MULTI-TEK INTERNATIONAL

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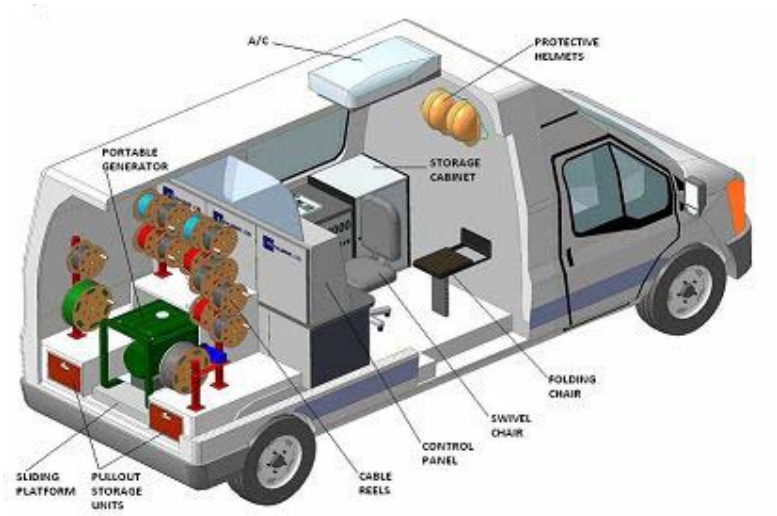
TRANSFORMER TEST VAN

TECHNICAL OFFER No. MTI 274 S



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TRANSFORMER TEST VAN

The transformer test Van performs the following functions:

1. Automatic Tan Delta Testing
   (12kV system)
2. Insulation Diagnostic Analyzing
   (transformer life expectancy)
3. Three Phase automatic Transformer Turns Ratio Testing
4. Three phase automatic Transformer Resistance Testing
5. Sweep Frequency Response Analyzing
6. Insulation Resistance Testing
7. Digital clamp meter
8. Cable drums and voltage detector
9. Power supply (generator)
10. Personal protective equipment/ toolkit
11. /12 Van type IVECO Power Daily with the internal fitting and fixtures.

NOTE: Specifications are subject to change without notice.

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A. MAIN EQUIPMENT
A1. AUTOMATIC TAN DELTA TEST

1 Delta 4310 Automated Insulation Power Factor Test Set (12kV system)

The new DELTA4000 Series is a fully automatic 12 kV insulation power factor/dissipation factor (tan∂) test set designed for condition assessment of electrical insulation in high voltage apparatus such as transformers, bushings, circuit breakers, cables, lightning arresters and rotating machinery. In addition to performing insulation power factor tests, the DELTA4000 Series can be used to measure the excitation current of transformer windings as well as to perform automatic tip-up tests. The test set is designed to provide a comprehensive AC insulation diagnostic test. The high power variable frequency design generates its own test signal independent of line frequency quality and the hardware design uses the latest technology available for digital filtering of the response signal. As a result, the DELTA4000 Series produces reliable results and stable readings in the shortest time with the highest accuracy, even in high interference 765kV substations.
The DELTA4000 Series operates with PowerDB software for automatic testing and reporting or with Delta Control software for real-time manual testing. Measurements include voltage, current, power (loss), tan delta, power factor and capacitance. The test results are automatically stored in the computer and can also be downloaded directly to USB storage or a printer.

TECHNICAL SPECIFICATIONS

Input:	100-240 V ±10%, 50/60 Hz, 16 A max
Output:	0 to 12 kV, continuously adjustable
Test Frequency Range:	45-70 Hz (12 kV) 15-400 Hz (4 kV) 1-500 Hz (250 V)
Output Power:	3.6 kVA
Output Current:	300 mA (4 minutes) 100 mA (continuous)
Voltage Measuring Range:	25 V to 12 kV, 1 V resolution
Current Measuring Range:	0 to 5 Amps, 0.1 µA maximum resolution. The measurement can be corrected to either 2.5 kV or 10 kV equivalents
Capacitance Measuring Range:	0 to 100 µF, 0.01 pF maximum resolution
Inductance Measuring Range:	6 H to 10 MH, 0.1 mH maximum resolution
Power Factor Measuring Range:	PF 0-100% (0-1)
Dissipation Factor Measuring Range:	DF 0-100 (0-10,000%)
Watt Loss	0 to 2 kW, actual power, 0 to 100 kW

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Measuring Range:	when corrected to 10 kV equivalent. 0.1 mW maximum resolution. The measurement can be corrected to either 2.5 kV or 10 kV equivalents.
Temperature Correction:	Intelligent temperature correctionfrom 5°C to 50°C insulation test temperature to 20°C reference
Accuracy:	Voltage ±(1% of reading + 1 digit) Current ±(1% of reading + 1 digit) Capacitance ±(0.5% of reading + 1 pF) Inductance ±(0.5% of reading + 1 mH) Power Factor ±(0.5% of reading + 0.02%) Dissipation Factor ±(0.5% of reading + 0.02%) Watt Loss ±(1% of reading + 1mW)
Measurement:	The following test modes are available: **UST: Ungrounded Specimen Testing** UST-B: Ground Red, Measure Blue UST-R: Ground Blue, Measure Red UST-RB: Measure Red and Blue **GST: Grounded Specimen Testing** GST-GND:GST: Ground Red and Blue GSTg-B:GST: Guard Blue, Ground Red GSTg-R:GST: Guard Red, Ground Blue GSTg-RB:GST: Guard Red and Blue
Noise Immunity Electrostatic:	15mA induced noise into any test lead with no loss of measurement accuracy at maximum interference to specimen current of 20:1
Noise Immunity Electromagnetic:	500 µT, at 50 Hz in any direction
Computer Interface:	Ethernet and USB
PC Requirements:	Internal PC with 8.4'' full-color VGA, full QWERTY keypad, navigational pushbuttons, and joystick (external mouse can be connected) on-screen view of test forms, USB printer interface.
Safety Qualifications:	IEC / ANSI 61010-1
Dimensions:	**Control:** 290 H x 290 W x 460 D mm **HV Unit:** 290 H x 290 W x 460 D mm
Weight:	**Control:** 15 kg **HV Unit:** 22 kg

FEATURES

- Easy to use with automatic and manual operation
- Accurate and repeatable measurement results with high noise suppression for the most extreme

conditions
- Lightweight, rugged two-piece design
- New built-in intelligent temperature correction, eliminates the need for temperature correction tables
- New automatic voltage dependence detection

A2. DIAGNOSTIC INSULATION TEST

2 **IDAX 350 Automatic Insulation Diagnostic Analyzer** (transformer life expectancy)

▪Automated measurement and analysis of moisture content, tan delta/power factor and oil conductivity
▪▪Individual temperature correction (ITC) of tan delta/power factor and oil conductivity
▪▪40% faster measurements with the new IDAX 5.0 SW
▪▪Reliable measurements in high-interference environments
▪▪Multi-function test set for transformer measurements

Description:
The IDAX 350 has a built-in computer but can also be used with an external computer. IDAX 300/350 provides an accurate and reliable condition assessment of insulation in transformers, bushings, generators and cables. The IDAX system maximizes the outcome of maintenance activities allowing for load and service life optimization.
IDAX 300/350 are smaller, lighter and faster than their

predecessor IDA200 and IDAX 206. It maintains better accuracy and ability to provide reliable data using true AC DFR (Dielectric Frequency Response), also known as FDS (Frequency Domain Spectroscopy), for reliable test results in high interference environments. The state-of-the-art software makes testing both easier and faster, allowing transformer moisture and oil assessment in about 22 minutes (20°C).
IDAX measures the capacitance and tan delta/power factor of the insulation between power transformer windings at multiple frequencies. Analyzing the results using modeling technique makes it possible to assess the moisture level in the solid insulation, oil conductivity/ tan delta at reference temperature (25°C) and power frequency tan delta at reference temperature (20°C). The test can be performed at any temperature as the temperature dependence of the dissipation factor is included in the modeling.

Application
With an aging power transformer population, today's electrical utility industry faces a tough challenge as transformer failures and consequent repair and revenue loss costs millions of dollars. Transformers have become one of the most mission critical components in the electrical grid. The need for reliable monitoring and diagnostic methods drives the world's leading experts to evaluate new technologies that improve reliability and optimize the use of every grid component.
IDAX is a revolutionary insulation diagnostic instrument based on DFR (Dielectric Frequency Response), also known as FDS (Frequency Domain Spectroscopy). This analysis technique has been used in laboratories for decades and IDA/IDAX was the first instrument designed for field use (1996). The IDA/IDAX instrument and measurement principle has been used and verified around the world over the last 15+ years.

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A3. THREE PHASE TRANSFORMER TURNS RATIO TEST

3 TT330 Three phase automatic Transformer Turns Ratio Test Set

The TTR300 Series of three-phase transformer turns ratio test sets are designed to measure the turns ratio of power, instrument, and distribution transformers in a substation or manufacturing environment. A rugged and robust design makes these instruments well suited for use in a variety of harsh environments. Our leads are specially designed to provide the necessary flexibility needed in cold weather.
The TTR300 Series are ideal for use by power transformer manufacturers. Their unique testing procedures and storage capability allows an operator to set up and test difficult three-phase transformers (with multiple tap changers and bushing CTs) in a fraction of the time than it used to take with other TTRs. This test also includes a pass/fail limit of individual ratios.
The TTR300 Series also measure the phase deviation of the transformer primary versus secondary. This quickly indicates problems in the transformer such as partial shorted turns and core faults. This measurement is also useful in verifying phase errors in all types of PTs and CTs.

TECHNICAL SPECIFICATIONS

Input Power:	120/230 V ac ±10%, single phase, 50/60 ±2 Hz 100 VA
Excitation Voltage:	8, 40, or 80 V rms, automatically or manually selected
Excitation Current Range and Accuracy:	0 to 500 mA, 3 digit resolution, ±(2% of reading + 1 digit)
Phase Deviation Range and Accuracy:	±90 degrees, 1 decimal point for the minutes display, 2 decimal points for the degree display, or for the centi-radian display. **Accuracy:** ±3 minutes
Turns Ratio Range and Accuracy:	**8 V ac:** ±0.1% (0.8 to 2000) ±0.25% (2001 to 4000) ±0.35% (4001 to 8000) **40 V ac:** ±0.1% (0.8 to 2000) ±0.15% (2001 to 4000) ±0.3% (4001 to 10,000) ±0.35% (10,001 to 25,000) **80 V ac:** ±0.1% (0.8 to 2000) ±0.15% (2001 to 4000) ±0.25% (4001 to 10,000) ±0.30% (10,001 to 45,000) **Resolution:** 5 digit for all ratios
Printer Interface:	USB
Computer Interface:	Ethernet
User Interface:	8.4 in., full-color VGA, test forms on-screen view, full QWERTY keypad and navigational pushbuttons

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Internal Data Storage:	up to 100,000 data sets
Transformer Winding Phase Relationship:	ANSI C57.12.70-1978 CEI/IEC 76-1:1993 and Publication 616:1978, AS-2374, Part 4-1982 (Australian Standard)
Safety/EMC/ Vibration	Meets the requirements of IEC-1010-1, CE and ASTM D999.75
Temperature Range:	**Operating:** -5° C to 50° C **Storage:** -50° C to 60° C
Relative Humidity:	0 to 90% noncondensing
Dimensions:	216 H x 546.1 W x 330.2 D mm
Weight:	11.3 Kg

FEATURES

- Fully automatic operation (stand-alone or remote-control) with user interface via on-screen customizable test forms
- Integrated PowerDB ONBOARD allows for data analysis and trending while in the field without the use of an external computer
- Built-in USB port and optional USB printer allows for 8.5”x 11” test forms printing without the use of a laptop
- Built-in capability for storing test results, in an open XML format, to either internal memory or to an external USB storage device
- Full 8.4” VGA color display

A4. TRANSFORMER OHMMETER/ WINDING RESISTANCE TEST

4 MTO330 Three phase automatic Transformer Ohmmeter Test Set

The MTO330 Transformer Ohmmeter is a line-operated, field-portable instrument designed specifically to measure the dc resistance of all types of magnetic windings safely and accurately. It can test transformers and rotating machine windings and perform low-current resistance measurements on connections, contacts and control circuits. The dual set

of potential inputs measures the resistance of the primary and secondary windings of a single- or three-phase transformer simultaneously. This dual reading, dual injection characteristic, also helps to speed up the measurements when used to test LV windings on large three-phase power transformers.
The Transformer Ohmmeter is extremely useful when testing the windings and contact resistance of tap-changers with "make-before-break" contacts and voltage regulators. This action will check for pitted or misaligned contacts as the instrument will give an indication if either condition occurs. Users are also protected by the auto-shutdown safety feature. Any inadvertent disconnection of a test lead or loss of power to the instrument will safely discharge the energy stored in the unit under test (UUT).

TECHNICAL SPECIFICATIONS:

Input: 120/240 V, 50/60 Hz, 720 VA
Output
User Selectable
Current Ratings:
Up to 10 mA
Up to 100 mAUp to 1 A
Up to 10A

- Open Circuit:
- Up to 50 V DC
- Test Voltage:
- Resistance Measurement/Display
- Resistance: 1 µOhm to 2000 Ohm
- Accuracy: ±0.25% reading, ±0.25% full scale
- Resolution: Up to 6 Digits
- Displays: Two 1" high, 6 character, 7 segment, LCDs
- One 0.71" high, 6 character, 7 segment,
- LCDs
- User Interface: B & W alphanumeric displays, keypad
- Internal Data Storage: Up to 10,000 data sets
- Operating Temperature: -10 oC to 50 oC
- Relative Humidity: 0 – 90% non condensing
- Dimensions: 216 x 546 x 330 mm
- Weight: 13.1 kg

FEATURES:

- · Direct 2-channel digital reading
- · DC test current up to 10 A maximum
- · 0.25% measurement accuracy
- · Integrated demagnetization feature
- · Tests operation of on-load tap-changers

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A5. SWEEP FREQUENCY RESPONSE TEST

5 FRAX 150 Sweep Frequency Response Analyzer

Power transformers are some of the most vital components in today's transmission and distribution infrastructure. Transformer failures cost enormous amounts of money in unexpected outages and unscheduled maintenance. It is important to avoid these failures and make testing and diagnostics reliable and efficient.
The FRAX 150 Sweep Frequency Response Analyzer (SFRA) detects potential mechanical and electrical problems that other methods are unable to detect. Major utilities and service companies have used the FRA method for more than a decade. The measurement is easy to perform and will capture a unique "fingerprint" of the transformer. The measurement is compared to a reference "fingerprint" and gives a direct answer if the mechanical parts of the transformer are unchanged or not. Deviations indicate geometrical and/or electrical changes within the transformer.

TECHNICAL SPECIFICATIONS

	Environmental
Application field:	The instrument is intended for use in medium and high-voltage substations and industrial environments.
Ambient temperature:	Operating -20°C to +50°C (-4°F to +122°F) Storage -20°C to 70°C (-4°F to +158°F)
Humidity:	< 90%RH, non-condensing
	CE-marking
EMC:	2004/108/EC
LVD:	2006/95/EC
	General
Mains voltage:	90 – 264 V AC, 47 – 63 Hz
Dimensions:	305 x 194 x 360 mm
Weight:	6 kg
	Measurement section
FRA Method:	Sweep frequency (SFRA)
Frequency range:	0.1 Hz – 25 MHz, user selectable
Number of points:	Default 1046, User selectable up to 32,000
Measurement time:	Default 64 s, fast setting, 37 s (20 Hz – 2 MHz)
Points spacing:	Log., linear or both
Dynamic range / Noise floor:	>130dB
Inaccuracy:	±0.5 dB down to -100 dB (10 Hz – 10 MHz)
IF bandwidth / Integration time:	User selectable (10% default)
Software:	FRAX for Windows 2000/ XP/Vista/7

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PC Communication:	USB
Calibration interval:	Max 3 years
Standards / guides:	Fulfill requirements in Cigré Brochure 342, 2008 Mechanical condition assessment of transformer windings using FRA and Chinese standard DL/T 911-2004, FRA on winding deformation of power transformers, as well as other international standards and recommendations
	Analog Output
Channels:	1
Compliance voltage:	0.2 – 24 V p-p
Measurement voltage at 50 Ω:	0.1 – 12 V p-p
Output impedance:	50 Ω
Protection:	Short-circuit protected
	Analog Input
Channels:	2
Sampling:	Simultaneously
Input impedance:	50 Ω
Sampling rate:	100 MS/s
	PC
Operating system:	Windows® based
Memory:	1000 records in internal memory External storage on USB stick

FEATURES

- Highest dynamic range and accuracy in the industry
- Built-in PC with powerful backlit screen for use in direct sunlight
- Highest possible repeatability by using reliable cable practice and high-performance instrumentation
- Fulfills all international standards for SFRA measurements
- Advanced analysis and decision support built into the software
- Imports data from other FRA test sets

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A6. INSULATION RESISTANCE TEST

6 MIT1025 Insulation Resistance Test Set

A key productivity feature is the ability to take measurements when connected to line power/mains with a dead battery. Intelligent battery charging ensures the optimum charge rate as a function of battery level, resulting in minimum charge times. The rugged case provides ultimate protection for a portable instrument and a clip-on lead pouch ensures that leads remain with the instrument at all times. The case lid is removable for improved terminal access. IP rating is IP65 with the case closed preventing water/dust ingress. High reliability and safety are built in; all models are safety rated to CATIV 600 V and are double insulated. Five preset voltage ranges are provided in insulation test mode, plus a user settable lock voltage range. Preconfigureddiagnostic tests include Polarisation Index (PI), Dielectric Absorption Ratio (DAR), dielectric discharge (DD), Stepped Voltage (SV) and ramp test.

TECHNICAL SPECIFICATIONS

Voltage input range:85-265 V rms, 50/60 Hz, 60 VA
Battery: 11.1 V, 5.2 A hour, meets IEC62133:2003
Battery life: Typical capacity 4.5 hours continuous at 10 kV with a 100 MΩ load
Battery charge time: 2.5 hours from deep discharge,
2 hours normal discharge 30 min. quick charge: 1 hour operation at 5 kV, 100 MΩ
Test voltages: 500 V, 1000 V, 2500 V, 5000 V,10000 V
User defined test voltage: 5 kV to 10 kV in 25 V steps
Accuracy (23 °C): ±5% to 2 TΩ, ±20% to 20 TΩ
Guard : 2% error guarding 500 kΩ leakage
with 100 MΩ load

Display range analogue: 100 kΩ to 10 TΩ
Display range digital: 10 kΩ to 20 TΩ
Short circuit current: 3 mA nominal, max. power on all
loads outperforming many 5 mA testers
Insulation alarm: 10 kΩ to 1 TΩ
Capacitor charge: <5 s/µF at 3 mA to 10 kV
Capacitor discharge: <500 ms/µF to discharge from 10000 V to 50 V

A7. DIGITAL MULTIMETER (CLAMPMETER)

7 DCM340 Digital Clamp meter

The DCM340 is a highly versatile instrument and ideal for use in the installation, maintenance, monitoring or checking of a.c. or d.c. electrical systems and equipment.
Current measurement combined with the comprehensive and accurate multimeter functions of the DCM340 eliminate the need to carry around both a clampmeter and multimeter – this instrument does it all.
The large clear digits of the numeric display are complemented by the high-resolution digital bar graph, useful for indicating trending and fluctuation of measurement. The backlight assists use in poorly lit areas such as distribution cupboards and corners of switchrooms; and the data-hold feature enables use on difficult access cables where otherwise the display may be impossible to see. Min/Max hold provides the ability to store the maximum and minimum d.c. or rms values over a period of time. While storage is taking place, either the present, maximum or minimum value can be displayed. Peak hold stores the maximum and minimum peak value of an a.c. signal at a 10 ms sample rate. The auto-off feature automatically places the meter in power-save mode after 30 minutes from power-on, but this can be disabled if required for min/max measurements.
Using the Relative mode (REL), a stable value can be stored, the instrument zeroed at that point, and then any variation from that value is displayed as a direct measurement relative to it. The DCM340 is safety rated to IEC 61010-1 Cat III 600 V, and is drop-tested to 1.2 m onto a hard floor. It is supplied with test leads and a carry case.

FEATURES

- DC and AC current and voltage
- 600 A and 600 V
- Resistance and continuity
- 3½ digit, 4000 count display with backlight
- High resolution digital bargraph
- Peak, min/max and data-hold functions

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AC Current

Range	Accuracy 50 - 60Hz	Accuracy 61 - 400Hz
0-60.0 A	±1.9% ±7 digits	±2.5% ±7 digits
60.0 - 400.0 A	±1.9% ±5 digits	±2.5% ±5 digits
400 - 600 A	±2.5% ±5 digits	±2.9% ±5 digits

DC Current

Range	Accuracy
0 - 60.0A	±1.5% ±10 digits
60.0 - 400.0A	±1.9% ±5 digits
400 - 600 A	±1.9% ±10 digits

Voltage

Range	50 - 500Hz Accuracy	DC Accuracy
0 - 400.0 V	±1.0% ±5 digits	±0.7% ±2 digits
400 - 600 V	±1.0% ±5 digits	±0.7% ±2 digits
Input impedance:	1 MΩ // < 100pF	

Resistance and Continuity

Range	Accuracy
0 - 400.0 Ω	±1% ±3 digits

Open circuit voltage: 3 V
Continuity Check: beeper sounds @ < 30 Ω

Frequency

Range	Resolution	Accuracy
20 - 400 Hz	1 Hz	±0.1 % ±2 digtits

Sensitivity:	3 A
Peak Hold:	±3% ±15 digits
Sample time:	10 ms
MIN/MAX Hold:	add 15 digits to accuracy for a.c. & d.c. A
Positional error:	±1% of reading
Overload protection:	600 V & 600 A rms
AC conversion:	Average sensing rms indication calibrated to the rms value of a sine wave input
Auto power-off:	30 minutes after power-on

LCD

Display:	3½ digit large-scale readout
Count:	40,000
Sample Rate:	1.5 per second
Overrange:	"OL"

Power Requirement

1 x 9V PP3 MN1604 6LR61 alkaline cell
Battery life: 200 hours (alkaline)

Operating Temperature

0°C - 30°C <80% Rh
30°C - 40°C <75% Rh
400°C - 50°C <45% Rh

Storage Temperature

-20°C - +60°C (<81% Rh)
(batteries removed)

A8. CABLE DRUMS & VOLTAGE DETECTOR

8 Cable Drums VD 4.137.001 and Voltage Detector

·-**Cable drum** with power feeding cable, length of cable 50 m
· Motorized cable drum with grounding cable with a crosssection 25 mm2, length of cable 75 m
· Cable drums with TTR/MTO X-H 3 phase shielded test lead set, length of cable 30 m
· Cable drums with FRAX Generator-Measure cable, length of cable 30 m

· Cable drums with MIT test cables, length of cable 30 m
· Cable drums with DELTA measurement leads, length of cable 30 m
· Motorized cable drum with DELTA HV lead, length of cable 30 m

-

Compact safety kit including Voltage detector type CZ

A9. POWER SUPPLY

9 Pramac S Class Generators

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The S Class Generators were developed with the contractor or rental operator in mind to meet the everyday demands found on multiple job sites. Powered by Honda gas engines, the S Class Generators are available from 3 to 12kW and are fully EPA, CARB and CSA compliant. Standard features include rugged frame design, large fuel tank with gauge, fuel valve, idle control, hour meter, voltage selector switch and easy to read electrical panel.

TECHNICAL SPECIFICATIONS:
Power (LTP): 4.00 kW
Power (COP): 3.80 kW
Voltage: 120, 240 V
Amps at 120 V
(LTP):
33.3 A
Amps at 120 V
(COP):
31.6 A
Amps at 240 V
(LTP):
16.7 A
Amps at 240 V
(COP):
15.8 A
Frequency: 60 Hz
Power Factor: 1 cosPhi
Engine
Manufacturer/
Model:
Honda/GX 240
Fuel Type: Gasoline
Displacement: 242 cc
Cycle: 4
Power: 5.3 kW/7.1 HP
Cooling System :Air
Noise Emission: 74 dB
Dimensions: 739 L x 565 W x 651 H mm
Weight: 72.6 kg

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A10. PERSONAL PROTECTIVE EQUIPMENT/TOOL KIT

10 Personnel Protective Equipment / Tool Kit

1	Dielectric gloves	2 pair
2	Dielectric boots	1 pair
3	Protective helmet	2 units
4	Tool Kit	1 unit
5	Set of socket wrenches vanadium	1 set
6	Set of close and open wrenches	1 set

B. VEHICLE

11 Chassis: IVECO Power Daily

TECHNICAL SPECIFICATIONS:

Engine: FIC E048IL/E3 – 4 STROKE -2998cc, Euro 3
Rated Output: 146HP @ 3000rpm
Rated Torque: 350Nm @ 1400-2750 rpm
Engine Details: Turbo Intercooler, Common Rail Injection system
Transmission: IVECO 2840.6 6+1 Speed Manual synchronized.
@ GVW 3500kg: Maximum Geared Speed 130 km/h, Gradeability 40%.
Suspension: Front: Independent with Torsion Bar. Back: Parabolic springs Shock Absorbers: 2 front and rear Front and Rear. Stabilizer bar Power steering
Wheels/Tires: 195/75R16 Michelin tubeless. Spare wheel located under the cargo area
Braking System: ABS 8+ EBD .Ventilated Disc brakes front and rear
Fuel Tank: 70 Lt with key lock
Fuel Type: Diesel
Electrical System: Battery maintenance free 12Volt- 110Ah

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12 Vehicle Body:

The transformer test van is designed to be easy to operate and service. It is equipped with high quality insulated wall panelling and air conditioning. The body is divided into technical and operator compartments separated by a partition wall. The technical compartment includes all the necessary tools and equipment for carrying out testing and inspections. Safety is an important feature of the laboratories and hence all equipment is properly mounted and secured for transit. The operator compartment provides a pleasant environment to work in with more room and plenty of storage. It is equipped with cabinetry and workbenches that increase the operators' efficiency and productivity.

FEATURES

· Roof mounted air conditioner
· Internal lighting 220 VAC & 12V DC
· Insulated walls and roof for higher thermal performance and noise reduction
· Special antistatic floor in operator area
· Special aluminium tread plate suitable for rough loading in technical area
· Partition wall 8mm, Operating desk & swivel chair
· Wall mounted folding seats
· Heavy duty sliding platform
· Multiple drawers for storage of equipment and accessories
· Computer - printer

Technical Specification MTI 274 S

№	Name of products	Q-ty
1.	**Operator Area**	
1.1.	Roof and Wall Lining – Thermal Insulation (i.e. polystyrene panels, MDF boards, fiberglass boards)	
1.2.	Floor Lining – Thermal Insulation (i.e. polystyrene panels, marine wood boards, anti-static linoleum floor covering)	
1.3.	Air Conditioning System	1
1.4.	Transparent Organic Glass – Partition Wall – 8mm Thick	1
1.5.	Compact Fluorescent Light Lamp 220 V	2
1.6.	Compact Fluorescent Light Lamp 12 V	3
1.7.	Operator Table (metal end frame, drawer, wooden worktop)	1
1.8.	Control & Electrics module metal end frame	1
1.9.	Storage Cabinet	1
1.10.	Drawer Cabinet	1
1.11.	Operator Swivel Chair	1
1.12.	Folding Seat	2
1.13.	Emergency Stop Switch	1
1.14.	Metal Documentation Holder	1
1.15.	Siren Sound System	1
1.16.	Extended Double Hook for Protective Helmet	2
1.17.	PVC Wiring Duct	1
1.18.	Mains Power Socket	2
2.	**Technical Area**	
2.1.	Roof and Wall Lining – Thermal Insulation (i.e. polystyrene panels, MDF boards, fiberglass boards)	
2.2.	Floor Lining (i.e. plywood boards, aluminum tread plate)	
2.3.	Cable/Generator Metal End Frame	1
2.4.	Heavy Duty Sliding Platform	1
2.5.	Pullout Storage Unit (i.e. Drawer)	1
2.6.	Cable Guiding Bracket	1
2.7.	Cable Channel	1
2.8.	Guided Safety Door Contacts	2
2.9.	Strobe Light System (Beacon)	1
3.	**Main equipment of the test van:**	
3.1.	Control Unit Module	1
3.2.	Main Power Supply Unit (i.e. electrics module)	1
3.3.	Safety Module	1
4.	**Block of cables and drums:**	
4.1.	Manual Drum of grounding cable with section 25mm², length of cable 50m	1

4.2.	Manual Drum of mains power cable, length of cable 50 m	1
4.3.	Manual Drums with 3-PHASE SHIELDED TEST LEAD SET: X AND H WINDING, 100 FT (25 m), TTR330 and MTO330	1
4.4.	Manual Drums with TEST LEAD SET: 100 FT (25m) INCLUDING HV, LV RED, LV BLUE for DELTA 4310	1
4.5.	Manual Drums FRAX 150 : 100 FT (25 m)	1
4.6.	Manual Drums for MIT 1025/2 (25 m)	1
5.	**Additional equipment:**	
5.1.	High Voltage Detector 275HVD	1
5.2.	Pramac S 7200 Portable Generator	1
5.3.	Mobile Computer	1
5.4.	Printer	1
5.5.	Tool Kit	1
5.6.	Set of socket wrenches chrome vanadium	1
5.7.	Set of close and open wrenches chrome vanadium	1
6.	**Safety equipment:**	
6.1.	Dielectric gloves - Insulating Gloves - HV work over glovers - Under glovers	2
6.2.	Insulating Rubber boots	1
6.3.	Protective helmet	2
6.4.	Insulating stick 35 kV	1
6.5.	Earth rod	1
6.6.	Warning posters	1
6.7.	Fire Extinguisher for Operator Area 6 Kg CO2	1
6.8.	First Aid Kit	1

Group exporter:
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