MFG 40-100
FOR 50/60 HZ MAGNETIC FIELD TESTING

The manual operated magnetic field generator MFG 40-100 is a standard accessory to generates in conjunction with a magnetic loop a magnetic field. The MFG 40-100 provides a convenient means of generating and adjusting the current to flow through one of the magnetic field loops, like MFC 30 or MFC 300. It is required for magnetic field testing for fields up to 130 A/m. It complies with the requirements of IEC 61000-4-8 and can be used as a stand alone instrument.

HIGHLIGHTS
- As per IEC 61000-4-8
- Integrated sine wave generator and amplifier
- Manual stand-alone solution for 50/60 Hz-magnetic fields
- Specified for inductive loads
- Max. 40 A/m with MFC 30, 130 A/m with MFC 300
- Range selection High/Low
- Integrated overload protection

APPLICATION AREAS
- INDUSTRY
- RESIDENTIAL

FOR TESTS ACCORDING TO ...
- EN 61000-4-8
- EN 61000-6-1
- EN 61000-6-2
- IEC 61000-4-8
CIRCUIT DIAGRAM MFG 40-100

The MFG 40-100 includes a power supply as well as a sine wave signal generator to generate a 50 or 60 Hz-signal. To adjust the test-level an external ampere meter (not included in delivery) is required.

A High/Low-range selector at the likewise integrated amplifier allows to finetune the test level at low magnetic field strengths.

The required magnetic-field-frequency can be selected with a separate switch. 4 mm safety banana plugs has to be used to connect the loop antenna.

CURRENT REQUIRED IN LOOP ANTENNA

The field generated through the loop antenna is directly proportional to the current flowing through it. Use the external multimeter to adjust the required current.

\[ H = C_f \times I \]

Where \( H \) is the generated field, \( C_f \) the coil factor, \( I \) the current flowing through the loop.

<table>
<thead>
<tr>
<th>Standard level</th>
<th>Field in the loop A/m</th>
<th>Current required for loop antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFC 30 Cf = 9,8</td>
<td>MFC 300 Cf = 34</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0,102 A N/A</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>0,306 A 0,088 A</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>1,02 A 0,294 A</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>3,06 A 0,882 A</td>
</tr>
<tr>
<td>x</td>
<td>40(max)</td>
<td>4,08 A 1,18 A</td>
</tr>
<tr>
<td>x</td>
<td>130</td>
<td>N/A 3,82 A</td>
</tr>
</tbody>
</table>

MFG 40-100

TECHNICAL DETAILS

Magnetic field adjustment | Manually via potentiometer
Range Low

- 80 to 400 mA into MFC 30 (Cf 9,8) allows 0,8 to 4 A/m
- 80 to 400 mA into MFC 300 (Cf 34) allows 2,7 to 13,6 A/m

Range High

- 200 to 4,1 A into MFC 30 (Cf 9,8) allows 2 to 40 A/m
- 200 to 4,1 A into MFC 300 (Cf 34) allows 6,8 to 130 A/m

Dimensions | 195 x 180 380 mm
Weight | 4 kg
Connections

- Mains supply in socket (C14)
- Sockets for DVM, 4 mm safety banana sockets
- Power out via 4 mm safety banana sockets

Supply voltage | Wide-range power-supply
- 90 to 240 V AC
Power consumption | < 150 W
Operating temperature | 5° - 40° C
- 41° - 104° F
Overload protection | By temperature sensor on power stage
Total harmonic distortion (THD) | < 8% (nominal < 3,5% at full range)
Frequency

- Selectable 50 and 60 Hz +/- 3%
Operating position | Laying or standing on a work bench,
- or for more permanent applications,
- it can be wall mounted
Suitable loads | МFG 40-100 is designed to drive INDUCTIVE LOADS ONLY, such as multi-turn magnetic field loops.
- Connecting capacitive loads will destroy the instrument
## TECHNICAL DETAILS

### ACCESSORIES

<table>
<thead>
<tr>
<th>LOOP ANTENNA</th>
<th>Multi-turn magnetic field loop</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MFC 30</strong></td>
<td>1 turn, with pulse plug (included in delivery of MFC 30)</td>
</tr>
<tr>
<td></td>
<td>11 turns, with power plug (included in delivery of MFC 30)</td>
</tr>
<tr>
<td></td>
<td>Max. field strengths of 40 A/m (continuous)</td>
</tr>
<tr>
<td></td>
<td>4 mm safety banana plugs, connection cables to MFG 40-100 included</td>
</tr>
<tr>
<td><strong>MFC 300</strong></td>
<td>1 turn</td>
</tr>
<tr>
<td></td>
<td>5 turns</td>
</tr>
<tr>
<td></td>
<td>37 turns</td>
</tr>
<tr>
<td></td>
<td>Max. field strengths of 130 A/m (continuous)</td>
</tr>
<tr>
<td></td>
<td>Requires INA 2141 impedance box when used in combination with Profline system NSG 1007</td>
</tr>
<tr>
<td></td>
<td>Round 4 pole connector.</td>
</tr>
<tr>
<td></td>
<td>Interconnection cable to MFG 40-100 optional available (INA 3251)</td>
</tr>
<tr>
<td></td>
<td>Interconnection cable to Profline/NSG 1007 optional available (INA 3250), requires additional impedance box INA 2141</td>
</tr>
</tbody>
</table>
COMPETENCE WHEREVER YOU ARE

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Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Subject to change without further notice.