Datasheet 01.2007

M.series keypads



EAO, the expert in Human Machine Interfaces, is proud to introduce the new M.series keypad range, designed to operate in varied environments and which can be used in different applications.

The main advantage of this new keypad system is its flexibility in terms of mechanical characteristics. These include for example, choice of illumination, colour and shape of keys, and tactile feel (membrane with carbon pills or domes on the PCB for instance), amongst others.

With M.series, the right keypad is available for every need!

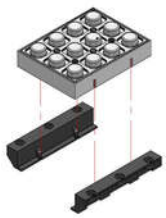
Material

- All plastic parts are UL94 V0
- Sealing gasket and membrane: silicone (UL 94HB)
- Keys: Anodised aluminium or polycarbonate
- PCB Epoxy FR4 (UL 94 V0) with gold coating
  Versions with domes on the PCB available
- Connector: HE14 pin header, see number of pins on drawings

Mounting

The keypads can be mounted from the rear, with different options possible:

- New mounting kit available from EAO, with 2 mounting clips made of ABS polycarbonate
- 4 holes in the back of the housing of the keypad for customised integration



Typical applications

The high flexibility of the features of the M.series allows them to be suitable for many applications:

- Access control
- Banking (special security system)
- Telecom
- Transport
- Vending
- Security
- …

Electrical characteristics

- Interface:
  - 4 key version: common point
  - 12 and 16 key versions: Matrix as standard, others on request (common point, USB etc.).
- Power supply: 5 VDC, 240mA max
- Illuminated versions: blue, red, green, yellow and white.
  Due to a unique patented system, EAO can customise the colour of the illumination without additional development costs.
  NOTE - A load resistor may need to be connected by the customer in order to power the LED's correctly.
- Contact resistance
  - dome version: < 1 Ohm
  - membrane version: < 200 Ohms
- ESD: 15kV with a metallic front plate

Environmental characteristics

- Temperature:
  - Operating: -25°C to +85°C
  - Storage: -40°C to +85°C (-30°C for illuminated version)
- Saline mist: 96 hours, IEC 60512-6
- Damp heat (@+40°): 21 days, IEC 60512-6
- Dry heat (@ +85°C): 21 days, IEC 60512-6
- UV resistance : 56 days
- CE and RoHS compliant

Mechanical characteristics

- Actuation force:
  - dome version: 4.5N +/- 30%
  - membrane version: 1.9N +/- 30%
- Key travel:
  - dome version: 0.6 to 1mm
  - membrane version: 0.8 to 1.3mm
- Contact materials:
  - dome version: nickel/gold
  - membrane version: carbon/gold
- Lifetime (cycles / keys):
  - dome version: 1 million actuations
  - membrane version: 4 million actuations
- Standard character font : Tiresias, other fonts available on request
- Impact resistance: **IK 09** for standard versions with a 3mm thick front plate
- Sealing: **IP 67** (front face)

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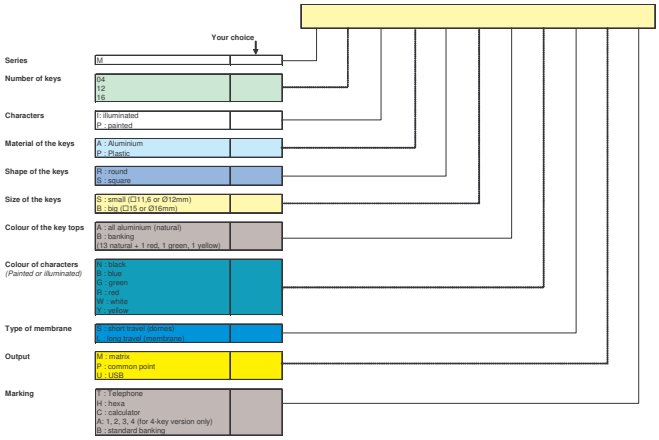
Standard part numbers

Part number	Description	Marking
4 key version		
M04PARSANLPA	4 key non illuminated membrane, common point	1, 2, 3, 4
M04PARSANSPA	4 key non illuminated domes, common point	1, 2, 3, 4
M04iARSAYLPA	4 key illuminated yellow membrane, common point	1, 2, 3, 4
M04iARSAYSPA	4 key illuminated yellow domes, common point	1, 2, 3, 4
12 key version		
M12PARSANLMT	12 key non illuminated membrane, matrix	Telephone
M12PARSANSMT	12 key non illuminated domes, matrix	Telephone
M12iARSAYLMT	12 key illuminated yellow membrane, matrix	Telephone
M12iARSAYSMT	12 key illuminated yellow domes, matrix	Telephone
M12iARSABLMT	12 key illuminated blue membrane, matrix	Telephone
M12iARSABSMT	12 key illuminated blue domes, matrix	Telephone
16 key version		
M16PARSANLMH	16 key non illuminated membrane, matrix	Hexa
M16PARSANSMH	16 key non illuminated domes, matrix	Hexa
M16iARSAYLMH	16 key illuminated yellow membrane, matrix	Hexa
M16iARSAYSMH	16 key illuminated yellow domes, matrix	Hexa
M16iARSABLMH	16 key illuminated blue membrane, matrix	Hexa
M16iARSABSMH	16 key illuminated blue domes, matrix	Hexa
M16PARSBNSMB	16 key banking version with domes, security and coloured keys	Banking
M16iARSBYSMB	16 key illuminated banking version with domes, security and coloured key	Banking
FIX.M001	Mounting bracket	

Define your own part numbers

- By using the following elements, you can define yourself the part number of the product that you need.

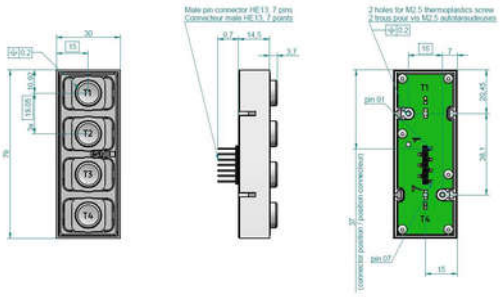


Additional important information

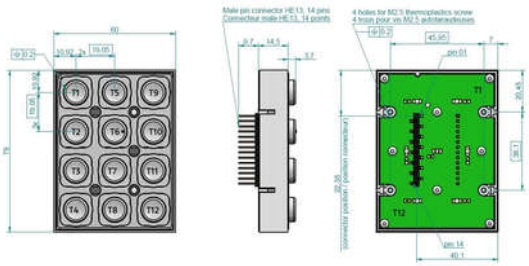
- Choice available of key shape and dimension
- Anti-twist keys
- Guiding system to prevent sticking keys
- Anti pull off keys
- Laser engraving for a high flexibility
- Standard colours of keys (other colours available on request):
  - Key top: natural (grey), green, red, yellow
  - Illumination: yellow (standard), white, red, green, or blue
- Tamper resistance: the PCB is inside the housing for added security, and there are security loops integrated for the Banking version
- Resistant to chemical products: gasoil for dome versions only
- Fast prototyping

Dimensions

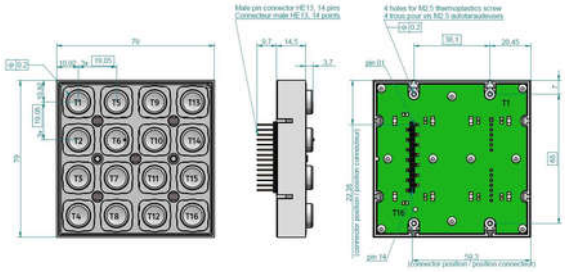
- 4 key version



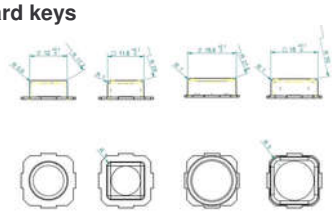
- 12 key version



- 16 key version

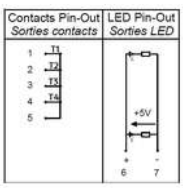


Type of standard keys

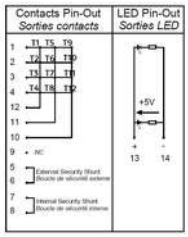


Connection

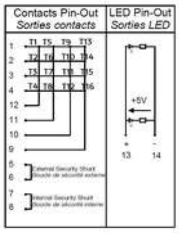
4 keys



12 keys



16 keys



This document contains accurate information at the time of writing, but is subject to change without prior notice.