» DAC M30, M40, M60

A CLASS OF COMPACT, LIGHTWEIGHT, AND VERSATILE DAC MV CABLE TEST SYSTEMS FEATURING WITHSTAND VOLTAGE TEST, PD ANALYSIS AND PD LOCALIZATION

The Damped Alternating Current (DAC) M30, M40, M60 by **aca - Advanced Cable Accessories AG** is an exceptionally compact, lightweight, and versatile class of systems for testing and diagnosis of medium voltage transmission cables. They are programmable and feature automatic withstand voltage test, partial discharge (PD) measurement and analysis as well as PD localisation. Control and analysis are user-friendly using the **aca**-Suite which is the common software platform for the complete range of **aca** products. As additional feature also a cable sheath test can be performed.

DAC cable testing is not only a basic "good or bad" measurement tool but an advanced analysis and diagnosis concept. It allows to assess the cable insulation condition of newly installed, repaired or serviceaged cable systems and thus supports asset management.

THE MEASURING MODES INCLUDE:

» Voltage withstand test at voltage level representing operational stress and above as well as
» Partial discharge measurement, analysis, and location along complete cable systems

DAC VOLTAGE TEST AND PD ANALYSIS ALLOW RELIABLE DETECTION OF

» Insulation deficiencies caused by installation or laying,
» Deficiencies of the cable accessories, i.e. joints and terminations
» Cable insulation deterioration due to aging processes.

The test system comes in rugged and robust transportation and storage cases which are easy to ship by train, truck or even airplane to the cable test site. All required low and high voltage cables, connectors, calibrator and base load capacitor for testing of short cables are included in the kit.

TEST FEATURES

» Withstand voltage test
» Partial discharge measurement, analysis and location
» Cable testing as per IEC60060-3, IEEE P400.4/D7

ON SITE PERFORMANCE

» Max. charging and peak voltage 30, 40 and 60 kV, resp.
» System consists of 1 DAC unit plus base load capacitor, approx. only 100 kg total
» Rugged and robust transportation and storage cases
» Easy and intuitive operation with aca software Suite

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» Specification M30, M40, M60

SYSTEM LAYOUT	
Unit 1	DAC system incl. control, HVDC generator, switch and PD detector
Unit 2	Base load capacitor (for testing of short cables)
	200 nF/30 kV (for M30) or 60 kV (for M40, M60)
VOLTAGES AND OPERATION	
Power Supply	Single phase, 94 V...240 V, 48 Hz....63 Hz, 500 VA
DAC Output Voltage	M30: max. 30 kV_{peak}/21 kV_{RMS}
	M40: max. 40 kV_{peak}/28 kV_{RMS}
	M60: max. 60 kV_{peak}/42 kV_{RMS}
DAC Frequency Range	20 Hz...1000 Hz (according to IEC 60060-3)
OPERATION	
Test Object Capacity	0,025 µF... 5 µF (corresponding to approximately 20 km cable)
Sheath Test	Testing 3…10 kV; Pulse 1:3/1:5
Joint Locating	Integrated in calibration mode
PD Measuring Range	5 pC... 100 nC
PD Measuring Resolution	1 pC
Software	aca Suite including TDR, location mapping, phase resolved partial
	discharge analysis (PRPDA), pattern recognition, import of previous data
	formats, test report generator.
Safety Features	Safety Box with “emergency off” and “voltage on” control,
	grounding rod
Operating Range	Temperature: 0 - 50 °C
	Humidity: 5 - 90 % rel. humidity (RH), non-condensing
	Max. Altitude: 2000 m
DAC System Weight and	M30: 75 kg ⌀ 620 x h 690 mm
Dimensions	M40: 80 kg ⌀ 620 x h 690 mm
	M60: 90 kg ⌀ 620 x h 890 mm
Transportation Case	M30, M40: 780 x 780 x h 1250 mm
Dimensions	M60: 780 x 780 x h 1400 mm
	Base load and accessories 500 x 900 x h 700 mm

SCOPE OF SUPPLY:

- » DAC cable test system in rugged transportation and storage case
- » Base load capacitor in rugged transportation and storage case
- » Power supply, grounding and HV connection cable set, connector accessory box, grounding rod
- » Rechargeable calibrator with USB charging and signal cable
- » aca software Suite
- » Operating manual