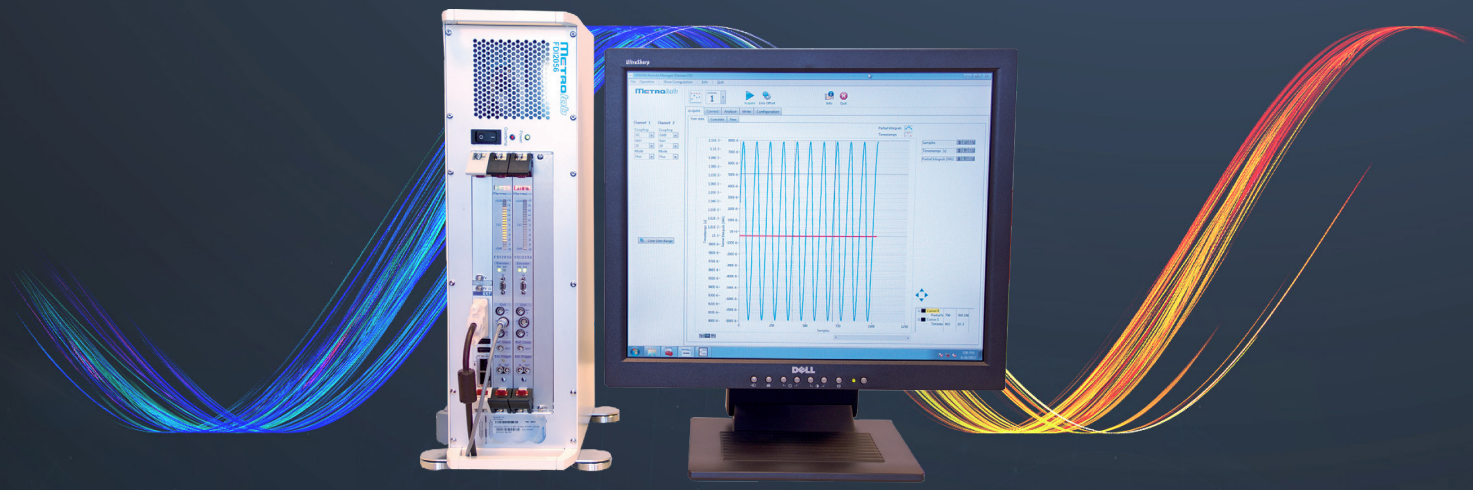
Metrolab

Magnetic precision has a name

FDI2056

THE FIRST OFF-THE-SHELF INSTRUMENT TO QUANTIFY MAGNETIC FIELD TRANSIENTS



The Fast Digital Integrator FDI2056 is the world's fastest and most sensitive voltage integrator. Plug in a sense coil, and for the first time it is possible - even easy - to measure fast, low-level magnetic field disturbances such as eddy currents in a switched magnet.

Speed
Up to 500 000 partial integrals per second

Resolution
Down to 10^{-14} Vs (0.8 µV x 12.5 ns)

Drift
10^{-5} Full Scale / minute

Input voltage
Up to ± 100 V

Accuracy and stability in the ppm range

Trigger sources
External, timer, encoder, software, multichannel

Number of channels
Up to 3

Interfaces
Ethernet (IEEE 488.2 compliant) or RS-232 (PDI5025 emulation)

ABOUT METROLAB

We are the **global market leader** for precision magnetometers.

Established in Switzerland **in 1985**, we have won the trust of all the large physics laboratories and all leading players in Magnetic Resonance Imaging, **across the world**.

With Metrolab, you measure magnetic fields with **Swiss precision and quality**.

DIGITIZER

Gain	0.1, 0.2, 0.4, 0.5, 1.0, 2, 4, 5, 10, 20, 40, 50, 100	-
Dynamic range	± 10 ÷ Gain	V
Input overvoltage protection	± 15 ÷ Gain	V
Max common mode voltage	12 ÷ Gain	V
Max input bandwidth	250 @ Gain ≤ 10, decreasing to 25 @ Gain 100	KhZ

Noise floor (@ 1kHz bandwidth)

Input impedance	200	kΩ
Gain accuracy	10	ppm
Digitizer resolution	18	bit
Max sample rate	500	kS/s
Nonlinearity : Single Tone	-105	dBc
Nonlinearity : Dual Tone	-95	dB

INTEGRATOR

Timer resolution	12,5	ns
Time base stability over temperature	± 0.075 (0 to 60°C)	ppm
Time base stability over time	$< 5 \times 10^{-4}$ (30 s) ± 0.7 (1 year)	ppm
Drift	10^{-5}	FS/min[1]
Drift variation	typical < Noise Floor ÷ 5	Vs / s

COMMON

Trigger sources	External, timer, encoder, software, multichannel	-
Trigger rate	0,02 to 500k	Hz
Encoder input:		
Voltage	3,3 or 5	V
Current protection	750 (Hold), 1500 (Trip)	mA
Signal type	Single-ended or differential	-
Index type	None, or 90° - 270°	-
Memory capacity	1M	PI[2]

SYSTEM

Industrial computer	Intel x86 architecture, Windows OS, 16 GB RAM, 32 GB Flash drive, Ethernet, USB 2.0 [3]	
Number of channels	1 - 3	-
Ethernet Interface	VXI-11 (IEEE 488.2), SCPI compliant	-
Max transfer rate (Ethernet)	1000 [3]	PI / s [2]
RS-232 Interface	PDI5025 compatibility mode	-
Power requirements	100 - 240 V, 50 - 60 Hz, 80 A inrush current max	-
Operating temperature	0 - 40	°C
Size and weight	445 x 130 x 245 mm (19"x3U), 7.2 kg max	-
Mounting	Horizontal or vertical, optional rack-mount kit	-
Recommended calibration interval	12	months

[1] FS = Full Scale [2] PI = Partial Integral, including timestamp [3] Subject to change; contact Metrolab for exact specifications.

For detailed specifications, please see **www.metrolab.com**

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