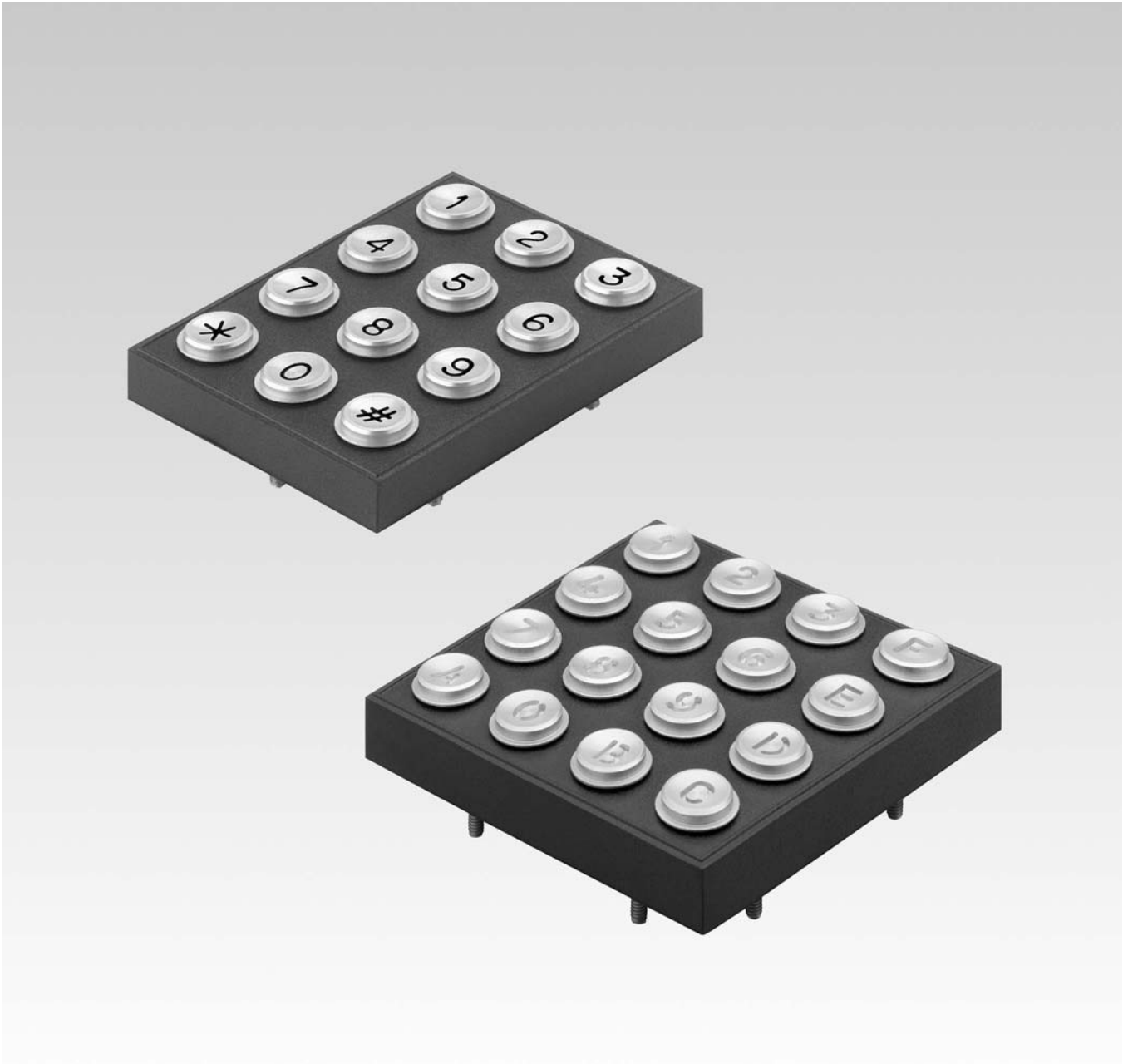




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## Product Information

### General notes

The low profile 12 or 16 key AVLE and AVSE keypads are specially designed for public environment applications, such as vending machines, ticket machines, payment/ banking terminals and access control systems.

When mounted behind a front panel the AVLE, AVSE range is vandal resistant and sealed to IP 67. The keypad incorporates anti pull-off keys with a metal shoulder and an elastomer membrane to prevent dismantling from the front. The AVSE and AVLE both use click dome technology to guarantee a positive tactile feel.

The simplified design of the AVSE type offers a lower cost solution while maintaining high technical specifications.

### Mounting

The keypad is mounted from behind a front panel, in which holes are cut out for the keys to pass through.

Full IP 67 front face sealing is realised when the small raised lip around the edge of the elastomer membrane is compressed against the front panel.

### Contacts

To ensure integrity of contacts and lower switch ratings, the contacts are gilded and external connection to the keypad is by means of pin header on the back.

The electrical keypad circuit is matrix configuration. A common point version is available on request.

Gold contact version is compatible with MIL-specifications.

### Keys

The aluminium keys are available with concave profile. They are anti pull-off and resistant to shock and fire.

### Marking

The keys can be laser engraved so that custom markings or symbols in different colours are available on request as are keys in other colours.

### Illumination

On the illuminated AVLE keypads, each key is individually lit with yellow or blue LEDs.

Other LED colours are available on request.

*We reserve the right to modify technical data  
All dimensions in mm*

Keypad



|                                                                | Front protection | Key cap                      | Terminals | Circuit | No. of keys | Marking           | Illumination | Typ-Nr.              | Component layout | Mounting dimensions | Technical drawing |       |
|----------------------------------------------------------------|------------------|------------------------------|-----------|---------|-------------|-------------------|--------------|----------------------|------------------|---------------------|-------------------|-------|
| <b>Keypad</b><br>non-removable metal<br>keys, vandal resistant | IP 67            | Aluminium natural<br>concave | PH        | M       | 12          | Phone             | LED yellow   | <b>AVLE.12150.24</b> | 1                | 1                   | 1                 | 0.106 |
|                                                                |                  |                              |           |         |             | Phone black       | without      | <b>AVLE.12150.20</b> | 1                | 1                   | 1                 | 0.102 |
|                                                                |                  |                              |           |         | 16          |                   |              | <b>AVSE.12150.20</b> | 1                | 1                   | 1                 | 0.106 |
|                                                                |                  |                              |           |         |             | Hexadecimal       | LED yellow   | <b>AVLE.16250.24</b> | 2                | 1                   | 2                 | 0.131 |
|                                                                |                  |                              |           |         |             | Hexadecimal black | without      | <b>AVSE.16250.20</b> | 2                | 1                   | 2                 | 0.129 |
|                                                                |                  |                              |           |         |             |                   |              | <b>AVLE.16250.20</b> | 2                | 1                   | 2                 | 0.131 |

Other options on request :

Common point circuit

Custom key colours, LED colours and markings

Terminals: PH = Pin header

Circuit: M = Matrix

Component layout from page 6, Mounting dimensions from page 6, Technical drawing from page 7

## Keypad

### Material

#### Keys

Aluminium

#### Membrane Case

Polychloroprene Elastomer black (CR)

#### Back plate

Steel chromated

#### Contacts

Stainless steel 0.1 µm Gold

Cu tracks on PCB 0.1 µm Gold

### Operating temperature

-25°C ... +85°C

### Front protection

IP 67 as per IEC 60529, when mounted

### Climate resistance

as per EN IEC 60512-6

Damp heat 21 days

Dry heat : 10 days, +85 °C (AVSE), 21 days +85 °C (AVLE)

Saline mist : 48 hours

### Approvals

#### Declaration of conformity

CE

RoHS

### Mechanical characteristics

#### Actuating force

3.6 N ±30 % (AVSE)

5 N ±30 % (AVLE)

#### Actuating travel

0.55 mm ±0.1 mm (AVSE)

0.7 mm ±0.3 mm (AVLE)

#### Rebound time

≤1 ms

### Electrical characteristics

#### Operating voltage/-current

Nominal 24 V, 50 mA

Maximum voltage 50 V

Minimum voltage 5 V

Minimum current 1 mA

#### Illumination

LED current consumption for single LED (AVLE) :

20 mA at 2.1 V (yellow and green)

10 mA at 2.1 V (red)

#### Isolation resistance

≥1000 MΩ at 100 VDC

#### Contact resistance

≤200 mΩ (AVLE)

≤1 Ω (AVSE)

#### Electrical life

≥1 Million cycles of operation per key

#### Electrostatic breakdown value

5 kV

#### Electric strength

1500 V<sub>rms</sub>, 50 Hz, 1 min., as per EN IEC 60512-2

#### Capacity between open terminals

≤1.5 pF at 1 kHz

### Environmental conditions

#### Storage temperature

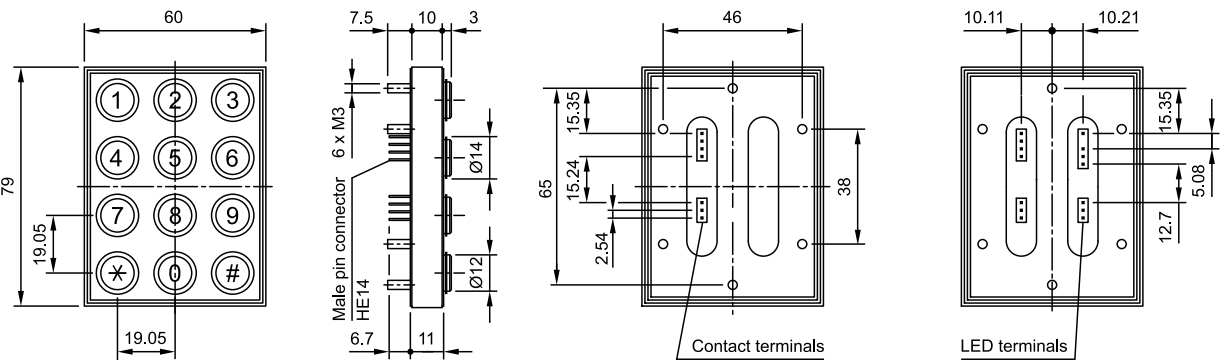
-40 °C ... +85 °C (AVSE)

-30 °C ... +85 °C (AVLE)

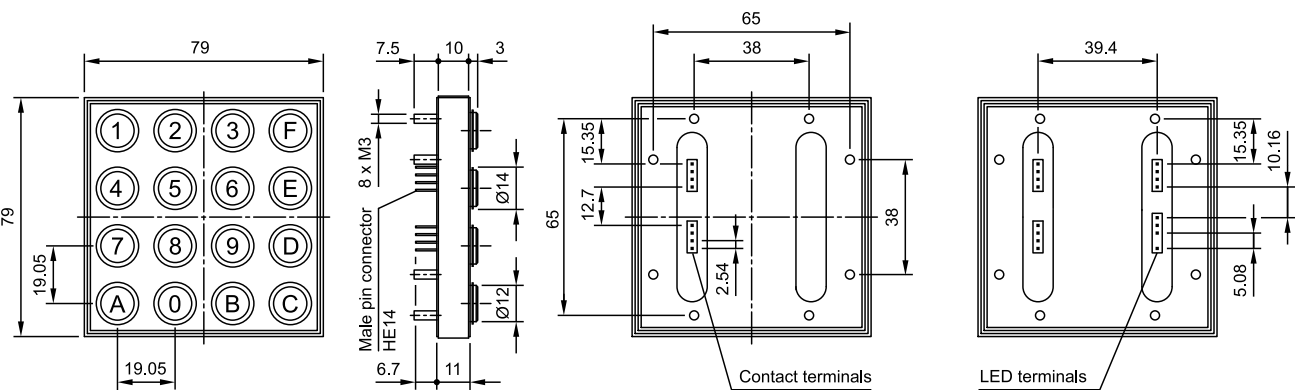


Technical drawing

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2 Keypad page 4



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