**Advanced Technology for Railways.**
The ProLine P 50000 series high voltage transducers were developed specifically for current and voltage measurements in the rolling stock sector. Outstanding safety features, optimized versatility and the extraordinary reliability make them the new standard for the new development and modernization of rail vehicles. The calibrated range switchover in particular ensures exceptionally high application quality.

**Knick Sets Standards Worldwide.**
Knick has been manufacturing top-quality electronic measuring devices for over 70 years. No matter whether in rail substations, high voltage motors or in other areas of railway infrastructure: Knick signal conditioners are used successfully throughout the world. The new ProLine P 50000 high voltage transducers are now taking us into the rolling stock sector.
If a technical product is slightly better than its competitors in numerous details, it probably comes from Knick. Like the new ProLine P 50000 series.

ProLine P 50000 series transducers are designed specifically for high voltage and current measurement in multiple units (EMU/EMU) and locomotives – for short circuit detection, for monitoring traction converters and traction motors, auxiliary converters and accumulator batteries.

The high flexibility created by switchable measuring ranges and an integrated universal power supply are completely new in this product range.

- Protection against accidental contact and contamination by covers over all connections.
- Integrated universal power supply: 24 – 230V AC/DC.
- Monitor output: Diagnostics contact transmits device status.
- Long-time stable isolation due to high partial discharge resistance (> 10 kV).
- Measurement voltages up to 4800 V DC.
- Switchable: calibrated ranges, filter band widths, current or voltage output.
- Robust bolt flange, DIN rail mounting as an alternative.
### Multiple Applications

- Voltage measurement up to 4800 V
- Current measurement in kA range via shunt resistor
- Main circuits in DC-powered trains up to Un = 3000 V
- Drives / main converters in DC- and AC-powered trains
- Traction and auxiliary converters, rectifiers
- Monitoring of emergency and auxiliary circuits
- Control systems and emergency shutdown systems
- Energy measurement in accordance with EN 50463

### Extremely Safe

- Conforms to the latest fire protection standard EN 45545-2 to hazard level HL3
- Protective separation through reinforced insulation up to 3600 V AC/DC to EN 50124-1, IEC 62497
- Basic insulation up to 4800 V AC/DC
- High reliability and stability for critical measurements
- EMI resistance according to EN 50121-1 and EN 50121-3-2
- Protection against accidental contact – effective protection against electric shock to IEC 61373
- RAMS: diagnostics contact for device status

### Extremely Robust

- Extremely robust encapsulated design
- Minimized failure probability
- Wear-free operation – no maintenance required
- High tolerance to contamination and overvoltage
- Continuous monitoring of input and output circuit, as well as device status
- 3-port isolation prevents measurement errors
- Temperature resistant to class TX: -40 °C to +85 °C
- Resistant to vibrations and shock according to IEC 61373
- Altitude category AX – up to 4000 m above sea level

### Simple Handling

- Integrated universal power supply with 24 V to 230 V AC/DC
- Direct supply from 110 V DC sources
- Output signals (±): 0/4 ... 20 mA, 40 mA, 0 ... 5/10 V
- Simple connection of a low-pass filter for noise suppression
- Easy system integration
- Explicit labeling prevents installation errors
- Terminal cover on the input and output side
- Hood reduces the contamination of creepage distances and improves isolation
- Flexible mounting with four bolts or on DIN rails

### Application Example

**ProLine P 51000**

- Voltage: 4200 V DC
- Range: 0 ... 30 mV
- Outputs: 4 ... 20 mA

**ProLine P 52000**

- Voltage: 24 ... 230 V AC/DC
- Range: 4 ... 20 mA
- Outputs: + and -

**Diagnostics**

- 24 ... 230 V AC/DC