Power cable testing and diagnosis

onsite HIGH VOLTAGE

HV400 / 500

DAC Test and Diagnosis System 400 / 500 kV kV_{peak}, for HV cable systems up to 345 / 410 kV

realDAC® HIGH VOLTAGE

Efficient, integrated diagnostics, comprehensive results

- ✓ Powerful PD monitored DAC withstand testing with application of IEEE, IEC, CENELEC and Cigré recommendations
- ✓ Highly sensitive PD measurement and diagnosis with automatic real-time PD localisation
- ✓ Integrated dissipation factor measurement at DAC voltages
- ✓ WIFI controlled automatic PD calibrator, ranging from 1 pC up to 150 000 pC
- ✓ Compact and lightweight
- ✓ All in one onsite testing and diagnosis of MV power cables up to 345 kV (1.31 x Uo)
- ✓ Built in Time Domain Reflectometer (TDR)
- ✓ High security, no electrical connection between DAC system and operating device (Wi-Fi)
- ✓ Automatic breakdown detection function during charging and testing
- ✓ Optional dual sided PD measurement and localisation, for long cables (ds version)
- ✓ Optional Extended Power (EP) version, for faster measurements on long cables

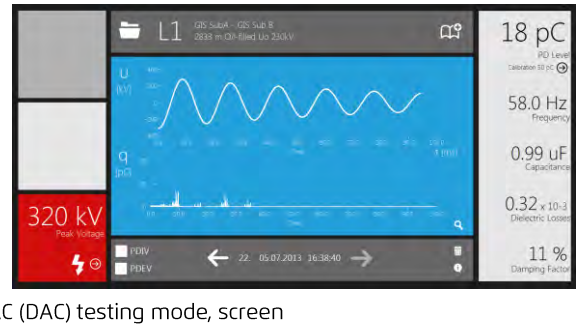
The inventor of realDAC

Technical Data HV400 / 500, HV400EP, HV400EPds

Note: This data sheet indicates general figures, exact specifications are provided on project base.

Max. output voltage	400 kV_{peak}, 282 kV_{rms} 500 kV_{peak}, 353 kV_{rms} Precision +/- 1 % Resolution 0.1 kV
Frequency range damped AC	10 Hz … 800 Hz
DAC Test object capacitance range	0.02 … 15 µF @400 kV_{peak}
HV energizing current, max.	7 mA, up to 28 mA* * Requires additional HV slave power supply units
PD measuring range	10 pC … 150 nC
PD measuring bandwidth	Acc. to IEC 60270
PD localisation bandwidth	150 kHz … 50 MHz, wide range automatic bandwidth adaptation for short and long cables
PD measuring resolution	1 pC
PD localisation accuracy	< 1% of cable length +/- 6 meters for ds version
TDR joint localisation in calibration mode	Integrated
Dissipation Factor (DF) measurement	0.10 … 10.00 %
Analysis software	DAC Explorer software, comprehensive viewing, processing, analysing and reporting of measurement data
Power supply (One HV master power supply unit)	3 phases AC 230/400 V ± 10%, 48 … 63 Hz, 5500 VA
Ambient temperature (operating)	-20 °C … +65 °C, 95%, non-condensing
Net weight (HV400)	approx. 770 kg (complete system)
Dimensions (HV400)	Ø 760 x H 1870 mm (HV divider unit) Ø 600 x H 2430 mm (Coil unit) Ø 800 x H 1880 mm (HV power supply unit) Ø 600 x H 1880 mm (HV switch unit)
Flight cases (HV400)	9 cases on wheels, total weight 1235 kg (incl. system)

Cahnges to specifications are subject to change without notice



Damped AC (DAC) testing mode, screen

Applications

- Capable of performing all necessary on-site tests and measurements on all types of (E)HV power cables
- After-laying testing of newly installed or repaired cable systems
- Testing in line with IEC 60840, IEC 62067, IEEE 400 and CENELEC HD 632 S2
- Routine testing and diagnostics for assessment of service-aged cables
- PD monitored voltage withstand testing and non-destructive diagnostic testing
- Comprehensive PD measurement capabilities according to IEC 60270, IEC 60885-3, IEEE 400.3

Features

- PD monitored withstand test by applying DAC voltage excitations up to 400 / 500 kV_{peak}
- Measurement of PD level, PD inception and PD extinction voltage
- Phase resolved PD analysis
- Multiple PD spot localisation in cable insulation and accessories
- Extended diagnosis with tip-up Dissipation Factor (Tanδ) values at DAC voltages
- Modular compact DAC system components stored in light-weight flight cases
- Easy to transport in standard trucks/vans or on airplanes
- Low energy mains consumption, mains only mall external power generator needed
- Flexible arrangement on site if accessibility is limited and space is tight
- Online "Live" PD Mapping
- Wireless controlled calibrator, for simple and fast calibration
- Calibration by cable length or propagation velocity
- Automatic breakdown detection function during charging and testing
- Optional Extended Power (EP) version for extra-long HV cables
- Expandable with double-sided measuring systems (ds version). Having a PD detector at both cable ends. This allows PD to be located even on very long cables, and the location accuracy is significantly higher.

onsite high voltage group
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