

**ILK
DRESDEN**



Exzellenz ab null Kelvin



CONTACT

Institut für Luft- und Kältetechnik
- a nonprofit organization -
Cryogenics and Low Temperature Physics
Bertolt-Brecht-Allee 20
01309 Dresden

T +49 351 / 4081 5101

Andreas.Kade@ilkdresden.de
www.ilkdresden.de



PROTOTYPING

Customized low-temperature
thermal systems

Low-temperature measurements

Specific developments and
consultations



OUR SERVICES IN THE DEPARTMENT

CRYOGENICS AND LOW TEMPERATURE PHYSICS

Research & development
Product design & construction
Prototyping
Technology transfer
Licensing
Training & workshops



Exzellenz ab null Kelvin



Technical data - general

inputs	8 x 4 channels 4-wire inputs (Sub-D 25)
channel extender	16 channels 4-wire multiplexer for cryostats
display	7" TFT touch display
data interface	USB (FT232), RS485 potential free
data protocol	MODBUS RTU
heater interface	1 x analogue (current and voltage 4-wire sensed) 1 x on/off (supply voltage)
current input	-20 .. 20 mA
voltage input	-30 .. +30 V differential
interlock relay	1 x n.o. programmable
50/60 Hz lock-in	AC mains synchronized measurement (optional)
size	19" rack 3U height (431 x 133 x 330 mm)
power consumption	< 3 W (without heater)

Technical data – temperature measurement

resistance range	0 .. 50 k Ω (automatic adjustment)
measurement voltage ranges	(3, 6, 12, 25, 50, 100, 200, 1200) mV
ADC	24 bit, 50 readings/sec
built-in reference	1 k Ω and 1.25 V, 0.01 % error
measurement precision	R < 1 k Ω : 40 m Ω + 5 · 10 ⁻⁴ · R R > 1 k Ω : 0.5 Ω + 8 · 10 ⁻⁸ · R ²
lowest excitation voltage	U < 3 mV (\approx 0.3 nW @ 1 k Ω sensor)
sensor calibration curves	Pt100, Pt1000, custom for each channel (three resistance ranges @ 8 th degree polynom each)

