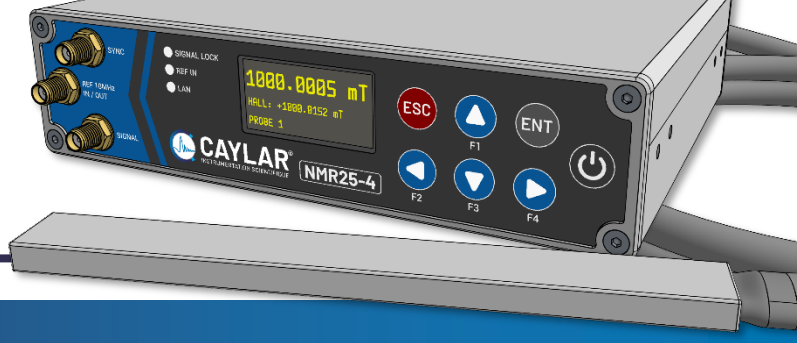
CAYLAR®
INSTRUMENTATION SCIENTIFIQUE

NMR25-4 Datasheet v1.04 EN



The new NMR25-4 teslameter redefines compact NMR magnetic field measurement technology. Fully integrated in a **1U rack format**, this all-in-one instrument combines the gaussmeter, four probes multiplexer, and preamplification stage into a single unit. Designed for maximum simplicity, it can operate with a single Ethernet PoE or USB-C cable offering an ultra-compact and easy-to-integrate solution for high-precision measurements.

Ultra-High Resolution and Ultra-Low Noise Performance

5 nT reading resolution, with absolute accuracy better than ±0.5 µT and noise down to 0.1 µTpp.

Ultra Compact Format & Small Probe Size

1U format, 165 x 40 x 137 mm (W x H x D), < 0.85 Kg weight
Two units fit within a single 19-inch rack width
Extremely compact standard probes: 6,4 x 16 x 142.5 mm

Smart and Flexible Connectivity

2 USB-C ports for serial-over-USB operation
RS232 /485 through 9 pts Sub-D connector (up to 921 600 bauds)
RJ45 Ethernet connector with power over ethernet (PoE / PoE+)

Low Power Equipment

Power consumption < 5 Watts (5V – 1A max)
Flexible power input options via Ethernet (PoE), SUB-D, or USB-C connectors, with optional wide-range 5 to 24 V power input
Can be powered from a smartphone charger, PC USB port, or external power bank

High tolerance to field gradients

Tolerates field gradients > 2 mT/cm at 1 T (2000 ppm/cm)

High-Speed Reading and Low Search Time

Fast 100 Hz measurement rate with adjustable moving average from 1 to 250 measurements
Finds and locks onto the signal in less than one second

Wide Measurement Range

16 mT to 13 T, with high dynamic range probe of 5:1 typical
90 mT to 2.2 T or 140 mT to 3 T covered using 2 probes
16 mT to 2.2T covered using 3 probes

Reliability & Service Continuity

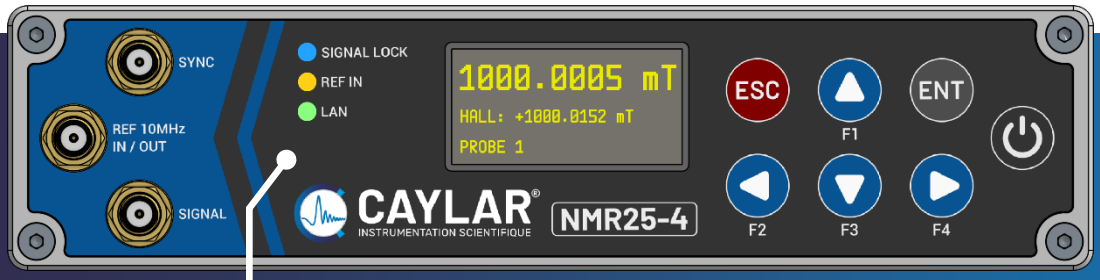
5-year warranty & long-term support availability
40+ years of Drusch service expertise

Suitable for High-Radiation Environments

Radiation-tolerant probe architecture with no digital circuitry.
Proven performance under extreme radiation for over 20 years

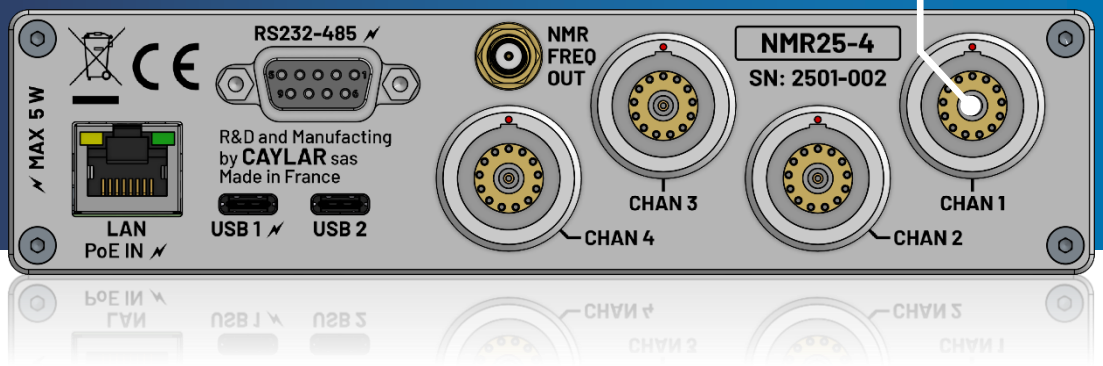
Custom Probe Solutions

Ultra-Thin Probe Design (< 2 mm), UHV compatible probes
Custom geometry and range



Front-panel control via the integrated keypad and display enables standalone operation without external control connections.

Supports up to 4 probes, with an internal multiplexer. Optional parallel multi-channel readout.



MADE IN FRANCE

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TECHNICAL SPECIFICATIONS

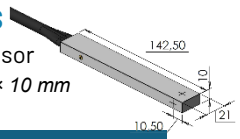
METROLOGICAL PERFORMANCE	
Measurement range	**14 mT to 13 T**
Reading resolution	**5 nT**
Absolute accuracy	**Better than ±0.5 µT**
Noise	**Down to 0.1 µTpp**
Measurement rate / averaging	**Up to 100 samples/s**, moving average adjustable from 1 to 250 measurements
Signal search and lock time	**< 0.3 s with Hall Assist and 1s without**
Field-gradient tolerance	**> 2 mT/cm at 1 T (2000 ppm/cm)**
Frequency reference	**±5 ppb (-40 °C to 95 °C)**, typical ageing ±0.2 ppb/day
PROBE SYSTEM	
Probe inputs / readout	**Up to 4 probes with internal multiplexer**
Dynamic range (typ.).	**5:1** (Standard probes)
Probe cable lengths	**2.5m / 10m / 15m**
Standard probes	**Model A:** 10 × 21 × 142.5 mm from 14 to 200mT **Model B:** 6,4 × 16 × 142.5 mm from 50 to 13T
Probes architecture	**Radiation-tolerant probe architecture** with minimal active electronics and no digital circuitry
Special probes options	**Model C:** 6 × 8 × 142.5 mm **Model T:** Ultra-thin < 2 mm **Model R**: 110 mm component-free sensing zone, including passive components. **Others:** UHV-compatible, custom geometry and range
CONNECTIVITY & CONTROL	
Ethernet	**RJ45, PoE / PoE+**
USB	**2 × USB-C, serial-over-USB**
Serial interface	**RS-232 / RS-485** via 9-pin Sub-D **up to 921,600 baud**
Local	**Integrated display and keypad**
SDK / API	**Python / LabVIEW SDK Library & API** control, readout, NMR signal streaming Ready-to-use code examples
POWER	
Power consumption	**< 5 W (5 V - 1 A max)**
Power inputs	**Ethernet PoE, USB-C or Sub-D** optional 5 to 24 V input
MECHANICAL	
Format / dimensions	**Compact 1U**, 165 x 40 x 137 mm (Width x Height x Depth)
Weight	**0.85 Kg**
ENVIRONMENT	
Operating	10–40 °C, RH 80% max at 31°C (50% at 40 °C) main unit magnetic environment < 0.2 T
Storage	-20 to 60 °C; RH 80% max, non-condensing
SERVICE	
Warranty & support	**5-year warranty,** <12 h typ. response, 1 business day max
Calibration	**ISO/IEC 17025** accredited calibration available

PROBE RANGE

STANDARD PROBES

Model A - with Hall sensor

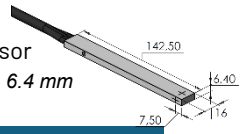
Dimensions: 142.5 × 21 × 10 mm



Reference	Range
PRBA14-40mT	14-40mT
PRBA20-100mT	20-100mT
PRBA30-150mT	30-150mT
PRBA40-200mT	40-200mT

Model B - with Hall sensor

Dimensions: 142.5 × 16 × 6.4 mm



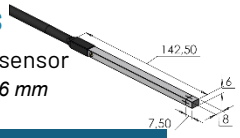
Reference	Range
PRBB50-250mT	50-250mT
PRBB60-300mT	60-300mT
PRBB80-400mT	80-400mT
PRBB100-500mT	100-500mT
PRBB160-800mT	160-800mT
PRBB240-1.2T	0.24-1.2T
PRBB300-1.5T	0.30-1.5T
PRBB360-1.8T	0.36-1.8T
PRBB450-2.1T	0.45-2.1T
PRBB700-3T*	**0.70-3T**
PRBB2-5T	2-5T
PRBB4-9T	4-9T
PRBB6-13T	6-13T

*Recommended for MRI application

MINIATURE PROBES

Model C - without Hall sensor

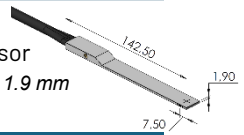
Dimensions: 142.5 × 8 × 6 mm



Reference	Range
PRBC100-500mT	100-500mT
PRBC160-800mT	160-800mT
PRBC0.24-1.2T	0.24-1.2T
PRBC0.36-1.8T	0.36-1.8T
PRBC0.45-2.1T	0.45-2.1T

Model T - with Hall sensor

Dimensions: 142.5 x 16 x 1.9 mm



Model	Range
PRBT100-500mT	100-500mT
PRBT160-800mT	160-800mT
PRBT0.24-1.2T	0.24-1.2T
PRBT0.36-1.8T	0.36-1.8T

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