



Machinery Switchgear Tester

MST-204

The MST-204 Machinery Switchgear Tester is a measurement instrument designed for testing the effectiveness of protective measures in machines, low-voltage switchgear, and controlgear assemblies. Using the High-Voltage Adapter (HVA-204) expands the functionality of the main unit with HV AC capabilities. The Three-Phase Adapter (TPA-204) enables users to test welding equipment, portable appliances, mains cord extensions, PRCDs, EV charging cables, and more. The advanced AUTO-TEST function allows users to quickly and easily execute predefined test sequences or customer-created test plans. The built-in large memory can store measured results, which can later be transferred to PC software for creating test reports.

- Easy operation with using automatic parameter and limit control. Test limits and values are automatically set based on user input for measurement standards and Device Under Test (DUT) parameters
- The Advanced AUTO-TEST mode facilitates the easy and transparent preparation of test sequences, including instruction, test point definition, and organizational features
- A built-in HELP menu for each measurement assists the user in connecting the Device Under Test (DUT)
- The Commander remote control allows full control of the instrument from a distance
- Separated HVA-204 allows simpler usage of the MST-204 without HV AC functionality and delivers more pocket friendly solution.
- Fully compatible with "SW-MST-204" PC software to create test reports

An operator can perform measurements on the field simply by selecting appropriate standard (Machines, Switchgears, ...) and measurement function (RPE, RINS, LOOP impedance, ...). Limit values and other test parameters will be defined automatically on bases of selected standard.

KEY FEATURES

- Easy operation using automatic parameter and limit control. Test limit and values are automatically set based on the user input of measurement standard and Device under test parameters (DUT). Test limit values and parameters will be defined automatically
- Advanced AUTO-TEST mode allows easy and transparent test sequence preparation including instruction, test point definition and organization features
- Built in HELP menu for each of the measurement helps the user by connection of the Device under test (DUT)
- Fully compatible with "SW-MST-204" PC software to create test reports
- Graphic 4.3-inch, 480 × 272 pixels, full colour TFT LCD with touch screen for measurement values, limit values and test parameters
- Internal memory for 30.000 locations (tree memory structure, 4 levels)
- Integrated interface (USB 2.0) for transfer of measurement results to PC
- Additional four interfaces (USB 2.0) for connection of optional USB barcode scanner, USB keyboard and USB memory stick, all working in parallel
- Compact plastic housing with removable case cover
- Separate soft accessory bag for test leads and accessories
- Connection diagrams inside the case cover
- Limit values adjustable through measuring range in all functions
- Visual and acoustic warnings in case of exceeded limit value
- Adjustable acoustic signal intensity
- Real time clock for documentation of test results
- Timer-limited and continuous measurements
- Adjustable measurement times in timer-limited measurement
- Commander with START/STOP, SAVE and ENTER keys for very handy operations
- Two selectable display languages and two external keyboards supported (English and German)
- Possible assembly into 19-inch Rack Panel, 19-inch rack mount adapter available

REGULATIONS

Funcionallity:

- EN 60204-1 (Safety of machinery - Electrical equipment of machines: General requirements)
- EN 61439-1 (Low-voltage switchgear and controlgear assemblies: General rules)
- EN 61180 (High-voltage test techniques for low-voltage equipment)
- EN 50191 (Erection and operation of electrical test equipment)
- EN 60974-4 (Arc welding equipment: Periodic inspection and testing)
- EN 50678/DIN VDE 0701 (General procedure for verifying the effectiveness of the protective measures of electrical equipment after repair)
- EN 50699/DIN VDE 0702 (Recurrent Test of Electrical Equipment)
- EN 61557-1 (Equipment for testing, measuring or monitoring of protective measures: General requirements)
- EN 61557-2 (Insulation resistance)
- EN 61557-3 (Loop impedance)

MEASURING FUNCTIONS

- Visual Inspection
- Protective Bonding Resistance (2-wire, 4-wire) (0.2A, 10A, 25A)
- Prospective fault loop current, Loop impedance ZL/PE
- Prospective fault loop current (RCD no trip)
- Prospective fault loop current (MPCB no trip)
- Prospective short-circuit current, Line impedance, ZL/N, ZL/L
- Prospective short-circuit current (MPCB no trip)
- Prospective short-circuit current (Secondary AC/DC)
- Voltage Drop
- RCD testing (Trip time, Trip current, Uc, AUTO)
- IMD testing
- RCM testing
- Insulation resistance (UTEST 50V...1000V, ramp test)
- HV AC, voltage programmable 250V ... 5100 V
- Residual voltage
- Residual time
- Clamp load current and THD
- Clamp leakage current
- Touch current
- Voltage and THD
- Power via external clamp (S, P, Q, PF, cos ϕ)
- Phase rotation
- Voltage PELV
- Voltage SELV
- Voltage CONTROL
- Voltage DC Supply
- Documentation and Functional Tests

- EN 61557-6 (Effectiveness of RCD)
- EN 61557-7 (Phase sequence)
- EN 61557-10 (Combined measuring equipment for testing, measuring or monitoring of protective measures)
- EN 61557-11 (Effectiveness of RCM)
- EN 61557-14 (Equipment for testing the safety of electrical equipment of machinery)
- EN 61557-16 (Equipment for testing the effectiveness of the protective measures of electrical equipment and/or medical electrical equipment)

Safety:

- EN/IEC 61010-1:2010 (Third Edition) (Safety requirements for electrical equipment for measurement, control and laboratory use – General requirements)
- EN/IEC 61010-2-30:2010 (Safety requirements for electrical equipment for measurement, control and laboratory use - Particular requirements for equipment having testing or measuring circuits)
- EN/IEC 61010-31:2015 (Safety requirements for hand-held and hand-manipulated probe assemblies for electrical test and measurement)
- EN/IEC 61010-2-34:2017 and EN/IEC 61010-2-34:2021 (Safety requirements for measurement equipment for insulation resistance and test equipment for electric strength)

OPTIONAL ACCESSORIES

- CC-204-35A, AC current clamp up to 35 A, for leakage/load current measurements, cable equipped with three-pin round connector, current ratio 1000:1
- CC-204-1000A, AC current clamp up to 1000 A for load current measurements, cable equipped with three-pin round connector, current ratio 1000:1
- TC-204-D, Test cable with Schuko plug on one side and 3× 4-mm banana on the other side, for measurements on Schuko mains sockets, 2 m
- TC-204-CH, Test cable with Swiss SEV 1011 plug on one side and 3× 4-mm banana on the other side, for measurements on Swiss SEV 1011 mains sockets, 2 m
- TC-204-I, Test cable with Italian type L plug on one side and 3× 4-mm banana on the other side, for measurements on Italian mains sockets, 2 m
- TC-204-UK, Test cable with UK plug on one side and 3× 4-mm banana on the other side, for measurements on UK mains sockets, 2 m
- EXC-204, Extension cord, 10 m, for Commander
- ZA-204-D, Compensation adapter for compensation of test leads (Schuko socket)
- ZA-204-CH, Compensation adapter for compensation of test leads (Swiss socket)
- ZA-204-I, Compensation adapter for compensation of test leads (Italian socket)
- ZA-204-UK, Compensation adapter for compensation of test leads (UK socket)
- BCS-204, Barcode scanner 1250G
- KB-204-D, Keyboard German
- KB-204-UK, Keyboard English
- HVA-204, High-Voltage Adapter
- RACK-204, 19-inch Rack Panel
- TLS-204-MST, Test lead set for MachinerySwitchgear Tester MST-204, containing:
 - Test lead, both side 4 mm banana, 2.5 mm², yellow, 2 m
 - Test lead, both side 4 mm banana, 2.5 mm², black, 2 m
 - Test lead, both side 4 mm banana, 0.75 mm², blue, 2 m
 - Test lead, both side 4 mm banana, 0.75 mm², red, 2 m
 - Test lead, both side 4 mm banana, 0.75 mm², green, 2 m (welding equip.), 2 pcs
 - Test tip 600 V CAT IV, 36 A, 3 pcs
 - Crocodile clip 600 V CAT IV, 36 A, 4 pcs
 - Soft accessory bag
- WL-204, Warning Lamp red/green 24 VDC with 0.9 m cable
- WLC-204, Connector (male) for warning lamp (M12 / 5-pole)
- SP03, HV Test Gun with "START" switch, with 2 m cable and straight HV connector
- TLS-204-HVA, HV Test Lead Set for HVA-204 with safety cage containing:
 - HV test cable 3 m with HV connector on one end and open other end, 2 pcs
 - 9P D-sub connector (male) for example for PEDAL
 - 2 pole safety circuit cable connector (male), 2 pcs



APPLICATIONS

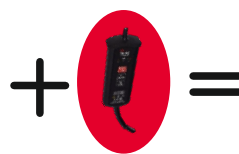
- Complete safety testing of Machinery according to EN 60204-1 standard
- Complete testing of Low-voltage switchgear and controlgear assemblies according to EN 61439-1 standard
- Complete testing of ARC welding devices according to EN 60947-4 standard in combination with Three-Phase Adapter TPA-204-63A* / TPA-204-32A*
- Complete testing of three-phase and single-phase supplied portable appliances (PAT) according to EN 50678/DIN VDE 0701 and EN 50699/DIN VDE 0702 standard in combination with Three-Phase Adapter TPA-204-63A* / TPA-204-32A*
- Complete testing of PRCDs according producer's instructions and in reference to EN 50678/DIN VDE 0701 and EN 50699/DIN VDE 0702 standard in combination with Three-Phase Adapter TPA-204-63A* / TPA-204-32A*
- Complete testing of mains cords and mains cord extensions according to EN 50678/DIN VDE 0701 and EN 50699/DIN VDE 0702 standard in combination with Three-Phase Adapter TPA-204-63A* / TPA-204-32A*
- Complete testing of Electric Vehicle charging cables in combination with Three-Phase Adapter TPA-204-63A* / TPA-204-32A*

* In development



MST-204 STANDARD SET

- MachinerySwitchgear Tester MST-204, basic instrument
- IEC - Schuko mains cord, 1.8 m
- IEC - CH mains cord, 2.0 m
- IEC - GB mains cord, 1.8 m
- IEC - IT mains cord, 1.8 m
- Test lead, both side 4 mm banana, 2.5 mm², yellow, 2 m
- Test lead, both side 4 mm banana, 2.5 mm², black, 2 m
- Test lead, both side 4 mm banana, 0.75 mm², blue 2 m
- Test lead, both side 4 mm banana, 0.75 mm², red 2 m
- Test tip 600 V CAT IV, 36 A, 3 pcs
- Crocodile clip 600 V CAT IV, 36A, 4 pcs
- Soft accessory bag
- USB cable
- User Manual booklet in English



MST-204 PLUS SET

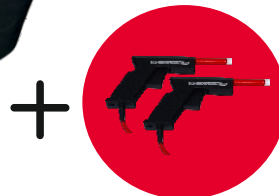
- MachinerySwitchgear Tester MST-204, basic instrument
- IEC - Schuko mains cord, 1.8 m
- IEC - CH mains cord, 2.0 m
- IEC - GB mains cord, 1.8 m
- IEC - IT mains cord, 1.8 m
- **Commander CM-204, 5 m**
- Test lead, both side 4 mm banana, 2.5 mm², yellow, 2 m
- Test lead, both side 4 mm banana, 2.5 mm², black, 2 m
- Test lead, both side 4 mm banana, 0.75 mm², blue 2 m
- Test lead, both side 4 mm banana, 0.75 mm², red 2 m
- Test tip 600 V CAT IV, 36 A, 3 pcs
- Crocodile clip 600 V CAT IV, 36A, 4 pcs
- Soft accessory bag
- USB cable
- User Manual booklet in English



With commander, distance doesn't matter.

HVA-204 STANDARD SET

- High-Voltage Adapter HVA-204 with 1.8 m fixed mains/communication cable
- Pedal P-204 with 3 m cable
- Soft accessory bag
- Safety instruction HVA-204 High-Voltage Adapter in English



HVA-204 PLUS SET

- High-Voltage Adapter HVA-204 with 1.8 m fixed mains/communication cable
- **HV Test Gun SP02 without "START" switch, with 2 m cable, 2 pcs**
- Pedal P-204 with 3 m cable
- Soft accessory bag
- Safety instruction HVA-204 High-Voltage Adapter in English



Feel the power in your hands with our test pistols.