

DESCRIPTION:

Hall Probe K for I1A Magnetic Transducers with the naked Si chip is a very thin (0.5mm) and long (47mm) single-chip integrated 1-axis Hall-Probe. It measures magnetic fields perpendicular to the probe plane (By).

The Hall Probe K for I1A Magnetic Transducers contains a CMOS integrated circuit, three groups of mutually orthogonal Hall elements and a temperature sensor. The integrated Hall elements occupy very small area (150µm x 150µm), which provides very high spatial resolution of the probe.

The sensor chip is embedded in the probe package and connected to the CaH cable.

The outputs of the Hall Probe are high-level analog voltages proportional to the measured transverse (Y) component of a magnetic flux density and a voltage proportional with the probe temperature.

KEY FEATURES:

- **The K Hall probe with the naked Si chip is very thin (0.5mm) and long (47mm)**
- **Integrated CMOS 1-axis (By) Hall Probe**
- **Very low noise and offset fluctuations**
- **Very high spatial resolution (0.15 x 0.01 x 0.15mm³)**
- **Virtually no planar Hall effect**
- **Negligible inductive loops on the Probe**
- **Integrated temperature sensor on the probe for temperature compensation**
- **The Hall Probe K for I1A Magnetic Transducers is consisting part (Module H) of the I1A Magnetic Field Transducer, Digital Teslameter and Magnetic Field Mapper**
- **Suitable as Y-axis (0Y) Hall Probe**

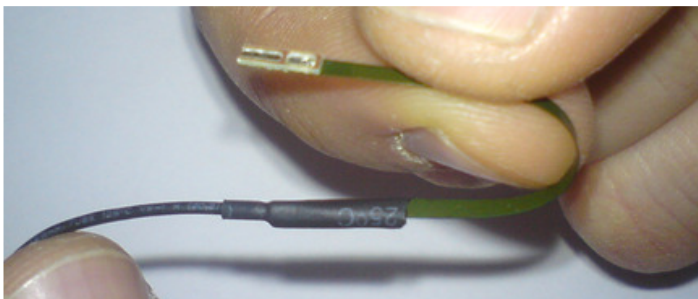
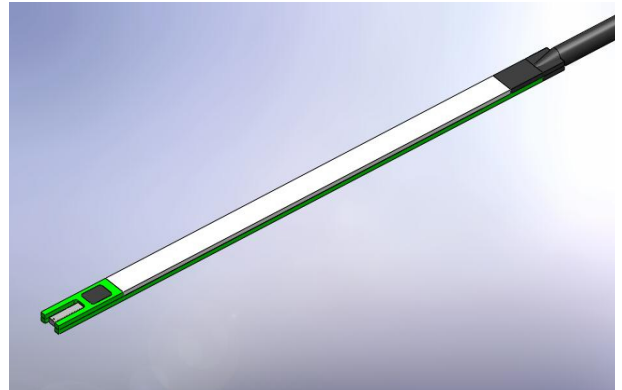
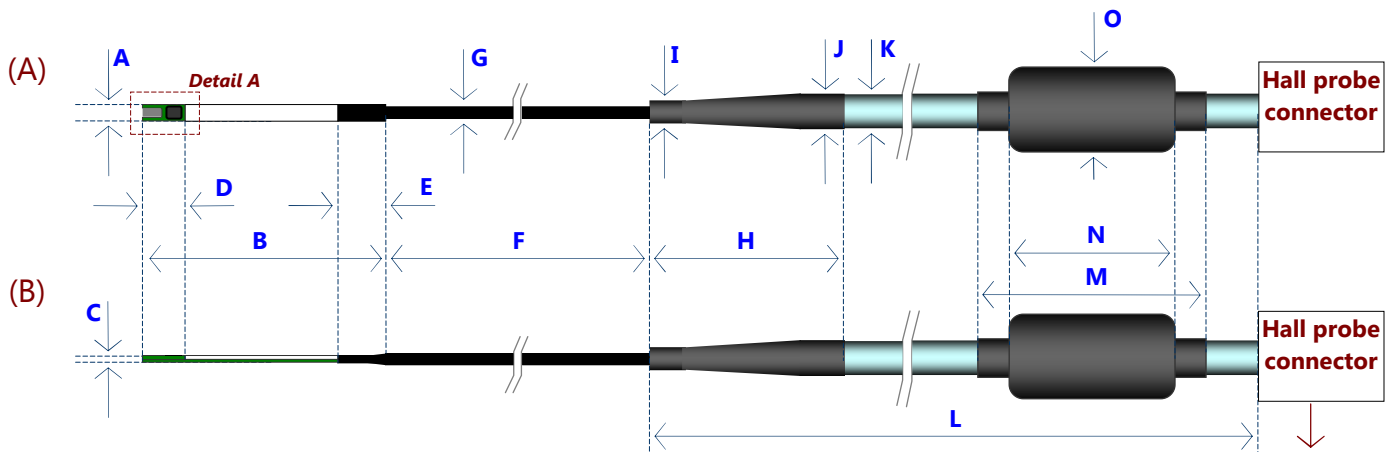
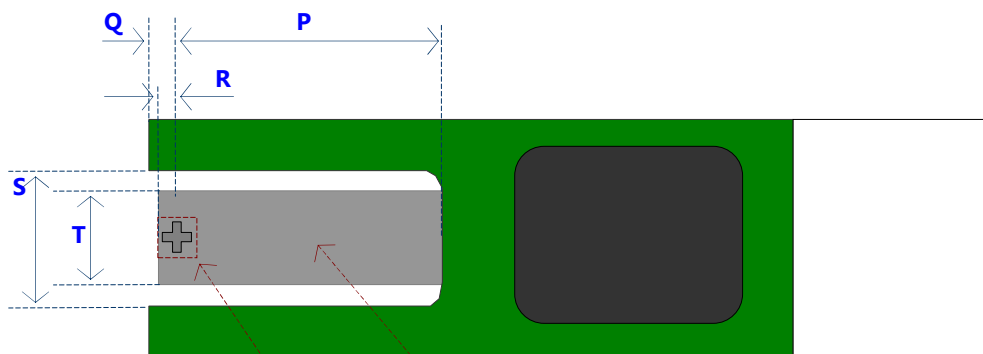


Figure 1. **The flexible Hall probe K**

PROBE DIMENSIONS AND CHARACTERISTICS:



Detail A 15:1



Silicon Hall sensor tip (2.70 x 0.64 x 0.28 mm)

Magnetic Field Sensitive Volume (0.15 x 0.01 x 0.15 mm³)

Available connection options:

1. Probe-to-Electronic ADAPTER (SUB-D/25-pins female connector)
2. LEMO plug
3. Fixed connection (cable gland MS PG11)

Dimension	[mm]	Dimension	[mm]	Dimension	[mm]	Dimension	[mm]
A	2.0 ± 0.1	F	350 ± 5	K	∅ 4.8 ± 0.2	P	2.7 ± 0.1
B	47 ± 1	G	∅ 1.1 ± 0.2	L	2'000 ± 20	Q	0.35 ± 0.10
C*	0.5 +0.1/-0.0	H	35 ± 3	M	50 ± 2	R	0.15
D	6.0 ± 0.1	I	∅ 3.4 ± 0.2	N	30 ± 1	S	1.1 ± 0.1
E	5.0 ± 0.5	J	∅ 5.7 ± 0.2	O	∅ 16 ± 1	T	0.64

* Presented dimension and tolerance of the probe thickness is applied for the K Hall probes manufactured after January 2012. Those probes are labeled with Serial numbers beginning from xxx-12.
 Obsolete K probes with thickness of 0.6 (+0.1/-0.0) mm are produced prior January 2012th and are not longer in production.

Figure 2. The dimensions of the K Hall probe and Cable (Module H)

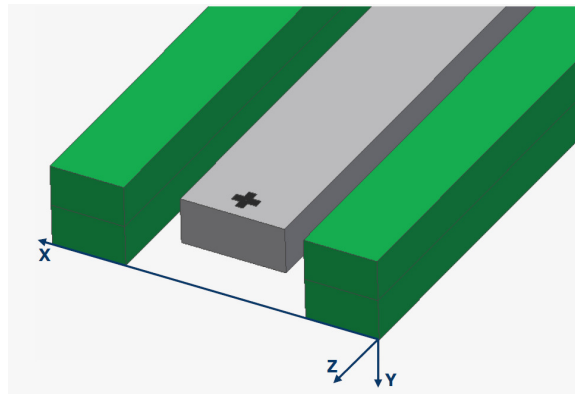


Figure 3. The reference Cartesian coordinate system of the K Hall probe

Dimension	X [mm]	Y [mm]	Z [mm]
Magnetic field sensitive volume (MFSV)	0.15	0.01	0.15
Position of the center of MFSV (corresponding to MFSP, see Fig.2)	1.0 ± 0.1	-0.4 ± 0.05	-0.35 ± 0.1
Total Probe external dimensions	2.0 ± 0.1	$0.5 +0.1/-0.0$	47 ± 1
Angular accuracy of the axes	$\pm 1^\circ$ with respect to the reference surface		
CaH Cable	Shielded, with a flexible thin part near the probe		
Total length of the CaH cable (dimension "L" in Fig. 2):	<ul style="list-style-type: none"> • Standard: 2 m (Probe notation: OYK02) • Optional: xx m (Probe notation: OYKxx) 		

Note: Different lengths are available upon request.

INSTALLATION MANUAL FOR K HALL PROBE

Warning: the Probe Tip is Fragile!

The probe package is made of ceramics, and can be easily broken. Therefore, avoid any mechanical contact of the probe tip with other objects! Moreover, avoid the immersion of the probe of any liquid, and its exposure to moisture and aggressive gasses.

The following precautions shall help ensure that the transducer accurate calibration remains preserved:

1. The mounting of the probe should be carried out by application of very low pressure to its back-end and thin wires.
2. If the probe head is clamped, the user should make sure that the substrate surface in contact with the reference plane of the probe is flat and covers as much of the probe reference surface as possible.
3. Do not apply more force than required to hold the probe in its place.
4. In order to prevent rupture of the thin wires from the probe head, the user should fix and secure the probe cable in the proximity of the probe. The thin wires of the flexible section of the cable may be folded with care; repeated strong bending should be avoided.
5. Also, avoid any high pressure and bending of the transient section between the thin and the thick cables:

