

# Data Sheet

## Keypads Monobloc

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The Monobloc keypads are designed and manufactured to the highest quality standards. The robust rugged design makes them absolutely dust and water proof. The full stroke keys give an excellent tactile feedback. The patented magnetic retract mechanism ensures a long service life of the product.

Monobloc keypads are available with

1 x 4 keys            3 x 4 keys            4 x 4 keys

The 1 x 4 Monobloc keypads are delivered without connection print. The 3 x 4 and 4 x 4 Monobloc keypads are available without electronics, and with electronics of 3...15V or 24V.

Monobloc keypads are available with embedded keys (KNM2) or with raised keys (KNM3). The key tops can be exchanged individually. In addition, different key marking sets are available.

## Technical Specifications

### Keypads without connection prints and electronics

#### Mechanical

Housing / membrane	Crastine / Silicon rubber
Key travel	1.35 mm
Actuating force	2.2 N ± 0.4 N
Connections	Soldering pins

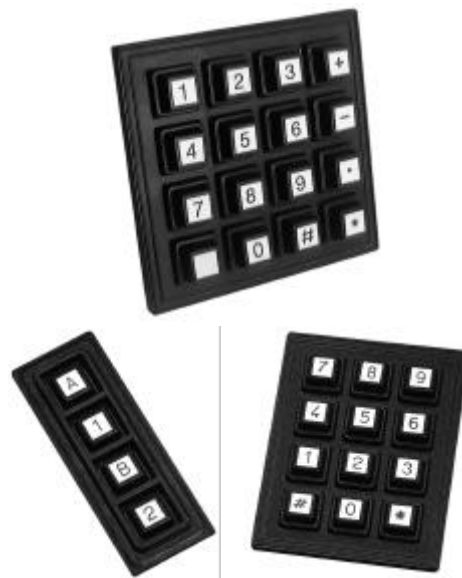
#### Electrical

Supply voltage	max. 42 V=
Test voltage	2,000 V~=
Nom. current (Ω load)	max. 125 mA~=
Contact rating	max. 2 W

#### Environment

Application class as per DIN 40040	GSF
Temperature range	-40 °C ....+70 °C
Storage temperature	-40 °C ....+70 °C

**Protection class (DIN) IP 67**



### Keypads with 3...15V electronic

#### Mechanical

Housing/membrane	Crastine / Silicon rubber
Key travel	1.35 mm
Actuating force	2.2N ± 0.4 N
Connections	Ribbon cable connector, 20 pins

#### Electrical

Supply voltage	TTL: +5 V ± 5 %, 1 mA CMOS: +3 V ... 15 V, 1 mA
Output logic	positive
Locking	n-key-rollover
Data output	parallel 4bit buffered

#### Environment

Application class as per DIN 40040	GSF
Temperature range	-25 °C ....+55 °C
Storage temperature	-40 °C ....+70 °C

**Protection class (DIN) IP 67**

### Keypads with 24 V electronic

#### Mechanical

Housing/membrane	Crastine / Silicon rubber
Key travel	1.35 mm
Actuating force	2.2 N ± 0.4 N
Connections	Ribbon cable connector, 20 pins <sup>*1</sup> SUB-D connector 25 pins <sup>*2</sup>

#### Electrical

Supply voltage	11 V ... 30 VDC
Consumption	26 mA @ 11 ... 30 VDC
Output logic	positive
Optocoupler output	max. 30 V / 60 mA @ 470 Ω load
Locking	n-key-rollover

#### Environment

Application class as per DIN 40040	GSF
Temperature range	-25 °C ....+70 °C
Storage temperature	-40 °C ....+70 °C

**Protection class (DIN) IP 67**

## Dimensions

	Keys	Keypad 1x4 HxWxD (mm)	Keypad 3x4 HxWxD (mm)	Keypad 4x4 HxWxD (mm)
without connection print	embedded	89.5x32.4x18.5	89.5x70.5x18.5	89.5x89.5x18.5
	raised	91.6x34.4x23.8	91.6x72.6x23.8	91.6x91.6x23.8
3...15 V (dimensions without connections)	embedded	-	89.5 <sup>*1</sup> x70.5x18.5	89.5 <sup>*1</sup> x89.5x18.5
	raised	-	91.6 <sup>*1</sup> x72.6x23.8	91.6 <sup>*1</sup> x91.6x23.8
24 V (dimensions without connections)	embedded	-	91.6x70.5x23.8 <sup>*2</sup>	91.6x89.5x18.5 <sup>*2</sup>
	raised	-	91.6x70.5x18.5 <sup>*2</sup>	91.6x91.6x23.8 <sup>*2</sup>
	*1	with flat ribbon cable connector: H +4mm		
	*2	with flat band connector: D +46mm with SUB-D connector: D + 26mm		

## Order number

### Keypads without connection print

Configuration	Connection mode	embedded keys	raised keys
1 x 4 Standard, without PCB (incl. fixing- and keytop marking set)	Soldering pins	KNM20S14	KNM30S14
3 x 4 Standard, without PCB	Soldering pins	KNM20S34	KNM30S34
4 x 4 Standard, without PCB	Soldering pins	KNM20S44	KNM30S44

### Keypads without electronics

Configuration	Connection mode	embedded keys	raised keys
3 x 4 direct output, on PCB	Flat cable connector	KNM22S3403	KNM32S3403
3 x 4 matrix output XY, on PCB	Flat cable connector	KNM22S3403	KNM32S3403
4 x 4 outputs 1 out of 16, on PCB	Flat cable connector	KNM21S4403	KNM31S4403
4 x 4 direct output, on PCB	Flat cable connector	KNM22S4403	KNM32S4403
4 x 4 matrix output XY, on PCB	Flat cable connector	KNM23S4403	KNM33S4403

### Keypads with 3...15 V electronic

Configuration	Connection mode	embedded keys	raised keys
3 x 4, output 5 V TTL and CMOS compatible	Flat cable connector 20 pins*	KNM26S34	KNM36S34
4 x 4, output 5 V TTL and CMOS compatible	Flat cable connector 20 pins*	KNM26S44	KNM36S44

### Keypads with 24 V electronic

Configuration	Connection mode	embedded keys	raised keys
3 x 4, Encoder and opto coupler output 11...30 VDC	Flat cable connector 20 pins*	KNM29S34CB	KNM39S34CB
3 x 4, Encoder and opto coupler output 11...30 VDC	SUB-D-connector 25 pins*	KNM29S34CR	KNM39S34CR
4 x 4, Encoder and opto coupler output 11...30 VDC	Flat cable connector 20 pins*	KNM29S44CB	KNM39S44CB
4 x 4, Encoder and opto coupler output 11...30 VDC	SUB-D-connector 25 pins*	KNM29S44CR	KNM39S44CR

\*Connector included

