

# Three-Phase Transformer Demagnetizer **DEM60R**

- Fully automatic demagnetization
- Calculation of remanent magnetism
- Demagnetization currents 5 mA – 60 A DC
- Demagnetization progress graph
- Automatic discharging circuit
- Lightweight – 13.1 kg / 28.8 lbs



## Description

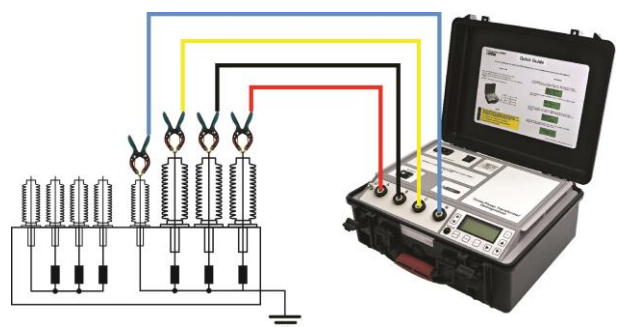
DEM60R is a three-phase, fully automatic test set specially designed for transformer demagnetization. Transformer magnetic core demagnetization requires alternating current applied with magnitude decreasing to zero. DEM60R provides this alternating current by internally changing the polarity of a controlled DC current. During the demagnetization process the instrument supplies the current at decreasing magnitude for each step, following a proprietary software solution. DEM60R is based on a state-of-the-art technology, using the most

advanced technique available today. The test set can be used to demagnetize single-phase and three-phase transformers.

For a three-phase operation, the instrument is connected to all the three phases of a transformer to be demagnetized. If specific vector diagrams are selected for different types of transformers, DEM60R will run a specific demagnetization procedure for each transformer type (i.e., single phase, delta, wye/star, zig-zag.) without a need to switch the test hookup cables.

## Application

When suspecting remanent magnetism, or when various test results, like FRA or magnetization/excitation current, show possible remanence, DEM60R can be used to perform fully automatic demagnetization.



*Connecting DEM60R to a three-phase transformer*

## Benefits and Features

### Eliminating Problems Created by Remanent Magnetism

After a DC current test, such as a winding resistance measurement, the magnetic core of a power or instrument transformer may be magnetized (remanent magnetism). Also, when disconnecting a transformer from service, some amount of magnetic flux trapped in the core could be present. The remanent magnetism can cause various problems such as erroneous diagnostics, inaccurate measurements on a transformer, an inrush current at a start-up of power transformer, or an incorrect operation of protective relays due to magnetized CT cores. To eliminate this source of potential problems, demagnetization should be performed.

### Calculation of Remanent Magnetism

DEM60R has a built-in proprietary algorithm for calculating remanent magnetism after the demagnetization. The instrument measures initial flux before demagnetization, maximum flux during demagnetization, and remanent flux after demagnetization. This feature provides useful information about the state of magnetic core after the demagnetization and assures user that demagnetization process is successful.

### DV-TR Software

The DV-TR software is included in the purchase price, and all its regular updates are free of charge. The software allows full control of DEM60R functions from a PC, is capable of plotting demagnetization current graph in a real time and provides results of remanent magnetism. The graphical display of demagnetizing current enables monitoring the transformer core demagnetization process. The generated graph can be saved on a computer. This option provides easy after-the-test analysis of the demagnetization process, in terms of current waveforms and values for each step, along with the duration of the complete process.

### Discharging Circuit

Injection of current and discharging energy from the inductance are both automatically regulated. During and after the operation, an intrinsically safe discharge circuit with an indicator rapidly dissipates the stored magnetic energy. The discharging circuit is independent of power supply, which means it will dissipate the stored energy even in case DEM60R power supply is accidentally broken.

## Technical Data

### Mains Power Supply

- Connection: according to IEC/EN60320-1; UL498, CSA 22.2
- Mains supply: 90 – 264 V AC
- Frequency: 50/60 Hz
- Input power: 2250 VA

### Output Data

- Test current 5 mA – 60 A DC

### Display

- LCD screen 20 characters by 4 lines
- LCD display with backlight, visible in bright sunlight

### Interface

- USB (standard)
- RS232 (optional)

### Warranty

- 3 years
- Additional 1 year upon registration on DV Power official website ([www.dv-power.com](http://www.dv-power.com))

### Dimensions and Weight

- Dimensions (W x H x D):  
480 x 190 x 385 mm  
18.9 x 7.48 x 15.16 in
- Weight:  
13.1 kg / 28.8 lbs

### Environmental Conditions

- Operating temperature:  
-20 °C – + 55 °C / -4 °F – +131 °F
- Storage & transportation:  
-40 °C – + 70°C / -40 °F – +158 °F
- Humidity: 0 % – 95 % relative humidity, non-condensing

### Applicable Standards

- Installation/Overvoltage category: II
- Pollution degree: 2
- Safety: LVD 2014/35/EU (CE Conform)  
Standard EN 61010-1:2010
- EMC: Directive 2014/30/EU (CE Conform)  
Standard EN 61326-1:2013

All specifications herein are valid at ambient temperature of + 25 °C and standard accessories.  
Specifications are subject to change without notice.



Set of 4 current cables with  
TTA clamps

Cable bag

Cable plastic case

Plastic transport case –  
medium size

## Order Info

Instrument	Article No.
Three-phase Transformer Demagnetizer DEM60R	DEM60RX-N-03

Included accessories	
Windows-based DV-TR PC software	
USB cable	
Ground (PE) cable	
Mains power cable	
Plastic transport case – medium size	

Standard accessories	Article No.
Current cables 4 x 10 m, 10 mm <sup>2</sup> (32.8 ft, 7 AWG) with TTA clamps	C4-10-10LMWC
Cable bag	CABLE-BAG-00

Optional accessories	Article No.
Current cables 4 x 15 m, 10 mm <sup>2</sup> (49.2 ft, 7 AWG) with TTA clamps	C4-15-10LMWC
Current cables 4 x 20 m, 16 mm <sup>2</sup> (65.6 ft, 5 AWG) with TTA clamps	C4-20-16LMWC
Cable plastic case – small size	CABLE-CAS-01
Cable plastic case – medium size	CABLE-CAS-02
Cable plastic case with wheels – medium size	CABLE-CAS-W2
Cable plastic case – large size	CABLE-CAS-03
Cable plastic case with wheels – large size	CABLE-CAS-W3
Plastic transport case – medium size	PLCAS-P00-02
Plastic transport case with wheels – medium size	PLCAS-P00-W2
Bluetooth communication module	BLUET-MOD-01