



## DATA SHEET

### Solutions for the Dark - Membrane Keypads with Side-LED Backlighting

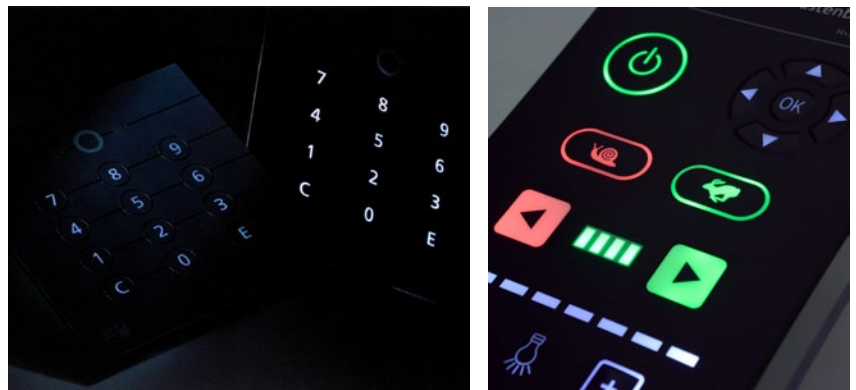
#### Features

- Backlighting of homogeneous areas, symbols and frames
- Backlighting of keys with color change
- Bi-color or RGB LEDs for unlimited color selection
- LEDs on PCB, back available for custom electronics
- Optional light separation between each key

LED technology combined with a sophisticated design and composition allows for backlit mebrane switches, requiring only slightly more space than EL films.

Long service life, brightness and single-key activation open up new application possibilities for the membrane keypad. Due to customization of the diffusing panel, almost any shapes and sizes can be illuminated.

Keypads with Side-LED backlighting can be designed with a minimum installation height of 2.2 mm.



#### Specifications of Side-LED backlighting\*

Thickness	min. 2.2 mm
Thickness of completed unit	Construction with membrane overlay 1.9 mm + PCB thickness starting at 0.3 mm + Optional adhesive on the back
LED colors	Yellow, Organge, Green, Red, WHite, Blue, RGB
Key size	min. Ø 8 mm
Operating cycles	1 million
Operating temperature	-20 °C to +80 °C (with embossed keys up to +70 °C)
IP protection rating according to DIN 60529	Upon consultation

\*All technical properties and specs are subject to change depending on custom requirements and construction.



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#### Technical Data Side-LEDs\*

H+K-Art-Nr.	Color	Lens	V <sub>F</sub>			Wavelength [nm]			I <sub>V</sub> (mcd) @20mA				Viewing Angle [°]
			I <sub>F</sub> [mA]	Typ [V]	Max. [V]	λ <sub>D</sub>	λ <sub>P</sub>	Δλ	I <sub>F</sub> [mA]	Min. [mcd]	Typ. [mcd]	Max. [mcd]	
34201265	White	Diffused	20	3.2	3.7	x=0.3 y=0.28	x=0.3 y=0.28		20	710		1400	120
34201252	Green	Clear	20	3.2	3.7	528	523	33	20	710		1800	120
34201250	Red	Clear	20	2.2	2.5	625	630	19	20	450		1120	120
34201274	Blue	Clear	20	3.2	3.7	470	465	25	20	180		450	120
34201296	Orange	Clear	20	2	2.35	606	610	16	20	90		355	120
34201251	Yellow	Clear	20	2.2	2.5	590	595	18	20	450		1120	120
34201362	Red	Clear	20	2	2.4	622	632	20	20	350	450		120
	Green			2.8	3.4	523	515	30		600	850		
	Blue			3	3.4	465	460	20		100	140		

Absolute Maximum Ratings (Values T <sub>a</sub> = 25°C)							
Product	Color	P <sub>d</sub> [mW]	I <sub>F</sub> [mA]	I <sub>FP</sub> [mA]	T <sub>OP</sub> [°C] <sup>3</sup>	T <sub>ST</sub> [°C]	
34201265	White	120	30	I <sub>FP</sub> [mA]	- 40 ... + 100	- 40 ... + 100	
34201252	Green	75	30	300 <sup>1</sup>	- 40 ... + 100	- 40 ... + 100	
34201250	Red	125	50	100 <sup>1</sup>	- 40 ... + 100	- 40 ... + 100	
34201274	Blue	75	30	300 <sup>1</sup>	- 40 ... + 110	- 40 ... + 110	
34201296	Orange	80	30	500 <sup>1</sup>	- 40 ... + 100	- 40 ... + 100	
34201251	Yellow	50	50	100 <sup>1</sup>	- 40 ... + 100	- 40 ... + 100	
34201362	Red	45	20	30 <sup>2</sup>	- 40 ... + 85	- 40 ... + 85	
	Green	56					
	Blue	60					

\*All technical properties and specs are subject to change depending on custom requirements and construction.

<sup>1</sup> tp ≤ 10 μs; D = 0.005; T = 2ms

<sup>2</sup> tp ≤ 100 μs; D = 0.1; T = 1ms

<sup>3</sup> At temperatures T<sub>a</sub> > 25°C the derating of the LEDs must be taken into account