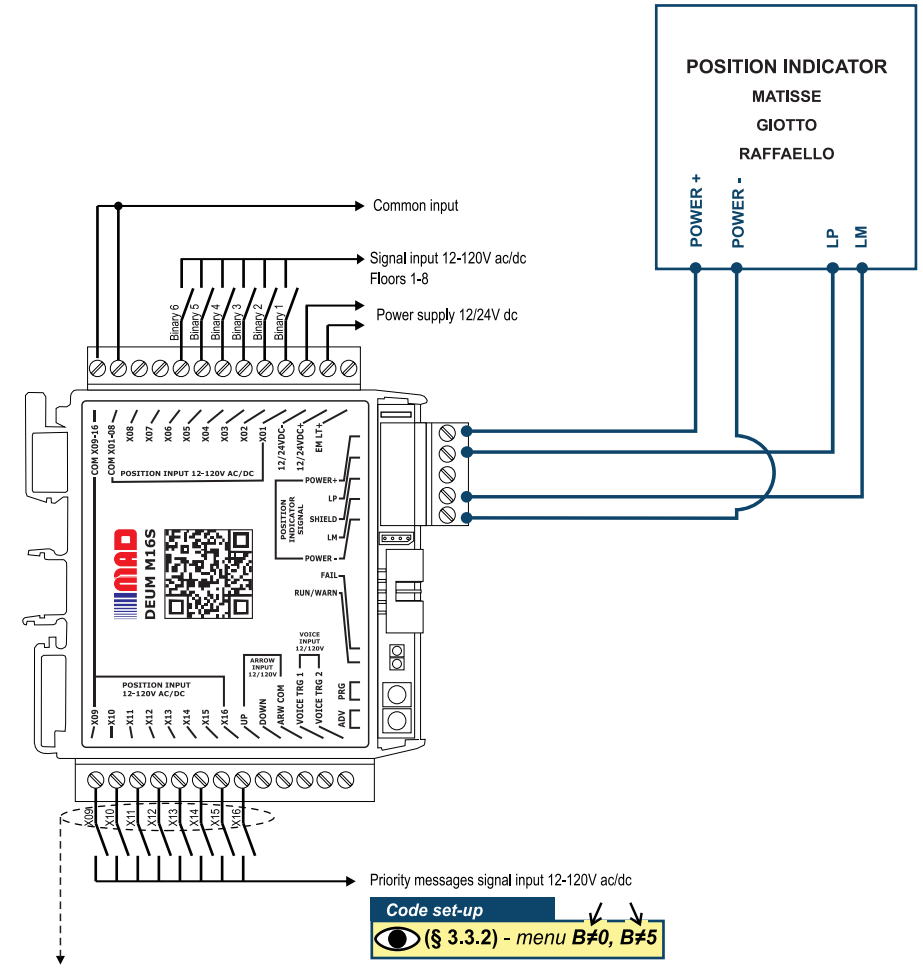
BINARY SIGNAL FORMAT SET UP



Code set-up
(§ 3.3.2) - *menu* ***B=1/7***

B=1 — Gray code (X01÷X08) + indicators (X10÷X14)

B=7 — Binary (X01÷X08) + indicators (X10÷X14)

Code set-up
(§ 3.3.2) - *menu* ***B≠0, B≠5***

- X09 - FIRE MAN SERVICE
- X10 - INSPECTION SERVICE
- X11 - INDEPENDENT SERVICE
- X12 - N/A
- X13 - OVERLOAD
- X14 - SLEEP MODE
- X15 - NUDGING - DOOR CLOSE ALARM
- X16 - EMERGENCY POWER OPERATION

LINE PER FLOOR SET UP WITH UP TO 8 FLOORS

2.2 WIRING GUIDE (LINE PER FLOOR SET UP WITH UP TO 8 FLOORS)

- DEUM encoder is used to interface controller with line per floor PI format with DMG/MAD position indicators.
- DEUM encoder can either be mounted in the machine room or inside the car operating panel. If mounting in Machine room, only four wires are required to connect the DEUM encoder with the PI.
- Power up the DEUM driver by connecting 12/24VDC power to terminals **+12/24VDC** and **-12/24VDC**.
  Note: This is represented by ALIM+ and ALIM- on previous versions.
- Connect the position input common/line common wire to terminal "**COM X01-08**".
- Connect each line to terminals **X01** through **X08. X01** representing the lowest floor.
- Connect your common wire for your special/priority messages to terminal **COM X09-16** on DEUM unit.
- Connect the special messages signal wires to terminals **X09** through **X16**. Below are default messages:

  X09 → FIRE SERVICE
  X10 → INSPECTION
  X11 → INDEPENDENT SERVICE
  X12 → N/A
  X13 → OVERLOAD
  X14 → SLEEP MODE/POWER SAVING MODE FOR POSITION INDICATOR
  X15 → DOOR CLOSING
  X16 → EMERGENCY POWER

- Connect your arrow common to terminal **ARR_COM**, and the arrow signal wires to **UP** and **DOWN** as labeled.
- To activate voice annunciations, supply voltage to **VOICE TRG1 AND VOICE TRG2** on the DEUM unit. Your door limit switch or door zone landing switch can be used to engage this.
  Note: This is represented as TRG_1 AND TRG_2 on previous version DEUM units.
- Connect **power+** and **power-** from the opposite side of the DEUM driver to **power supply +** and **–** respectively on the position indicator.
  Note: This is represented by ALIM+ and ALIM- on previous versions.
- Connect the terminals labeled **LP** and **LM** on the DEUM unit (**LINE+** and **LINE-** on previous version of DEUM units) to **LP** and **LM** inputs on the position indicator. This represents signal inputs.
  Note: This is represented by RS485P and RS485M on previous versions of Mosaic Matisse Position Indicator.

MAD programs all DEUM units to match the signal formats i.e. binary or line per floor as requested by our clients. It is also programmed to match the floor markings on each car.

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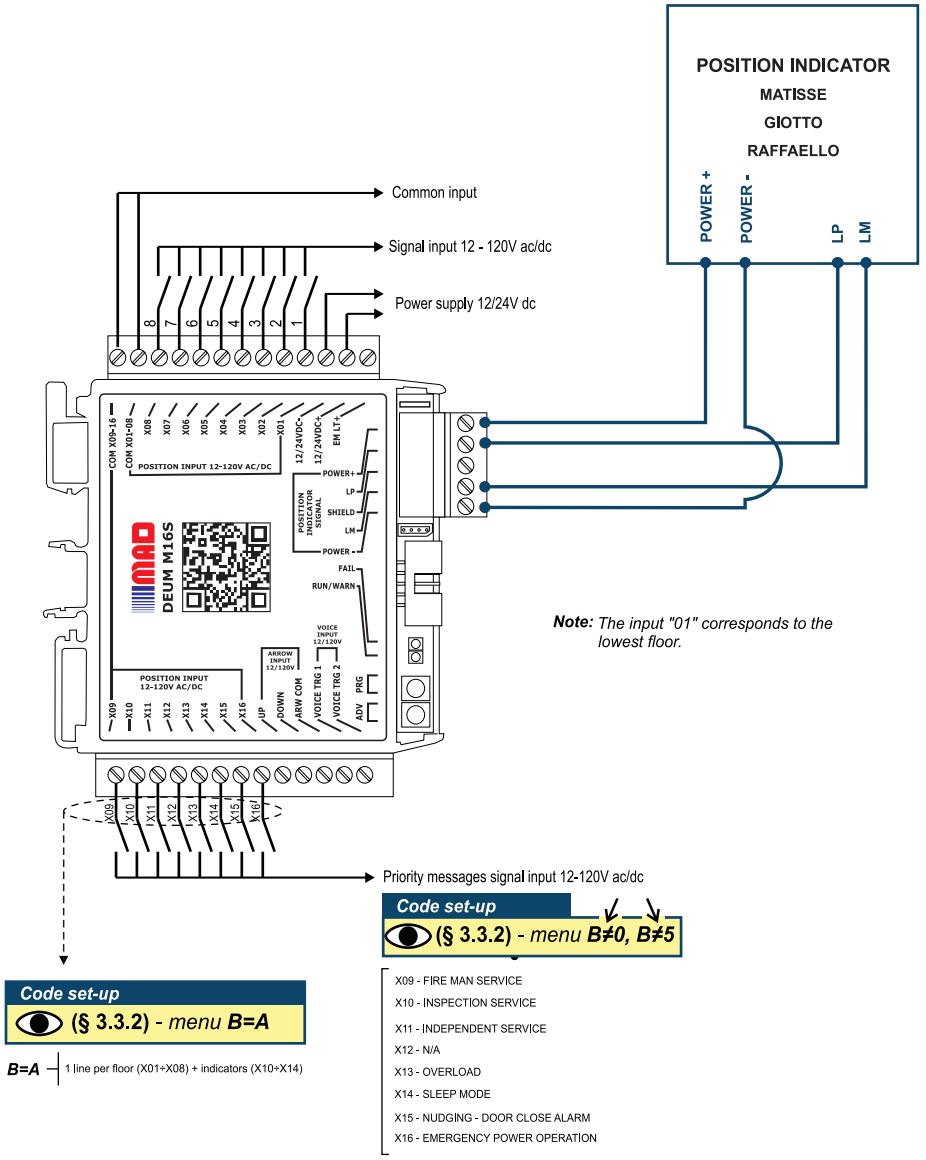
LINE PER FLOOR SET UP WITH UP TO 8 FLOORS



Note: *The input "01" corresponds to the lowest floor.*

Code set-up

(§ 3.3.2) - *menu* ***B=A***

B=A — 1 line per floor (X01÷X08) + indicators (X10÷X14)

Code set-up

(§ 3.3.2) - *menu* ***B≠0, B≠5***

- X09 - FIRE MAN SERVICE
- X10 - INSPECTION SERVICE
- X11 - INDEPENDENT SERVICE
- X12 - N/A
- X13 - OVERLOAD
- X14 - SLEEP MODE
- X15 - NUDGING - DOOR CLOSE ALARM
- X16 - EMERGENCY POWER OPERATION

LINE PER FLOOR SET UP WITH 9 - 16 FLOORS

2.3 WIRING GUIDE (LINE PER FLOOR SET UP WITH 9 - 16 FLOORS)

- DEUM encoder is used to interface controller with line per floor PI format with DMG/MAD position indicators.
- DEUM encoder can either be mounted in the machine room or inside the car operating panel. If mounting in Machine room, only four wires are required to connect the DEUM encoder with the PI.
- Power up the DEUM driver by connecting **12/24VDC** power to terminals **+12/24VDC** and -**12/24VDC**.

  Note: This is represented by ALIM+ and ALIM- on previous versions.
- Connect the position input common/line common wire to both terminals **"COM X01-08"** and **"COM X09-16.**
- Connect each line to terminals **X01** through **X16. X01** representing the lowest floor.
- Connect your arrow common to terminal **ARR_COM**, and the arrow signal wires to **UP** and **DOWN** as labeled.
- To activate voice annunciations, supply voltage to **VOICE TRG1** and **VOICE TRG2** on the DEUM unit. Your door limit switch or door zone landing switch can be used to engage this.

  Note: This is represented as TRG_1 AND TRG_2 on previous version DEUM units.

Priority/specialty messages become deactivated on the DEUM unit when using the DEUM driver on cars serving 9 to 16 floors. If priority/specialty messages are required priority/specialty message signal wires need to be wired directly to the PI.

See separate Position Indicator schematics/manual for details. (Supplied with Position indicator)

- Connect **power+** and **power-** from the opposite side of the DEUM driver to **power supply +** and **–** respectively on the position indicator.

  Note: This is represented by ALIM+ and ALIM- on previous versions.
- Connect the terminals labeled **LP** and **LM** on the DEUM unit (**LINE+** and **LINE-** on previous version of DEUM units) to **LP** and **LM** on the serial input board of the position indicator. This represents signal inputs.

  Note: This is represented by RS485P and RS485M on previous versions of Mosaic Matisse Position Indicator.

MAD programs all DEUM units to match the signal formats i.e. binary or line per floor as requested by our clients. It is also programmed to match the floor markings on each car.

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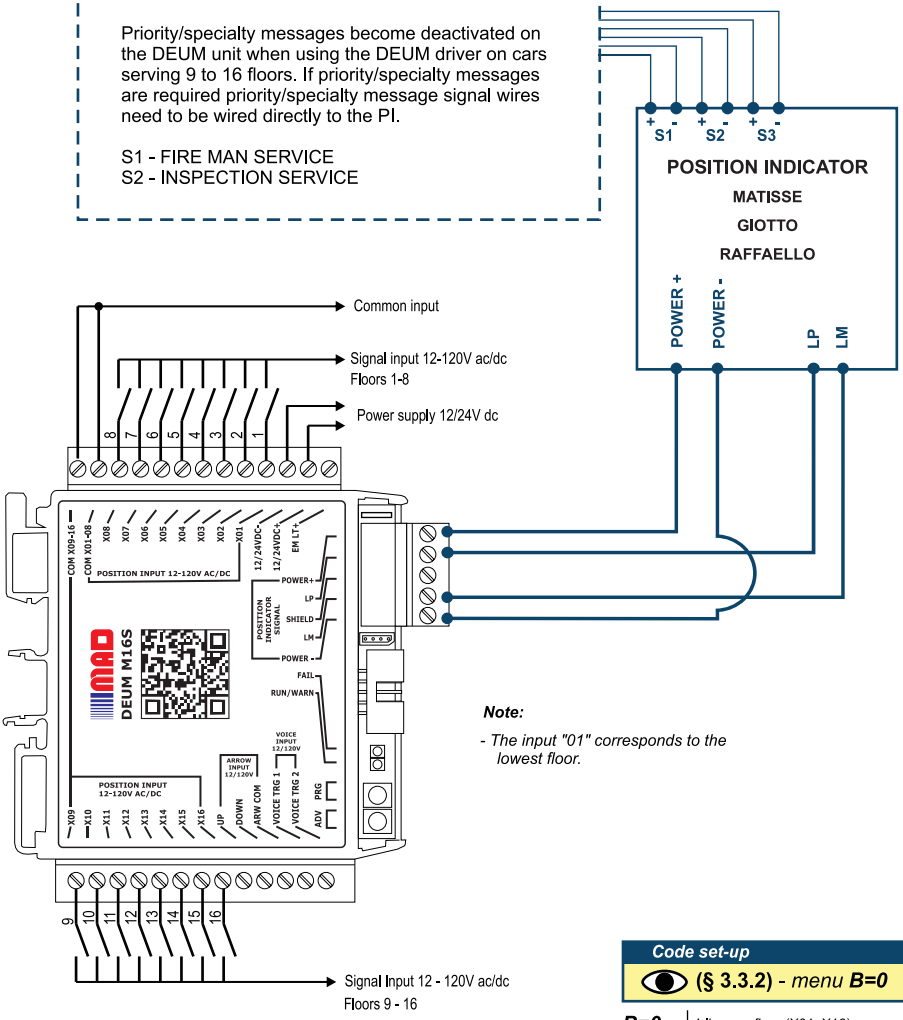
LINE PER FLOOR SET UP WITH UP TO 16 FLOORS

Priority/specialty messages become deactivated on the DEUM unit when using the DEUM driver on cars serving 9 to 16 floors. If priority/specialty messages are required priority/specialty message signal wires need to be wired directly to the PI.

S1 - FIRE MAN SERVICE
S2 - INSPECTION SERVICE



Note:

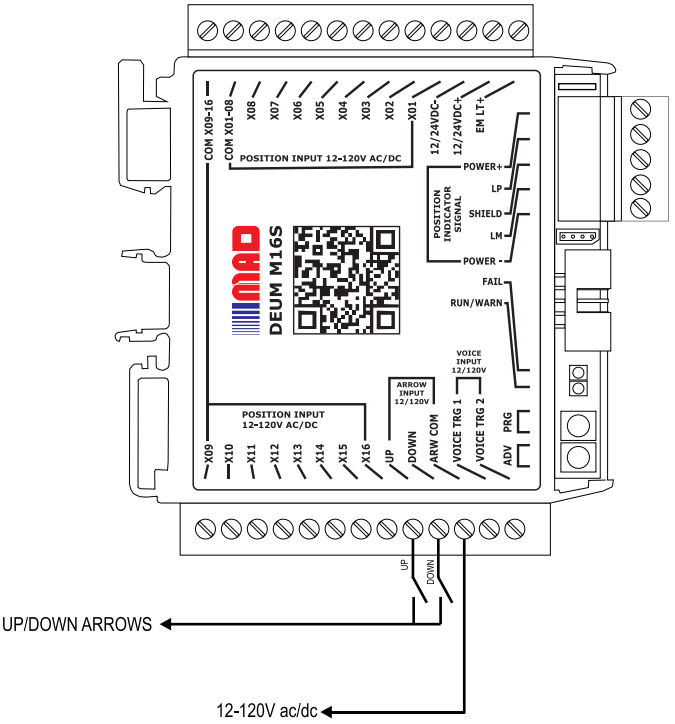
- The input "01" corresponds to the lowest floor.

Code set-up

(§ 3.3.2) - *menu* ***B=0***

B=0 — 1 line per floor (X01÷X16)

2.4 DIRECTION ARROW INPUT - MANUAL ARROWS



Code set-up

(§ 3.3.2) - *menu* ***B≠6***

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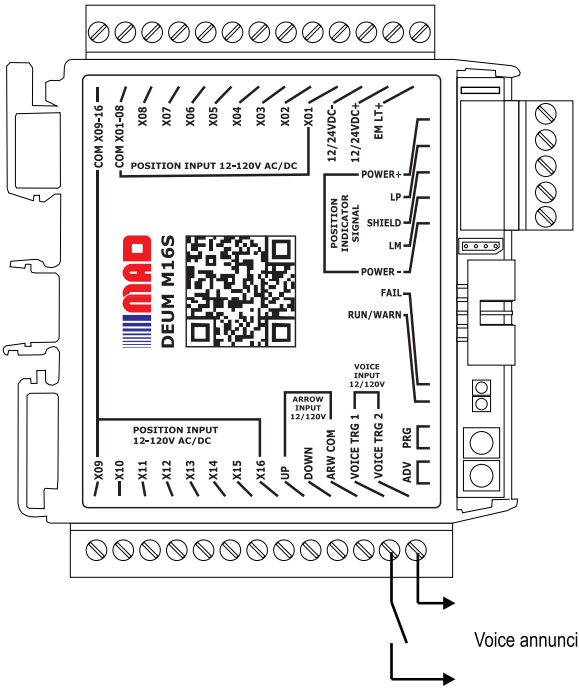
2.5 MANUAL TRIGGER INPUT *(VOICE ANNUNCIATOR)*

This input triggers the voice messages on DMG/MAD Matisse, Giotto and Raffaello Position Indicators.



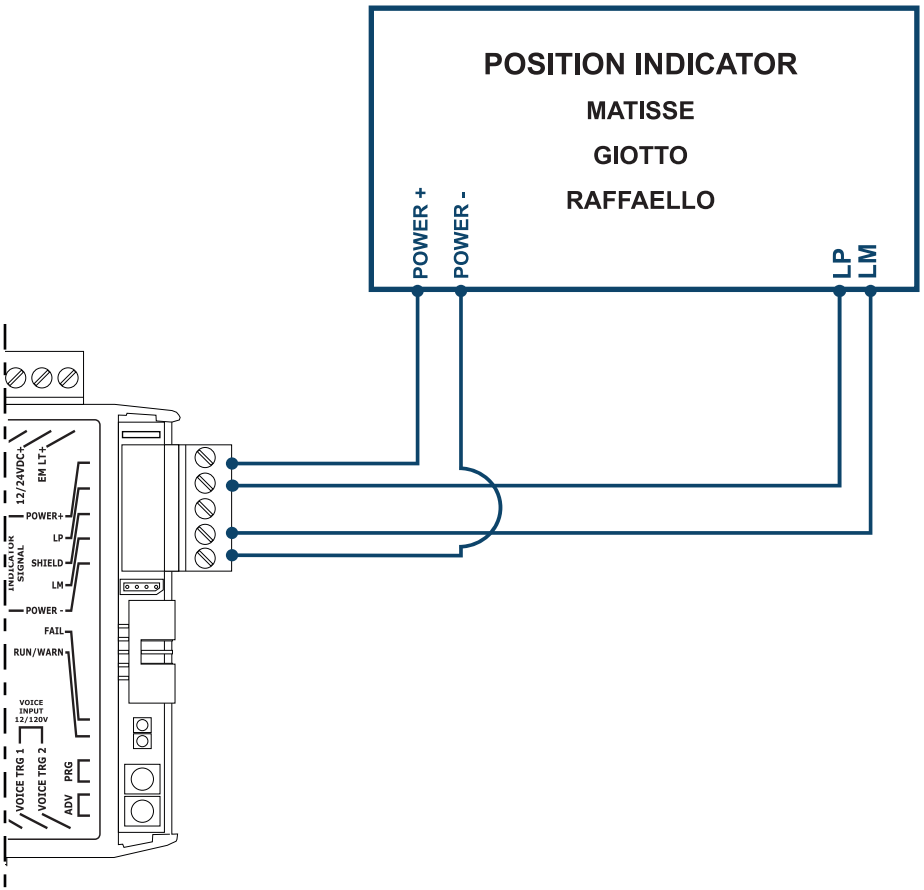
Voice annunciator trigger (12-120V ac/dc)

Impostazioni codifica - Code set-up

(§ 3.3.2) - *menu* ***B≠6***

2.6 SERIAL BUS OUTPUT FOR POSITION INDICATOR/VOICE ANNUNCIATOR

Serial outputs using 4 screw terminals allow you to connect DEUM to all DMG/MAD serial type position indicators (Matisse, Giotto and Raffaello).



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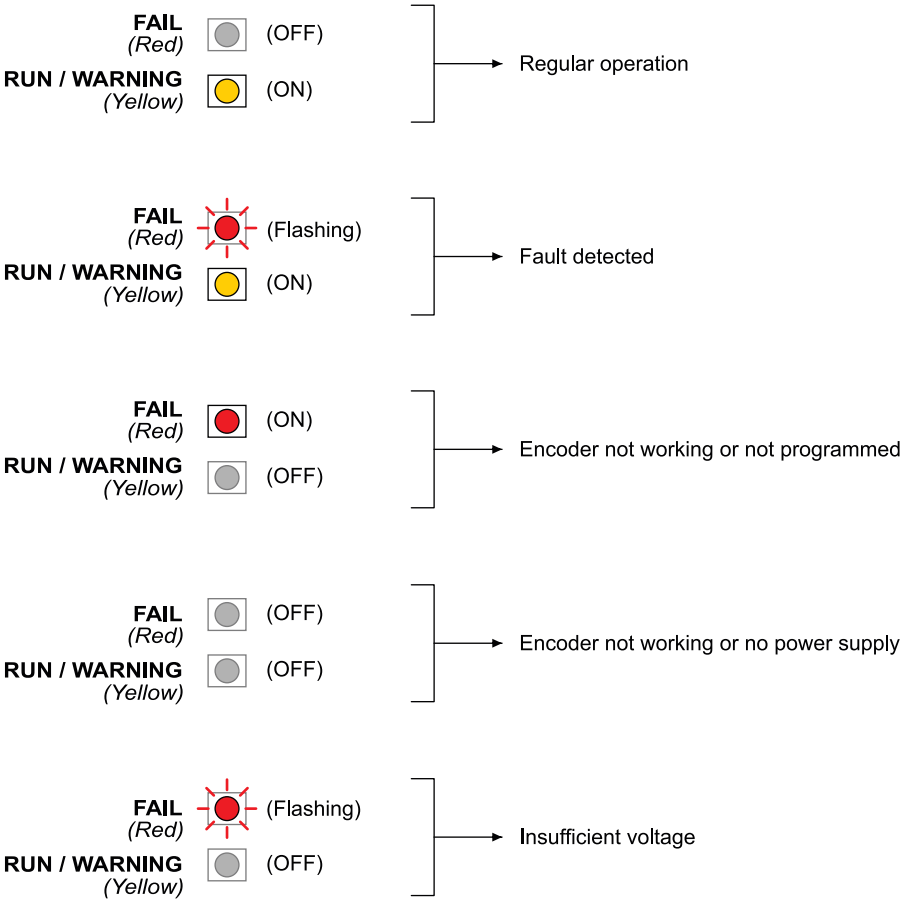
2.7 SELF-DIAGNOSIS LED



Note:

FAIL LED lights up for 1 second when the encoder is switched on.

3 PROGRAMMING

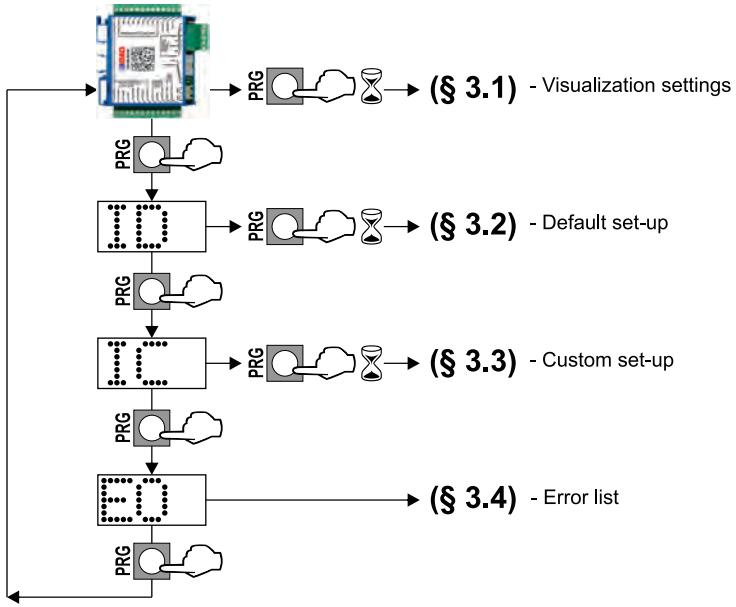
PRG **PROGRAM**

Navigation menu key

ADV **ADVANCE**

Set-up key

Menu map



= *Light touch*

= *Extended touch (> 3 seconds)*

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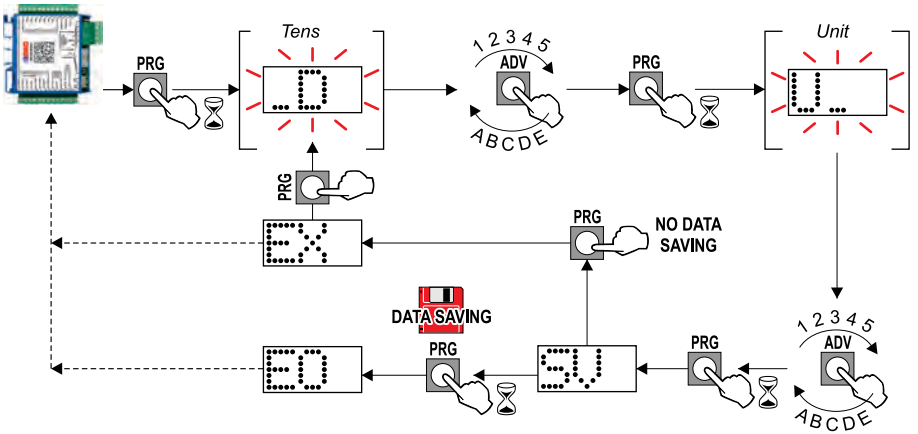
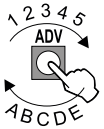
3.1 - Visualization settings

To set up specific letters/numbers, bring the elevator to the relevant floor level and follow the diagram.



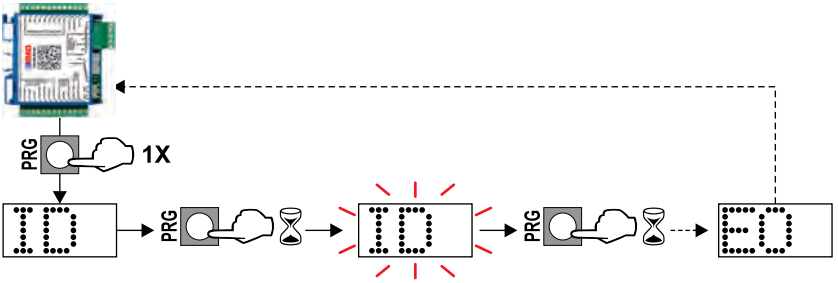


- Shows the complete range of letters/numbers that can be displayed.

7 Seg.

3.2 - Default set-up

All DEUM factory parameters can be reset using the following RESET procedure:



The default programming set-up is fixed at the position:
1 line per floor (BA) / Offset = 0 (A0) / Fix arrows mode (C0)

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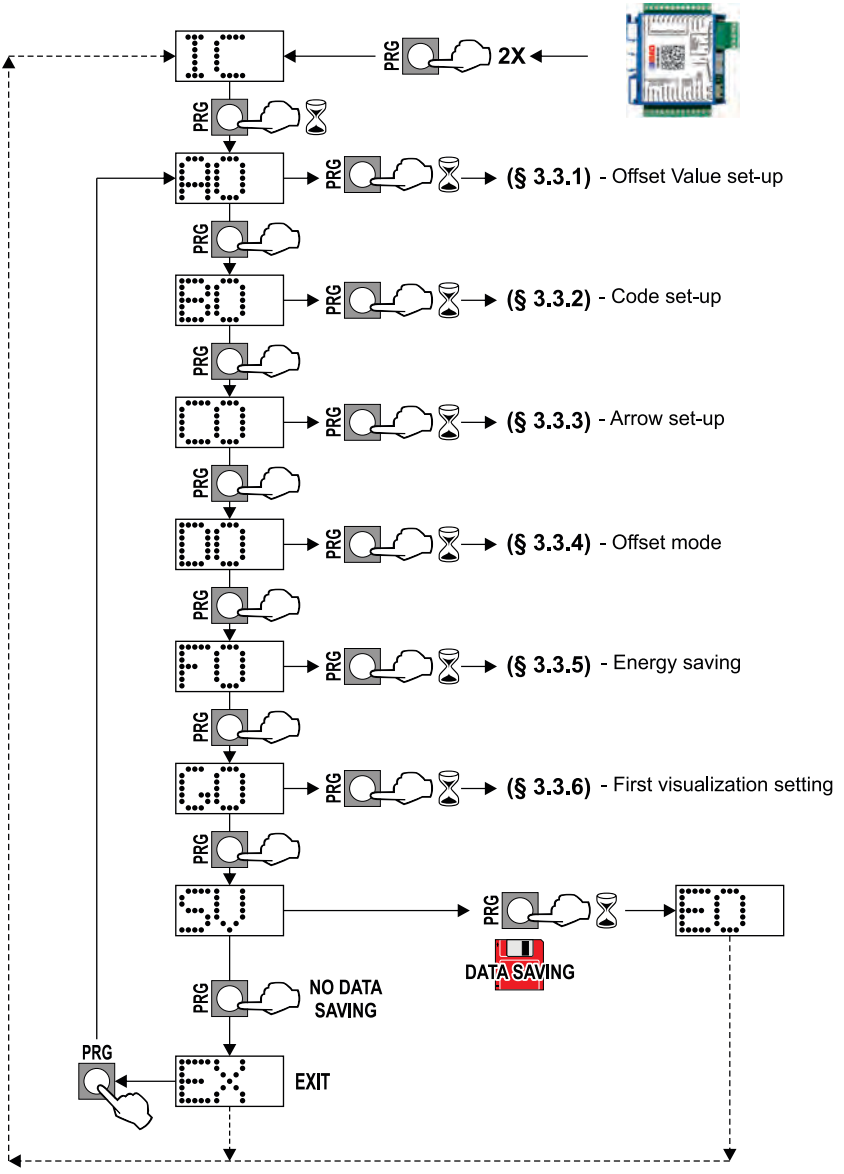
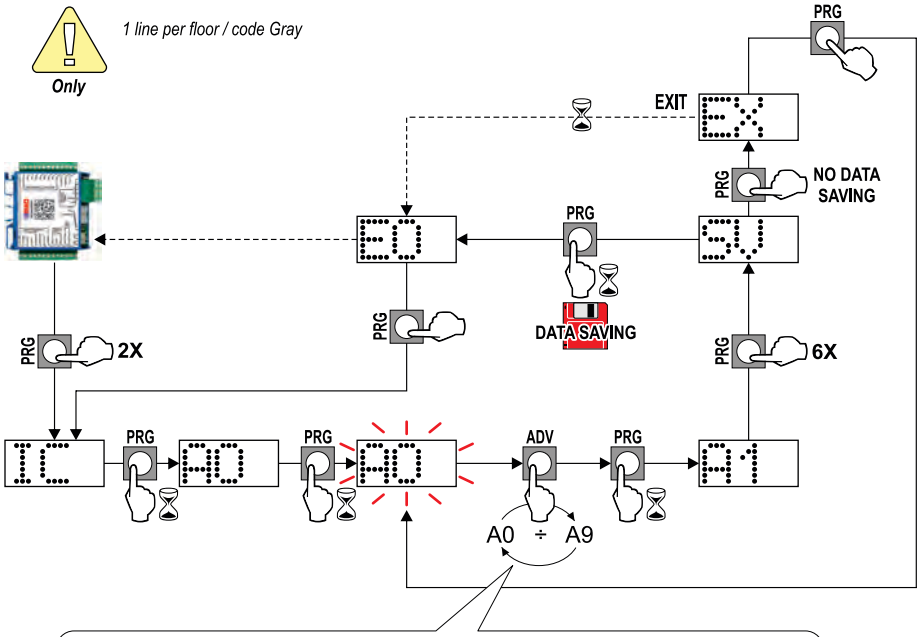
3.3 - Custom set-up



3.3.1 - Offset value set-up



- Enter the desired offset level from 0 to 9. (See also § 3.3.4)

A9	-9	-8	-7	-6	-5	-4	-3	-2	-1
A8	-8	-7	-6	-5	-4	-3	-2	-1	-
A7	-7	-6	-5	-4	-3	-2	-1	0	-
A6	-6	-5	-4	-3	-2	-1	0	1	-
A5	-5	-4	-3	-2	-1	0	1	2	-
A4	-4	-3	-2	-1	0	1	2	3	-
A3	-3	-2	-1	0	1	2	3	4	-
A2	-2	-1	0	1	2	3	4	5	-
A1	-1	0	1	2	3	4	5	6	-
Default -> A0	0	1	2	3	4	5	6	7	8
	X01	X02	X03	X04	X05	X06	X07	X08	X__

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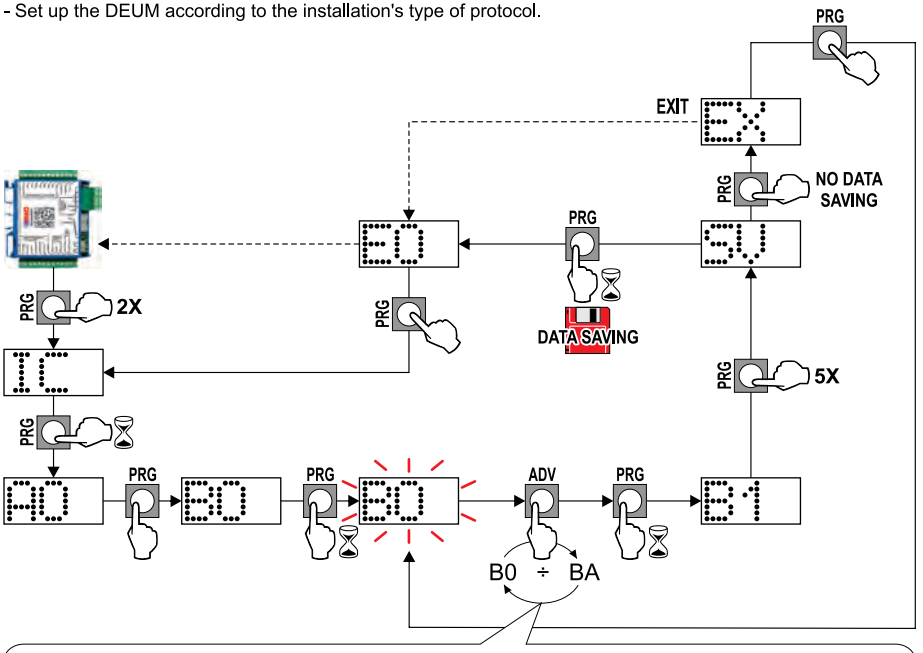
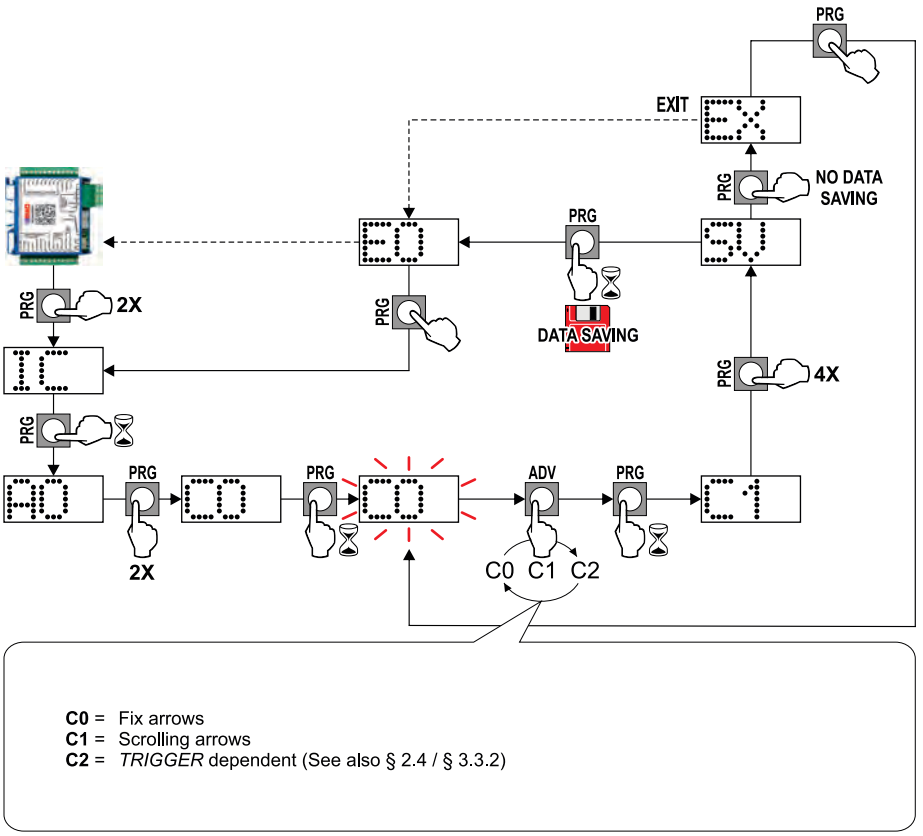
3.3.2 - Code set-up

- Set up the DEUM according to the installation's type of protocol.



B0 = 1 line per floor
B1 = Gray code
B2 = Mea (NOT USED BY MAD)
B3 = Autinor (NOT USED BY MAD)
B4 = Manual floor sensor (with arrows and trigger input) (NOT USED BY MAD)
B5 = 1 line per segment segmento (NOT USED BY MAD)
B6 = Automatic floor sensor (with automatic arrows and automatic trigger) (NOT USED BY MAD)
B7 = Binary code + indicators (M16)
B8 = TKE (NOT USED BY MAD)
BA = 1 line per floor (X01÷X08) + priority/special messages

3.3.3 - Arrow set-up



C0 = Fix arrows
C1 = Scrolling arrows
C2 = *TRIGGER* dependent (See also § 2.4 / § 3.3.2)

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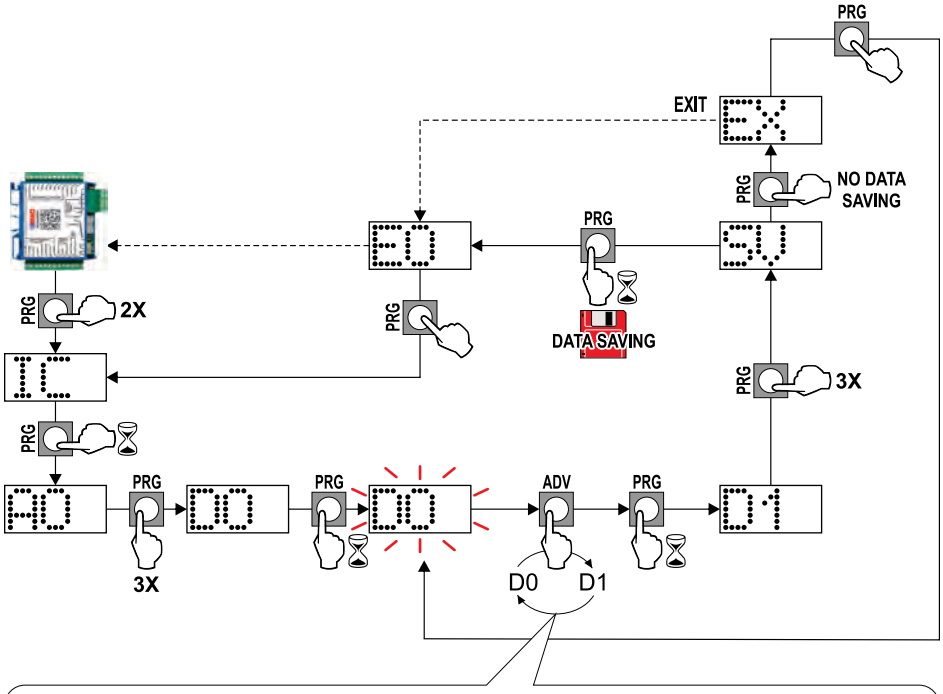
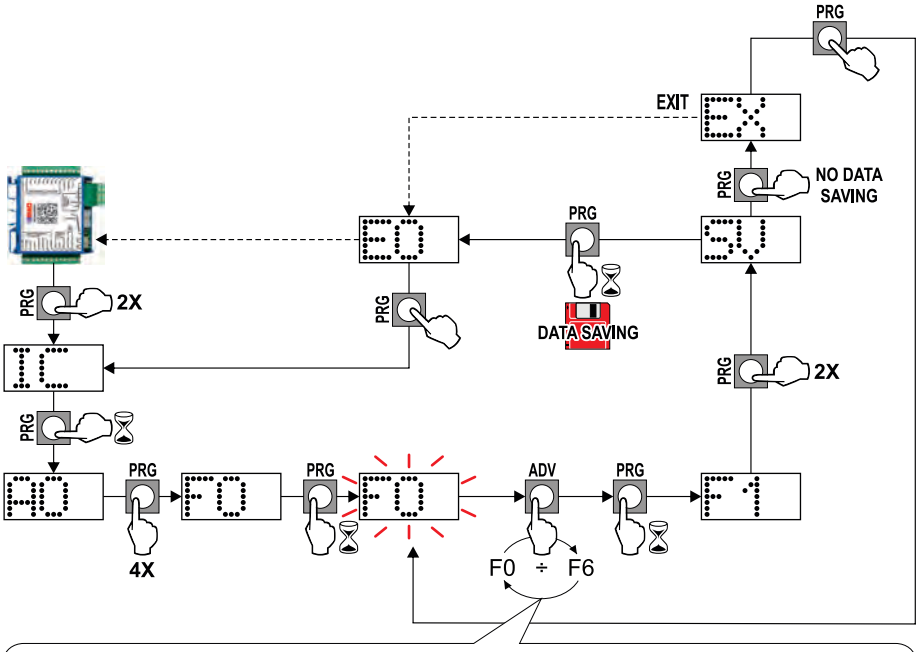
3.3.4 - Offset mode



Default -> **D0** = Negative offset
D1 = Positive offset
(See also § 3.3.1)

3.3.5 - Energy saving

- Indicate the activation time “energy saving” function



F0 = Disabled function: *Supply the LP input (§ 2.6) to command the function from other unit*

F1 = 10 min.
F2 = 20 min.
F3 = 30 min.
F4 = 40 min.
F5 = 50 min.
F6 = 60 min.

→ *The LP input (§ 2.6) must NOT be connected to the power supply*

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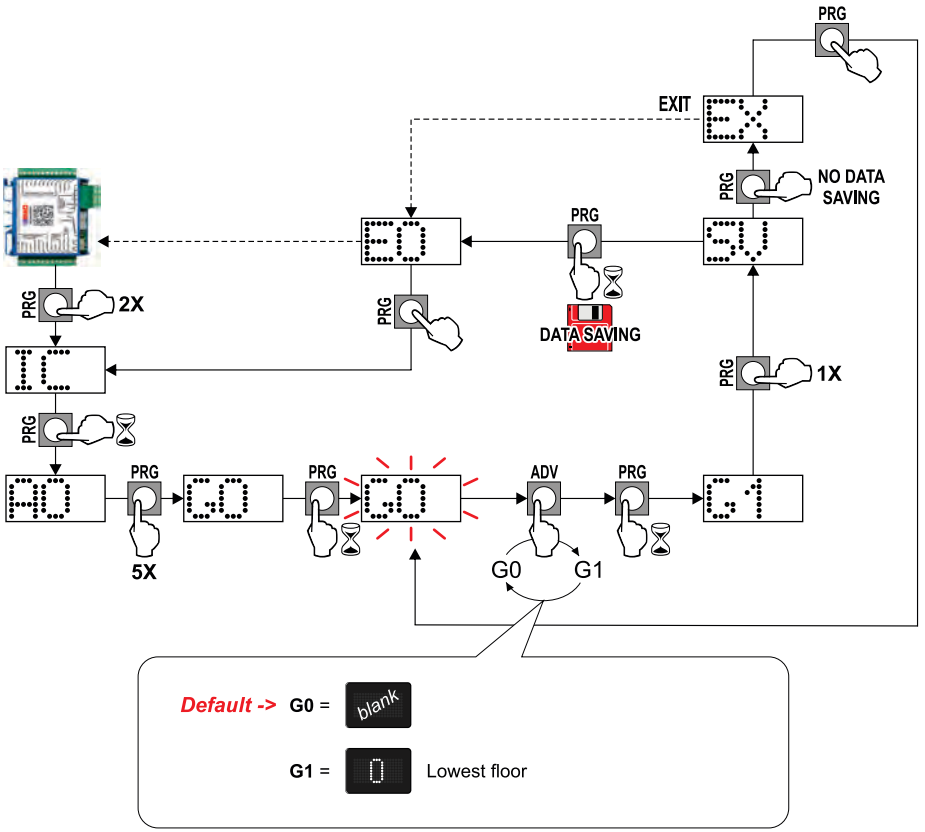
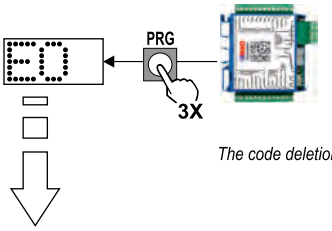
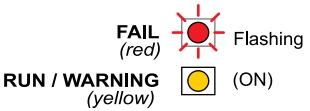
3.3.6 - First visualization setting

"1 line per floor", "Gray code" and "binary code" only



3.4 - Error list





The code deletion happens automatically when the error is cleared.

E0	No error
E1	Unknown input protocol error (e.g. Gray or 7 unrecognised segments)
E2	Data check result is wrong: enter default settings again.
E3	Invalid MEA/AUTINOR input error (unrecognised signal characteristics)
E4	MEA AUTINOR no signal error (where 3 seconds pass without a signal being recognised)
E5	Error in reading sensor
E6	Position sensor waiting for reset (position not settled) •
E8	Insufficient supply for data save functions •
E9	Unidentified generic error (ex.: programming a view with an active error)
LE	The "EME +" input is active on the encoder

For further questions or assistance, you can contact our tech support:
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NOTES:

Elevator Fixtures

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