

MFA-110

MEASURING & ANALYZING SYSTEM FOR MAGNETIC FIELDS

- Complete system including 3D isotropic standard probe, main unit, M-Stream software and PC notebook (optional)
- Gapless recording of magnetic flux density in the frequency range from 1 Hz to 400 kHz according to all major standards (e. g. ICNIRP or Directive 2013/35/EU)
- High resolution data capturing and storage of raw data
- M-Stream software for transparent data analysis including comparison with many international and national standards and guidelines in one system
- Open system, own guidelines can be implemented by the user
- The same measurement data can be evaluated according to different standards. Archived measurement data can be compared with new standards without repeating the measurement procedure.
- Evaluation according to the standards GB/T 37130 and MBN 10284-2: 2019-10 is preliminary implemented
- Template based measurements, evaluation and reporting



THE SYSTEM CONSISTS OF

- ✓ MFA-110 main unit
- ✓ 3D isotropic 100 cm² standard probe and/or customized probe(s), e. g. high sensitive 100 cm² probe or Ø 30 mm probe for high spatial resolution. Further customization of sensitivity, frequency range, cross-section area or cable length is available on request.
- ✓ M-Stream software for measurement and analysis. Additional licenses for analysis of the measurement data without main unit hardware are available.
- ✓ Suitable PC/notebook/tablet is available as an option

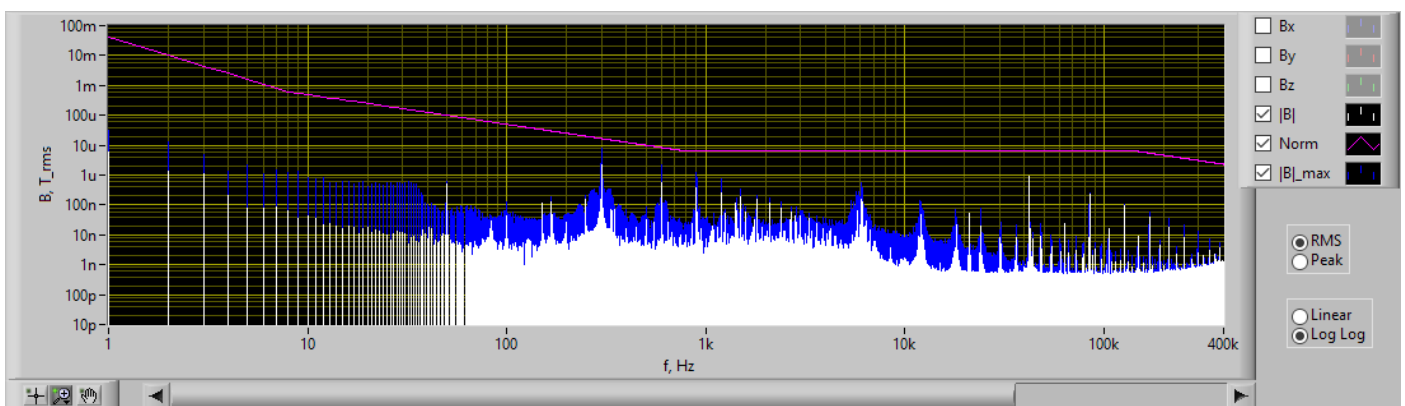
The MFA-110 is capable of measuring magnetic fields in a wide frequency and intensity range. It works vectorally by gap-less capturing the field induced electric signals in a standard isotropic 100 cm² probe (or in a special probe) in all three orthogonal directions. The signals are filtered, amplified, digitized and stored as raw data on the PC disk. The resolution and frequency range depend on the selected sampling rate and streaming time. Higher sampling rates and longer streaming times allow more detailed and accurate measurements, however require significant data storage space and processing capacity of the PC notebook as the data is directly transferred and stored on the disk. This process is controlled by buffer monitoring.

The M-Stream software processes the raw data including frequency dependent amplitude analysis via discrete Fourier transformation. Comparisons with various national and international standards or guidelines can be performed with

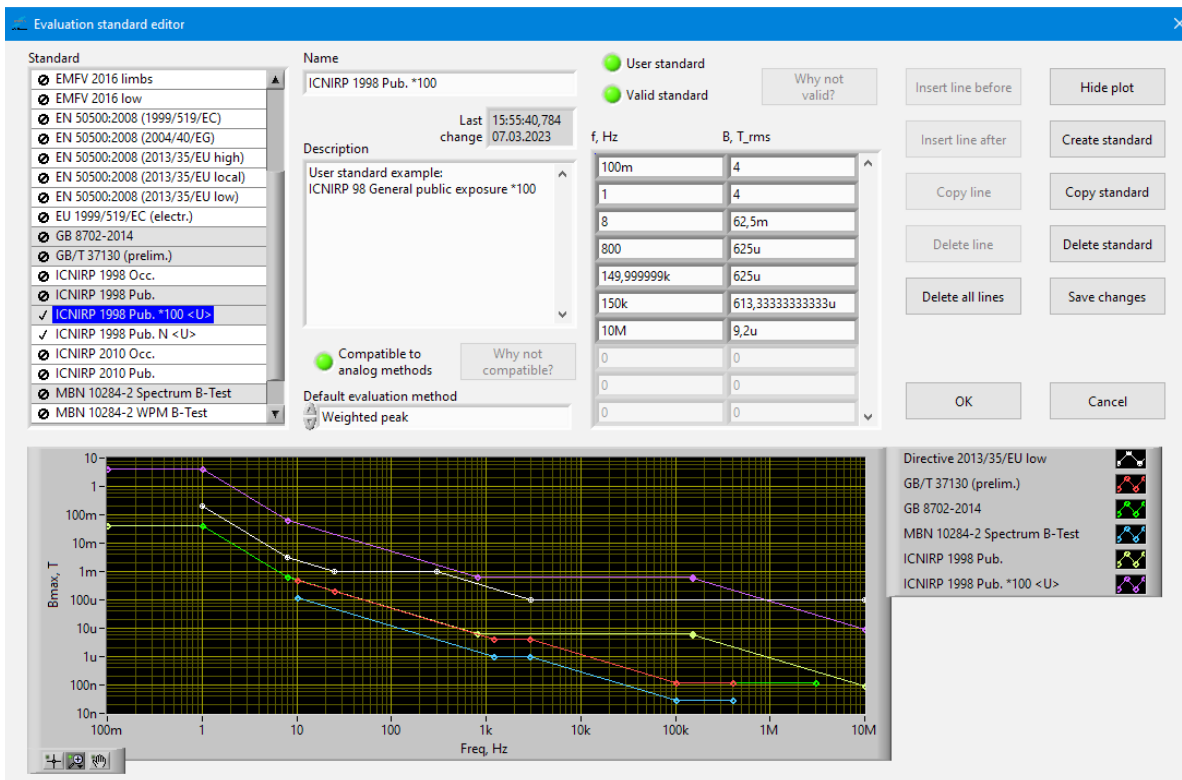
different methods e. g. with the Weighted Peak Method. Customized standard limits can be created with the built-in editor. Various user settings for measurement and data processing allow fulfilling specific measurement tasks.

The raw data is stored in the TDMS format and may be exported in ASCII or MS Excel formats e. g. for individual processing or be used for posterior evaluations with upcoming standards.

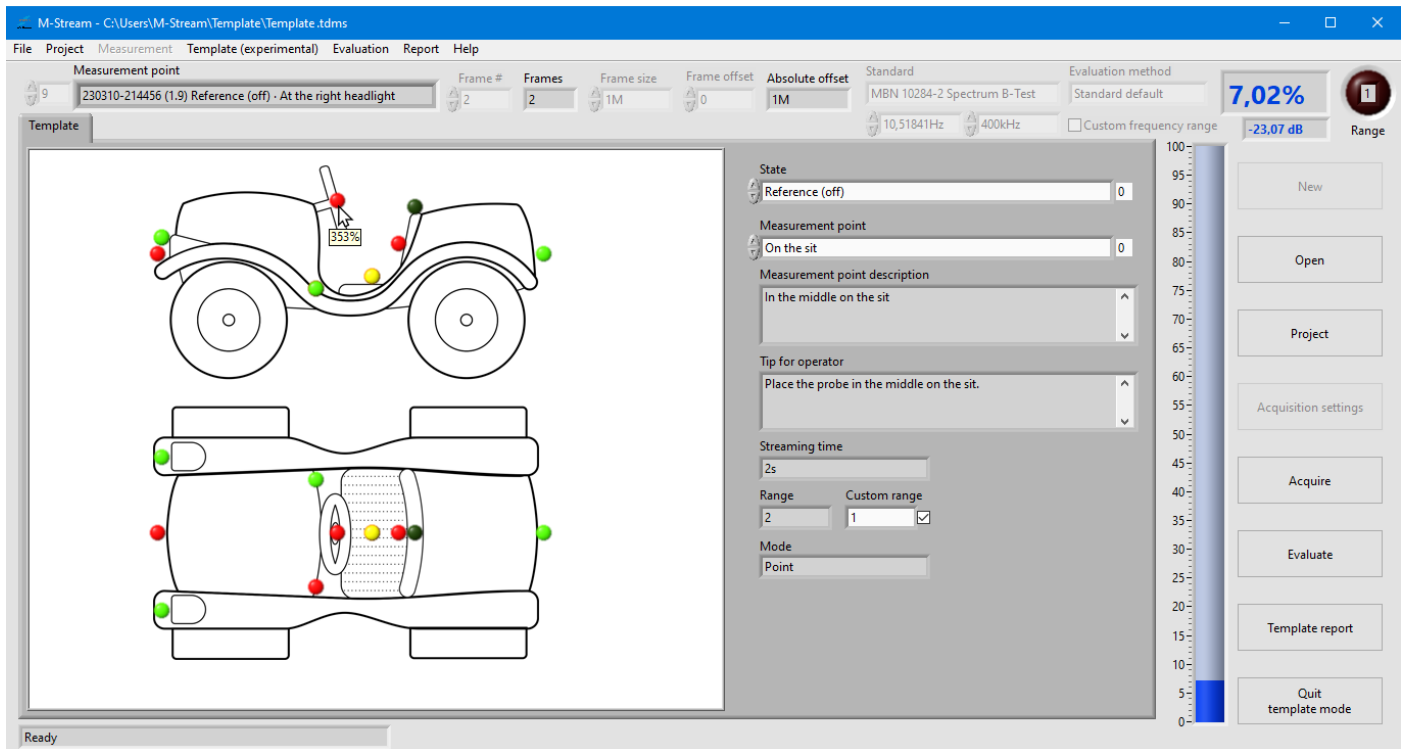
For performing multiple repetitive measurements according to a certain pattern, the template mode can be used. It allows to largely automate the process of measurement, evaluation and report generation according to the user needs. A flexible template editor allows individual customization of measurement and evaluation parameters as well as required report designs.



STANDARD LIMIT AND MEASURED FLUX DENSITY VS. FREQUENCY GRAPH (EXAMPLE)



STANDARD EDITOR USER INTERFACE



TEMPLATE MODE OF M-STREAM



MFA-110 MAIN UNIT SPECIFICATIONS

Part number	MFA-110-MUA-01
Max. frequency range	1 Hz – 400 kHz
Sampling rates	10 kHz, 100 kHz, 1 MHz, 1.67 MHz
Vertical resolution	14 bit
ADC channels	<ul style="list-style-type: none">• three channels for isotropic 3D probe• one auxiliary channel (BNC)
PC connection	two USB ports
Power supply	from USB, 4.6 – 5.25 V, max. 1400 mA
Dimensions	280 mm x 220 mm x 50 mm
Weight	2.23 kg (without PC notebook and probe)
Operating temperature range	0 °C – 40 °C (20 °C – 30 °C for optimal accuracy)
Operating humidity range	5 % – 80 % relative humidity, non-condensing
Storage temperature range	-20 °C – 60 °C
Storage humidity range	5 % – 90 % relative humidity, non-condensing
Attachment for notebook	Velcro fastening





M-STREAM SOFTWARE FOR MFA-110

MAIN FEATURES

- Gapless data acquisition with high resolution and storage of raw data
- Documented data analysis
- Discrete Fourier transformation for the presentation of the frequency dependent amplitude values
- Evaluation according to the main standards (ICNIRP 98, ICNIRP 2010, 26. BImSchV, Directive 2013/35/EU, BGV B11 etc.; GB/T 37130 and MBN 10284-2: 2019-10 are preliminary implemented)
- Export of raw data to TDMS, ASCII or Microsoft Excel (data export to Microsoft Excel requires Microsoft Excel)
- Sniffing mode
- Field rating values according to specific standards as function of time
- Editing function of standards
- Template measurements, evaluation and reporting (template reporting requires Microsoft Excel)
- Handheld mode

MINIMAL REQUIREMENTS

- MFA-110 measuring system (one MFA-110 main unit and one compatible probe)
- Operating systems: Windows 8, Windows 8.1 or Windows 10
- 2 GHz Dual-Core-Processor
- 4 GB RAM
- 60 GB hard disk
- 1366 x 768 display resolution
- one USB 2.0 port and one USB 3.0 port

RECOMMENDED REQUIREMENTS

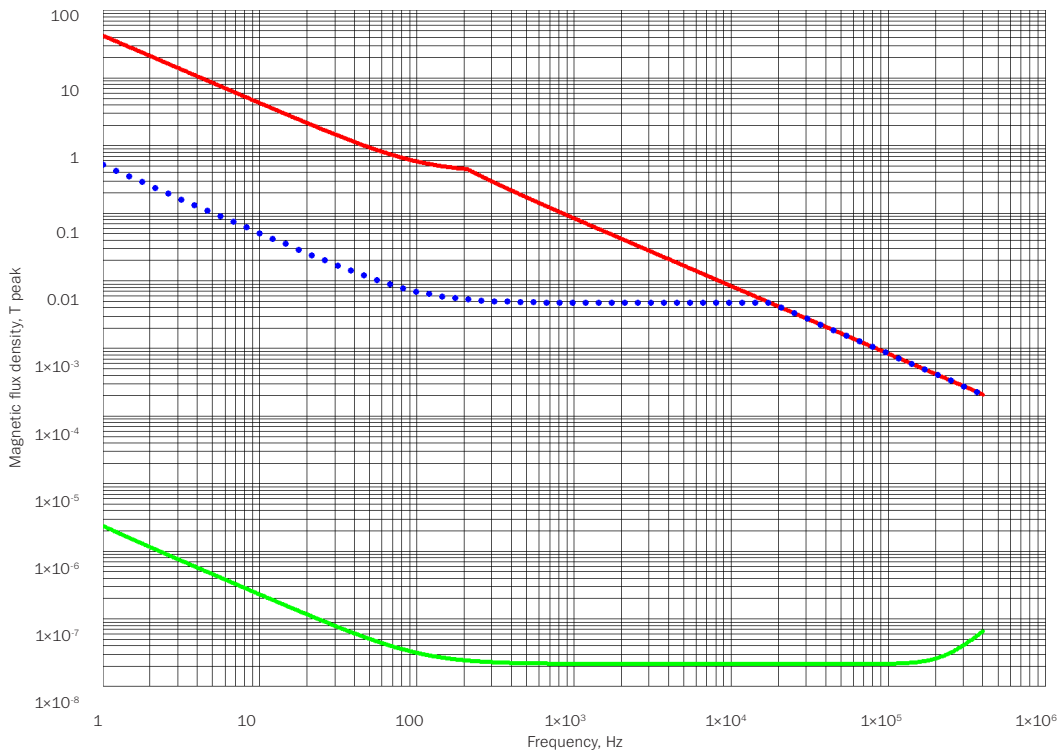
- MFA-110 measuring system (one MFA-110 main unit and one compatible probe)
- Operating system: Windows 10 (64 bit)
- Intel i5 2.4 GHz Processor (11" – 13" notebook, tablet or 2 in 1 PC)
- 8 GB RAM
- 120 GB SSD
- 1366 x 768 display resolution
- two USB 3.0 ports
- Microsoft Excel 2016/2013/2010/2007/2003/XP (32-bit) for template reporting and data export

3D ISOTROPIC STANDARD PROBE COMPATIBLE WITH MFA-110

This specification describes the properties and limits of the standard probe when operated with the MFA-110 Measuring & Analyzing System for Magnetic Fields

3D ISOTROPIC STANDARD PROBE SPECIFICATIONS

Part number	P3C100Q-01HFM40-K61-2B0-00
Average cross-section area	100 cm ²
Frequency range	1 Hz – 400 kHz
Push-button integrated	yes
Probe outer diameter	132 mm
Probe handle length	165 mm
Cable length	ca. 2.0 m
Probe weight	ca. 0.56 kg
Operating temperature range	0 °C – 40 °C (20 °C – 30 °C for optimal accuracy)
Operating humidity range	5 % – 80 % relative humidity, non-condensing
Storage temperature range	-20 °C – 60 °C
Storage humidity range	5 % – 90 % relative humidity, non-condensing



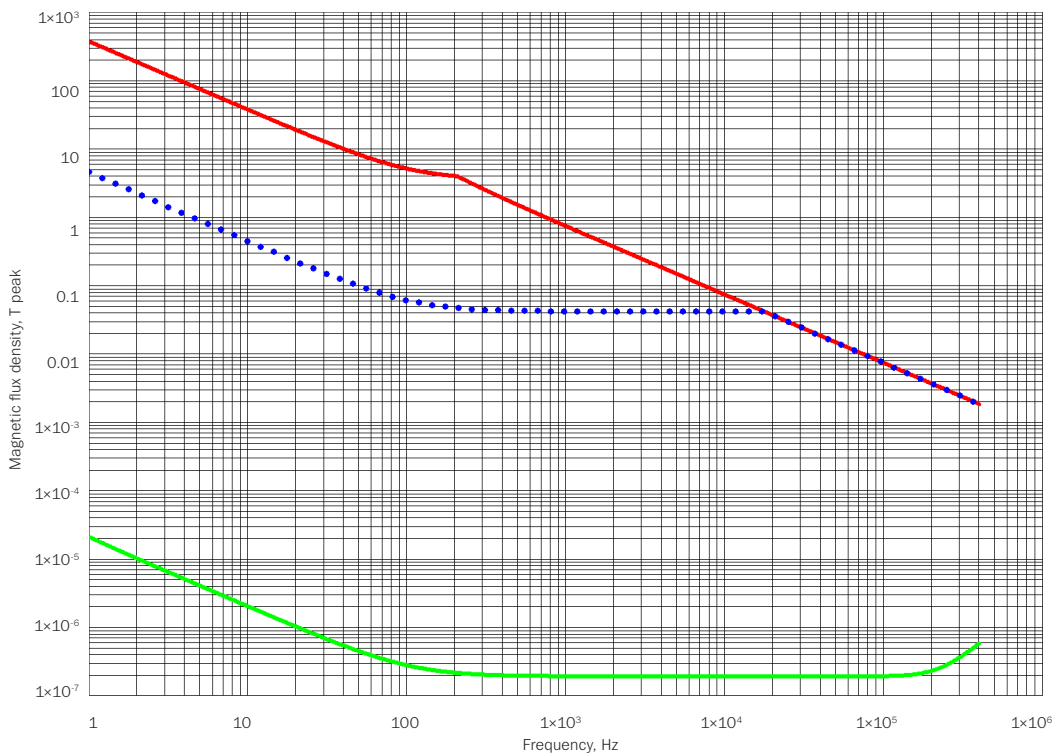
TYPICAL PROBE DAMAGE LIMIT (RED), OVERLOAD LIMIT (BLUE) AND SENSITIVITY (GREEN)

3D ISOTROPIC SPECIAL PROBE COMPATIBLE WITH MFA-110

This specification describes the properties and limits of the special probe when operated with the MFA-110 Measuring & Analyzing System for Magnetic Fields

3D ISOTROPIC SPECIAL PROBE SPECIFICATIONS

Part number	P3C03Q5-01HFM40-62V-2B0-00
Average cross-section area	3.5 cm ²
Frequency range	1 Hz – 400 kHz
Push-button integrated	yes
Probe outer diameter	30 mm
Probe handle length	165 mm
Cable length	ca. 2.0 m
Probe weight	ca. 0.24 kg
Operating temperature range	0 °C – 40 °C (20 °C – 30 °C for optimal accuracy)
Operating humidity range	5 % – 80 % relative humidity, non-condensing
Storage temperature range	-20 °C – 60 °C
Storage humidity range	5 % – 90 % relative humidity, non-condensing



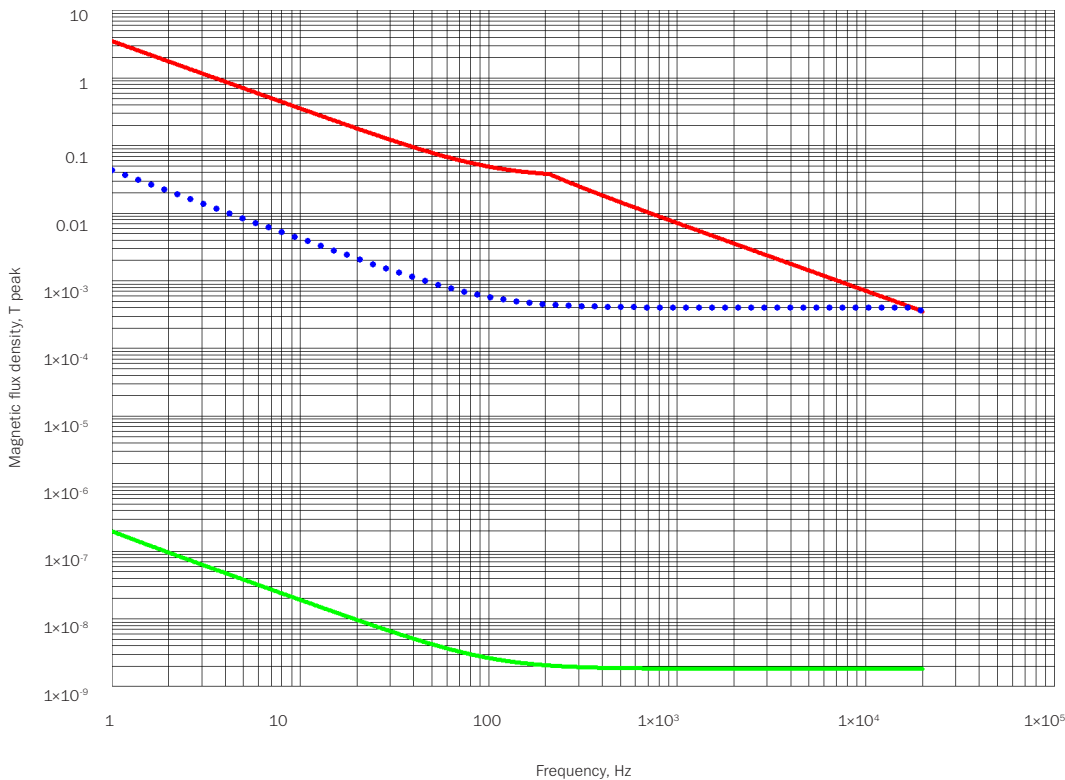
TYPICAL PROBE DAMAGE LIMIT (RED), OVERLOAD LIMIT (BLUE) AND SENSITIVITY (GREEN)

3D ISOTROPIC HIGH SENSITIVE PROBE COMPATIBLE WITH MFA-110

This specification describes the properties and limits of the high sensitive probe when operated with the MFA-110 Measuring & Analyzing System for Magnetic Fields

3D ISOTROPIC STANDARD PROBE SPECIFICATIONS

Part number	P3C100Q-01HF20K-6K9-2B0-00
Average cross-section area	100 cm ²
Frequency range	1 Hz – 20 kHz
Push-button integrated	yes
Probe outer diameter	132 mm
Probe handle length	165 mm
Cable length	ca. 2.0 m
Probe weight	ca. 0.56 kg
Operating temperature range	0 °C – 40 °C (20 °C – 30 °C for optimal accuracy)
Operating humidity range	5 % – 80 % relative humidity, non-condensing
Storage temperature range	-20 °C – 60 °C
Storage humidity range	5 % – 90 % relative humidity, non-condensing



TYPICAL PROBE DAMAGE LIMIT (RED), OVERLOAD LIMIT (BLUE) AND SENSITIVITY (GREEN)

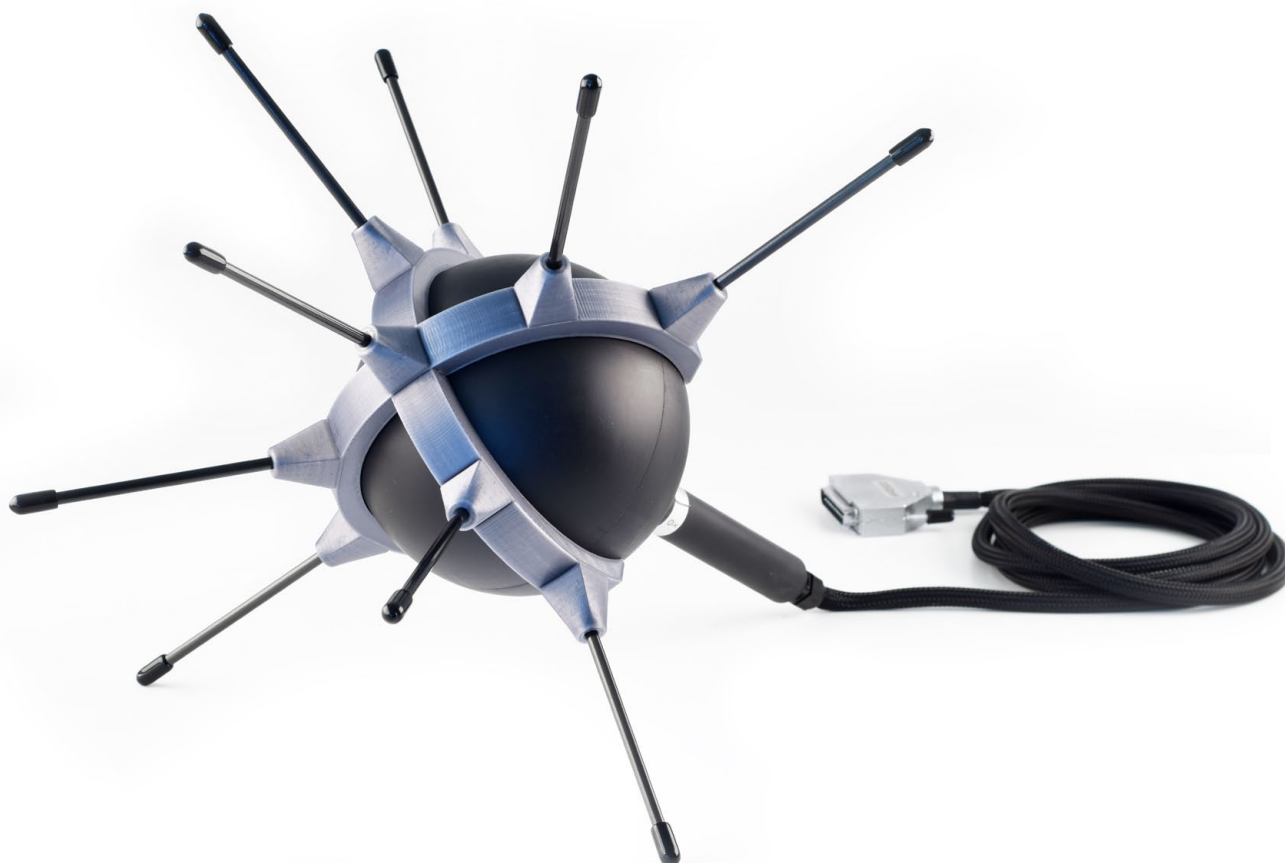
SPACER

for \varnothing 132 mm MFA-110 probe



Use our spacer when a specific distance to the measured object is required

- ✓ For distances of 100, 150 and 200 mm to the probe center
- ✓ Custom distances on request
- ✓ Total weight (entire set) ca. 160 g
- ✓ Space saving plug-in design
- ✓ Part number: P3CD132-DST100-150-200-00





100 mm distance

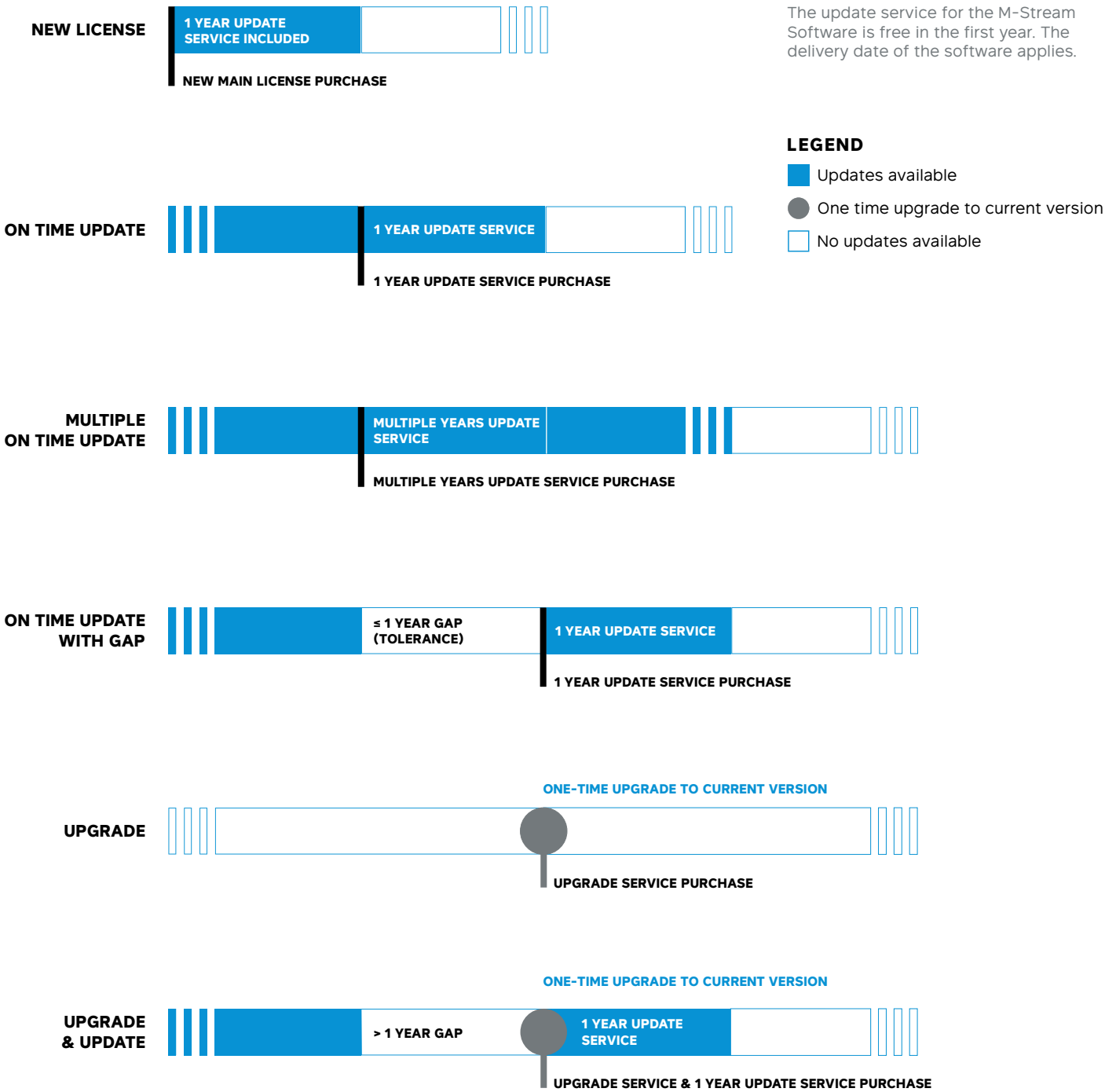


150 mm distance



200 mm distance

M-STREAM SOFTWARE LICENSING



The update service for the M-Stream Software is free in the first year. The delivery date of the software applies.

M-STREAM Main license for MFA-110 measuring system software

An MFA-110 measuring system hardware is required.

M-STREAM-DONGLE Sublicense for M-Stream software

The sublicense allows the use of the M-Stream software without connected MFA-110 hardware. A copy protection dongle is included. A valid main license is required. The software can only be used if a copy protection dongle is connected. The sublicense contains only the hardware-independent functions of the M-Stream software.

M-STREAM-UPDATE Update service for M-Stream software

The update service includes all updates of the M-Stream software for a main license and, if applicable, all associated sublicenses that are published within one year (beginning from the

last update service expiry date or beginning from the delivery date of the current update service). A valid main license is required. The last update service expiry date or upgrade delivery date must not be older than one year.

M-STREAM-UPGRADE Upgrade to current version of M-Stream software

The upgrade includes a one-time upgrade of the M-Stream software to the current version for one main license and, if applicable, all associated sublicenses. A valid main license is required.

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User access data is required.

GET IN TOUCH

You need more information? Give us a call or write us an email.
We are looking forward to supporting you.



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SEKELS GmbH develops, produces and trades technical products which are mostly related to magnetism. With a team of about 25 employees, almost half of them being physicists or engineers, SEKELS presently serves more than 600 customers worldwide.

As an expert distributor of VACUUMSCHMELZE GmbH & Co. KG we are offering an in-depth knowledge of their product lines and the applications, are available for technical consultation and provide fast availability of samples and series deliveries through comprehensive inventories and worldwide logistics.

SEKELS develops, designs and produces customer-specific laminations and core packages, magnetic shielding and shielding systems, inductive components and magnet systems – from prototyping to series production.

