

5. Electrical Power Engineering Lab Equipment

SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
1	<p>Magnetic Circuits</p> <p>Model-De Lorenzo DL 3155M05R</p> <p>Brand: De Lorenzo</p> <p>Country of Origin-Italy</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> - Magnetic field created by a rectilinear conductor -Magnetic field created by a circular conducto -Magnetic field created by a solenoid conducto - Magnetic field created by a rectilinear conducto -Measurement of the magnetic induction -Magnetic switch- Electromagnet -Hysteresis cycle - Resistor not linear (VDR) <p>Accessories:</p> <ul style="list-style-type: none"> -Base frame with power supply and interface to PC
	<ul style="list-style-type: none"> -CAI Software: Complete with a student Navigator Software that allows students to perform their learning activities through a personal computer, without the need for any other documentation.
2	<p>DC Circuit Software Base Frame with Power Supply</p> <p>DL 3155MO1R</p> <p>DL3155MO1RSW</p> <p>DL3155AL2</p>

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SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
3	<p>Power Electronic Trainer (Tesca-33517)</p> <p>Technical Specifications:</p> <p>DC Power Supply on Board : $\pm 5V$ at 100mA : $\pm 12V$ at 150mA, : $\pm 15V$ at 50mA, : $\pm 35V$ at 50mA</p> <p>AC Power Supply on Board : 18V – 0V – 18V at 50mA : 15V – 0V – 15V at 50mA</p> <p>Triggering Circuit on Board : 5 gate signal output</p> <p>Frequency range : 40Hz to 900Hz Variable</p> <p>Amplitude : 12V</p> <p>PWM control of G1,G2,G3 and G4 Duty cycle control of "Gate" Signal is 0 to 100%</p> <p>Single Phase Rectifier : Firing angle control 0°–180° variables</p> <p>Firing Circuit on Board : Four gate signal output with isolation</p> <p>SCR Assembly : 4 SCRs 2P4M, 600V,2A</p> <p>Power Devices : IGBT-G4BC20S, MOSFET-IRF540, UJT-</p>
	<p>Load Resistance 120E, 270E, 1K, 2K2, each 5W</p> <p>Resistance on Board ($\frac{1}{2}$ W) 22E/5W, 100E/2W, 220E/2W</p> <p>Resistance on Board($\frac{1}{4}$W) 10K (3Nos.), 22K,33K,47K,</p> <p>Potential Meter 4K7(2Nos.), 1M(1Nos.)</p> <p>Pulse Transformer on Board : 2 Nos. PT4502, 1:1 and one is PT4503 1:1:1</p> <p>Toggle Switch : SPST (1Nos.)</p> <p>Power Requirement : 220V $\pm 10\%$, 50Hz</p>

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4	<p>CET-301 Electrical Transformer Trainer Electrical Engineering Trainer laboratory equipment</p> <p>Product Name CET-301 Electrical Transformer Trainer</p> <p>Brand: CHOIEO/OEM</p> <p>Model: CET-301</p> <p>MOQ: 1 set</p> <p>Port: Ningbo</p>
5	<p>Smart Trainer Ares (All in one Real time instruments and Education System), With (10) Modules Brand : Chungpa EMT, Country of Origin : Korea. Training included. Modules list are</p> <p>(1) Transformer Module (M04)</p> <p>(2) Semoconductor-1 Module (M05)</p> <p>(3) Digital Logic Module (M13)</p> <p>(4) RLC Circuit Module (M17)</p> <p>(5) Electric Magnetic Module (M18)</p> <p>(6) Magnetic Field Module(M19)</p> <p>(7) Pracatice Characteristics of the Magnetic Field Using a Compass-I Module (M20)</p> <p>(8) Fleming's Law using electric Motors and Generator Module (M21)</p> <p>(9) Characteristics of the coil Module (M22)</p> <p>(10) Basic Semiconductor Module (M23)</p>

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6	<p><u>Omron PLC 40 IO CP1L Training Kit Details Product Parts</u></p> <ol style="list-style-type: none"> 1. OMRON PLC CPU Units (CP1L-M40DR-A) <ul style="list-style-type: none"> - 40 Points, Memory capacity: 10K steps, - High-speed counters: 100 kHz, 4 axes, - (24 IN/16 OUT) Relay Output - AC power supply 2. Communication option board 3. RS232C Cable 9-PIN 2M(PLC-PC) 4. PLC Training Reference Text Book 5. Training Kit Case 6. USB Cable
7	<p>NS5 Omron HMI Training Kit</p> <p>Omron HMI training kit is touch screen or PT (Program Terminal) used for learning about to replace input/output of cabinet control panel, the present MMI/HMI use to control, display status, alarm/event of machine in factory. Trainee will understand how to create screens for the Touch screen by using support software and how to connect PT with PLC configuration and basic operation.</p> <p><u>Details Product Parts</u></p> <ol style="list-style-type: none"> 1. Omron Programmable Terminal 2. Omron Touch Screen NS5 Series 3. Operate a screen size 5.7 inches 4. Power Supply Voltage Output 24VDC 5. Switch ON/OFF 220VAC 6. OMRON NS Operation Manual 7. USB Connecting PC with PT

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SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
8	<p>Mini Production Unit Drilling Work Training System</p> <p>Details Product Parts</p> <ol style="list-style-type: none">1. Can be used with 220VAC 50Hz 1Phase.2. Six workpieces can be packed in a magazine.3. Six reed switches.4. Six flow control valves.5. One cylinder for pushing the workpiece from the magazine.6. One 24 VDC motor for drilling workpieces.7. One cylinder for moving the motor for drilling workpieces.8. One cylinder for pushing the workpiece.9. Three pushbutton switches.10. Three control valves for the control cylinder.11. One air control valve

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SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
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9	<p>Mini Production Unit Automatic Material Belt Sorting Training System</p> <p><u>Details Product Parts</u></p> <ol style="list-style-type: none">1. Can be used with 220VAC 50Hz 1Phase.2. One conveyor belt length 600 mm control with a 24VDC motor for drive the conveyor belt.3. One inductive proximity sensor.4. One capacitive proximity sensor.5. One photoelectric sensor.6. Four reed switches.7. Three pushbutton switches.8. One emergency switch.9. Two double acting cylinder.10. Two control valves for control cylinder.11. Power supply 24 VDC with a short-circuit protection.

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SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
10	<p>Mini Production Unit Trial Separation Components Training System <u>Detail Product</u></p> <ol style="list-style-type: none">1. Can be used with 220VAC 50Hz 1Phase.2. One rodless cylinder to move workpieces to storage positions.3. Six reed switches.4. Four flow control valves.5. One vacuum switch.6. One cylinder for move the vacuum to suction workpieces.7. Three pushbutton switches.8. Four control valves for control cylinder.9. One air control valve.10. One photoelectric sensor.11. Power supply 24 VDC with a short-circuit protection.12. Terminal size 4 mm for connect with PLC inputs/ outputs.13. The overall structure of the training set made of aluminum

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11	<p>Data Acquisition and Control Interface</p> <p>Festo-labvolt</p> <p>Modal-(579686-9063-D0)</p> <p>Insulated Voltage Inputs (4)</p> <p>-Range (Low / High Scales) -80 to +80 V / -800 to + 800 V (user-selectable through software)</p> <p>-Impedance (Low / High Scales) 326.6 kΩ / 3.25 MΩ</p> <p>-Bandwidth DC to 65 kHz (-3 dB)</p> <p>-Accuracy 1% (dc to 10 kHz)</p> <p>Insulated Current Inputs (4)</p> <p>-Range (Low / High Scales) -4 to +4 A / -40 to + 40 A (25 A rms)</p> <p>-Impedance (Low / High Scales) 5 mΩ / 50 mΩ</p> <p>-Bandwidth DC to 65 kHz (-3 dB)</p> <p>-Accuracy 1% (dc to 10 kHz)</p> <p>Analog Inputs (8)</p>
12	<p>Timing Belt</p> <p>Festo-labvolt</p> <p>Modal-(579637-8942-00)</p> <p>Pitch 9.5 mm (0.375 in)</p> <p>Pitch Length 819 mm (32.25 in)</p> <p>Number of Teeth- 86</p>
13	<p>24 V AC Power Supply</p> <p>Festo-labvolt</p> <p>Modal-(579697-30004-25)</p> <p>24V, 2.5A dc, \square</p>

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1	2
14	<p>Connection Lead Set</p> <p>Festo-labvolt</p> <p>Modal-(579638-8951-L0)</p> <p>Connection Leads with safety 4mm banana jack)</p>
15	<p>Synchronizing Module</p> <p>Festo-labvolt</p> <p>Modal-(586738-8621-00)</p> <p>-power input-220V, 50mA,50Hz</p> <p>-contacts-600V,1.5A AC</p> <p>-Remote control input-0/3.5-5V dc</p> <p>-Light bulbs(3)-28V,2.3W</p>
16	<p>Synchroscope Function</p> <p>Festo-labvolt</p> <p>Modal-(579789-9069-C0)</p> <p>-Computer control function for Synchronizing</p>
17	<p>Capacitor-Start Motor</p> <p>Festo-labvolt</p> <p>Modal-(579770-8251-05)</p> <p>220V ac, 175 W, 2.2A</p> <p>1400rpm</p> <p>Capacitor-Start Motor</p> <p>Festo-labvolt</p> <p>Modal-(579770-8251-05)</p> <p>220V ac, 175 W, 2.2A</p> <p>1400rpm</p>

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18	Universal Motor Festo-labvolt Modal-(579777-8254-05) 220V ac/dc, 175 W, 1.4A 1500rpm
19	Power Thyristors Festo-labvolt Modal-(763379-8841-25) 1200V, 1A
20	Permanent Magnet DC Motor Festo-labvolt Modal-(8114247-8213-10) 220W, 48V, 5A dc 3825 rpm
21	Fundamental Omron Sensor and Conveyor Training kit Proximity Sensor Omron (E2E-X5MEI 2M OMS) Capacitive Proximity Sensor Omron (E2k-X8MEI.2M) , Diffuse Reflective (E3Z-D61 2M OMS) , Fiber Optic Amplifier (E3X-HD11 2M) , Fiber Optic Head (E32-CC200 2M), Buzzer(M2BJ-BH24E) Operating Voltage 12 to 24 VAC/VDC, Sensor Conveyor and Training kit Base and Case

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22	<p>OMRON PLC 40 10 CP1L Training Kit MPL-CP1L-M40 Memory Capacity: 10K Sters High-speed counters: 100kHz, 4-axes Relay Output, AC Power Supply Model No. CP1L-M40DR-D Country of Origin: Omron/ Thailand</p>
23	<p>Servomechanism for Permanent Magnets DC Motor Mod. MPD1/EV" "SERVOMECHANISM FOR PERMANENT MAGNETS DC MOTOR ,mod. MPD1/EV The system mod.MPD1/EV mainly consists of:</p> <ul style="list-style-type: none"> • A 4-quadrant industrial bidirectional servomechanism for permanent magnet DC motor; • An external unit consisting of a permanent magnet DC motor. <p>Required Software and Notebook PC should be included.</p> <p>TECHNICAL SPECIFICATIONS:</p> <ul style="list-style-type: none"> • EDUBOX mounting structure; • Silk-screen printed diagram with the different circuit blocks of the system; • Measurement test-points; • 2 bar-graph indicators for speed and current; • External control

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SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
1	2
24	<p>Inverter for three-phase Asynchronous Motor Mod. TID1/EV"</p> <p>The system mod. TID1/EV mainly consists of:</p> <ul style="list-style-type: none">• A V/Hz industrial inverter for three-phase asynchronous motor;• An external unit consisting of a three-phase asynchronous motor <p>Required Software and Notebook PC should be included.</p> <p>TECHNICAL SPECIFICATIONS:</p> <ul style="list-style-type: none">• EDUBOX mounting structure;• Silk screen printed diagram with the different circuit blocks of the system;• Measurement test-points;• 2 bar-graph indicators for speed and current;• External control panel with switches and rotary potentiometer;

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SR No	DESCRIPTION OF EQUIPMENT (TECHNICAL DETAILS)
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25	<p>Servomechanism for Brushless Motor Mod. BMD1/EV"</p> <p>The system mod. BMD1/EV essentially consists of:</p> <ul style="list-style-type: none"> • An industrial bidirectional drive for AC brushless motor; • An external unit consisting of an AC brushless motor. <p>Required Software and Notebook PC should be included.</p> <p>TECHNICAL SPECIFICATIONS:</p> <ul style="list-style-type: none"> • EDUBOX mounting structure • Silk screen printed diagram with the different circuit blocks of the system • Measurement test-points • 2 Bar-graph indicators for speed and current • External control panel with switches and rotary potentiometer • Non-destructive fault simulator: possibility of insertion of 8 faults at max with the same number of switches.
26	<p>Connecting Rod HV 9108</p> <p>Length:665 mm,Weight: 1 kg, Conductive connection element.</p>
27	<p>Connecting Cup HV 9109</p> <p>Dimension: Ø 150 x h 85 mm,Weight: 2.2 kg,Conductive Element:</p> <p>Four elements can be inserted in horizontal position and two in vertical position.</p>
28	<p>Floor Pedestal HV 9110</p> <p>Dimension: 200 x 200 x 80 mm,Weigh-2.2.kg,Conductive Element: For mounting up to four spacer bars horizontally and support-ing one component vertically</p>

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1	2
29	<p>HV Rectifier HV 9111 ,Inverse Peak voltage: 140 kV Rated current: 20 mA Protective Resistor: 100 k Ω Length/ Height: 665 mm Weight: 8 kg, Rectifier for use in impulse voltage and DC voltage generation.</p>
30	<p>Impulse Capacitor 25nF HV 9112,DC and Impulse voltages: 140 kV Capacitance: 50nF Length/Height: 665 mm Weight: 42 kg,mpulse capacitor for genera-tion of impulse voltages. It can also be used as smoothing capacitor in DC voltage gen-eration</p>
31	<p>Measuring Resistor HV 9113 DC voltage: 140 kV Resistance: 280 M Ω Rated continuous current: 0.5 mA Length/ Height: 665 ,Weight:5 kg,High voltage series resistor for measurement of DC voltages.</p>
32	<p>Earthing Switch HV 9114 Impulse voltage: 140 kV DC voltage: 140 kV Service voltage: 24 V, 50/60 Hz Dimensions: 230 x 115 x 160 mm (excl. earthing rod) Weight: 8 k, For automatic safety earthing of the high voltage construction kit when de-energized</p>
33	<p>Spacer Tube HV 9119 Technical data Length: 665 mm Weight: 1 kg, Mechanical and electrical connection on ground level when inserted into floor pedestal.</p>

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34	<p>Load Capacitor HV 9120</p> <p>DC and Impulse voltages: 140 kV Capacitance: 1.2 nF Length/Height: 665 mm Weight: 9 kg, Load capacitor and high voltage divider capacitor for measurement of impulse voltages.</p>
35	<p>Charging Resistor HV 9121</p> <p>Impulse voltage: 140 kV Resistance: 10 M Ω Length/ Height: 665 mm Weight: 5 kg, Charging resistor for multistage impulse voltage test equipment and current limiting resistor in DC voltage generation</p>
36	<p>Wave Front Resistor HV 9122</p> <p>Impulse voltage: 140 kV Resistance: 350 Ω Length/ Height: 665 mm Weight: 5 kg, For generation of impulse voltages. The resistors determine the rise time of the impulse voltage in lightning and switching impulse voltage generation.</p>
37	<p>Wave Tail Resistor HV 9123</p> <p>Impulse voltage: 140 kV Resistance: 2400 Ω Length/ Height: 665 mm Weight: 5 kg, For generation of impulse voltages. The resistors determine the time to half value of the impulse voltage in lightning and switching impulse voltage generation.</p>
38	<p>Insulating Rod HV 9124</p> <p>AC voltage: 100 kV DC and impulse voltage: 140 kV Length/ Height: 665 mm Weight: 1.5 kg, Insulating component</p>

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39	<p>Sphere Gap HV 9125</p> <p>Impulse voltage: 140 kV Sphere Diameter: 100 mm Max. gap settings: 80 mm With gap settings indicator Length/ Height: 665 mm Weight: 7 kg, For impulse voltage generation, for pre-settings of Impulse volt-age peak</p>
40	<p>Drive for Sphere Gap HV 9126</p> <p>Input: 220 kV Frequency: 50/60 Hz Dimensions: 200x125x140 mm Weight: 5 kg, Remote control of Shere Gap size. Mounted underneath the Sphere Gap and connected by drive shaft.</p>
41	<p>Low Voltage Divider HV 9130</p> <p>Measuring Range 150 kV Optional 450 kV 300 kV 75 kV/37.5 kV Weight: 0.4 kg, ncorporates the Low Voltage Capacitors and the 50 ohm cable adapter. It is plugged in to the UHF socket of the load capacitor and connects the Impulse Voltage Meter by means of co-axial cable</p>
42	<p>Electronic Trigger Sphere HV 9132</p> <p>Supply voltage: 220 V 50 Hz Measuring Range: $100-1000 \hat{U} / \sqrt{2}$ kV Dimensions: 142x 173 x 245 (W x H x D) Weight: 1 kg, For controlled stimulation of breakdown conditions. To be used with the impulse equipment</p>

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43	<p>Measuring Sphere Gap HV 9133, AC Voltage: 100 kV (rms) DC Impulse Voltages: 140 kV Power supply: 220–240 V, 50 Hz Height approx 800 mm Weight 18 kg, Sphere Gap is a standard measuring device for flash over voltage using various electrode arrangements. It consists of supporting arrangements like remote and hand operated gear, for easy gap setting</p>
44	<p>Top Electrode HV 9138 Diameter: 300 mm Weight: 1 kg, Serves as termination in conjunction with grounding switch for safety grounding. Also serves as corona free electrode</p>
45	Tachnometer
46	Digital Manometer
47	Diffraction Grating
48	<p>Electrical Measurement Modules Set of modules for the study of electrical measurements De Lorenzo DL 2109T Modules Configuration : DL 2109T De Lorenzo (Italy) DL 1017R Resistive Load , Inductive Load DL 1017C Capacitive Load , Transformer Phase sequence indicator , Bridge Rectifier Potentiometer , DL 2109T06 Double change-over switch Moving coil microammeter , Moving coil milliammeter Moving coil ammeter , Moving coil voltmeter Moving coil voltmeter , Single-phase wattmeter Single-phase PF meter , Three-phase phasemeter</p>

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1	2
49	<p>Study Of Speed Control Of AC Motors (0.3 kW) De Lorenzo DL MAC-CCA_E De Lorenzo</p> <p>Configurations :</p> <p>DL 55070 Inverter for three-phase induction motors DL 30115 Squirrel cage three-phase asynchronous motor DL 1013A Universal base for electrical machines DL 30300 Electromagnetic brake DL 1054 Power supply unit DL 1155A-SC Connecting leads with safety terminals</p>
50	<p>EP Department Bench for Study of Single-Phase and Three-Phase Transformers (1.1kW)</p> <p>Configurations :</p> <p>Single-Phase Transformer Three-Phase Transformer , Super-Fast Fuses Power Supply Module , Maximum Demand Meter Digital AC/DC Multirange Power meter Resistive Load , Inductive Load , Capacitive Load</p>

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51	<p>Set of modules for the study of electrical measurements</p> <p>Power Supply, Resistive Load, Inductive Load, Capacitive Load, Transformer, Phase sequence indicator, Bridge Rectifier, Potentiometer, Doublechange-over switch, Moving coil microammeter, Moving coil milliammeter, Moving coil ammeter, Moving coil voltmeter 1, Moving coil voltmeter 2, Single-phase wattmeter, Single-phase PF meter, Three-phase phasemeter, Connecting Lead</p>
52	<p>DIODES AND UNCONTROLLED RECTIFIERS</p> <p>ALTERNATE CURRENT - DIRECT CURRENT CONVERSION</p> <p>Configurations :</p> <p>SELENIUM RECTIFIER</p> <p>SILICON DIODE</p> <p>GROUP OF DIODES</p> <p>MAINS TRANSFORMER</p> <p>SUPER-FAST FUSES 2</p> <p>LOAD , SUPPORT WITH 3 SHUNTS 1 OHM</p> <p>TRUE RMS METER</p> <p>MOVING IRON VOLTMETER</p> <p>FRAME , CONNECTING LEADS</p>

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53	CHOPPERS SILICON DIODE, MOSFET, IGBT, BRIDGE THREE PHASE RECTIFIER, SCR WITH TURN OFF CIRCUIT, DC POWER SUPPLY, VOLTAGE REFERENCE GENERATOR, PWM/PFM/TPC CONTROL UNIT, MAINS TRANSFORMER, CAPACITORS, SUPER FAST FUSES, CURRENT TRANSFORMER, LOAD, SUPPORT WITH 3 SHUNTS 1 OHM, TACHOMETER, TRUE RMS METERS, SHUNT EXCITATION DC MOTOR, BASE, FRAMES, WORKING BENCH, CONNECTING LEADS, STORAGE, CABINET, THREE PHASE TRANSFORMER
54	Omron PLC CPU 40IO CP1L Training Kit Memory Capacity: 10K steps High-speed counters: 100kHz, 4-axes Relay Output, AC Power Supply Model No. CP1L-M40DR-D Country of Origin: Omron/Thailand

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1	2
55	<p>Electrical transmission and distribution training</p> <p>- Hera</p> <p>(1) Transformer Station Panel</p> <p>Electricity connection between Transformer Station and House (TN-System, TTSystem), variants of TN-System (TN-C System, TN-S-System, TN-C-S-System)</p> <p>(2) Mains Distribution Panel (House Connection)</p> <p>Networks Systems with direct earthing (TN-System, TTSystem)</p> <p>Manual English: Domestic Power Distribution</p> <p>>> Manual (54 pages) with tests for students and solution for instructors in accordance with the Mains Distribution Panel and Transformer Station Panel</p> <p>>> incl. printed manual and pdf-CD.</p> <p>Connecting Set for Mains Distribution Panel</p> <p>(3) Transformer Panel (Fundamentals of Transformers)</p>
	<p>(4) Connection Set for Transformer Panel</p> <p>Manual English: Basics to Transformers</p> <p>>> Manual with basics and tests in accordance with the Transformer Test Panel</p> <p>>> Manual (100 pages) with CD</p> <p>(5) Supply Panel AC 0-30V/1A</p> <p>>> Isolated voltage AC 0...30V/ 1A.</p> <p>>> Front side operated thermomagnetic fuse.</p> <p>>> Output at 4mm safety jacks.</p>

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1	2
56	<p>De Lorenzo Brushless DC Trainer</p> <p>- PLC Allen Bradley DL 2131-AB De Lorenzo The trainer is composed of PLC, HMI, BLDC system. PLC:I/O: 14 Digital inputs(8 High-Speed and 6 Standard), 10 digital output(2 High speed-PTO and 8 standard), 4 analogueinput, 2 analogueoutput, TCP/IP & Modbus RTU communication HMI:TFT LCD, 4.3", 480x272, Touch screen: 4.3 inch, CPU and core logic: 32Bit RISC Cortex-8A 600MHz BLDC system:Including twodrivers and two BLDC motors</p>
57	<p>Electrical installation (Basic)</p> <p>- Hera</p> <p>(1)Basic Installation Panel</p> <p>(2)Manual English: Basic Installation</p> <p>>> Manual with tests in accordance with the hera Basic Installation Panel the set of component panels or set of transparent didact boxes</p> <p>>> Manual with CD (pdf-file) (3)Connection Set for Basic Installation Panel</p>

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58	<p>Electrical installation (Domestic Wiring)</p> <p>- Hera</p> <p>(1) Safeguard Panel</p> <p>Training system for practical tests in the field of electrical protective measures.</p> <p>(2) Set of Cables for Safeguard Panel</p> <p>(3) Manual English: Safeguard Panel</p> <p>>> Manual with tests in accordance with the hera Installation Test Panel</p> <p>>> Manual with CD (pdf-file)</p>
59	<p>Study of Speed Control of AC Motors (1.1 kW)</p> <p>De Lorenzo DL MAC-CCA_U</p> <p>Configurations :</p> <p>DL 55070 Inverter for three-phase induction motors</p> <p>DL 1021 Squirrel cage three-phase asynchronous motor</p> <p>DL 1013A Universal base for electrical machines</p> <p>DL 1019M Electromagnetic brake</p> <p>DL 1054 Power supply unit</p> <p>DL 1155A-SC Connecting leads with safety terminals</p>

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60	<p>NSS Omron HMI Training with Omron PLC 40 IO CP1L Training Kit (MPL-NSS-SO)</p> <p>Details Product Parts:</p> <ol style="list-style-type: none"> 1. Programmable Terminal 2. Touch Screen NSS series. 3. A screen size 5.6 inches display 4. Power supply voltage output 240VDC 5. Switch ON/OFF 220VAC 6. operation manual. 7. USB connecting PC with PT. 8. RS 232 C cable connecting PLC with PT 9. Kit Base and Case 10. PLC with CPU CP1L 40 I/O 11. RS 232 C Cable 9-PIN 2M (PLC-PC) (XW2Z-200T) 12. Text book
61	<p>LOGO! 8 12/24V ETHERNET-0BA8 with digital modules DM8 12/24R(6ED1057-3SA20-0YA1) (DC 24V Power Supply) Item includes</p> <ol style="list-style-type: none"> 1. 6x LOGO! 12/24 RCE (6ED1052-1MD08-0BA0)(DC 24V) 2. 6x LOGO! DM8 12/24R expansion module (6ED1055-1MB00-0BA2)(DC 24V) 3. 6x LOGO! Soft Comfort V8, programming software (6ED1058-0BA08-0YA1)
62	<p>LOGO! AM2 RTD Expansion Module(Analog)</p> <p>PS: 12/24 V DC, 2AI-50...+200°/C Pt10 6ED1055-1MD00-0BA2</p>

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63	SIMATIC HMI, KTP400 Basic, Basic Panel Key/touch operation, 4" TFT display, 65536 colors, PROFINET interface 6AV2123-2DB03-0AX0
64	SIMATIC (S7-1200, CPU 1214 C, compact CPU, AC/DC/ relay, onboard I/O: 14 DI 24 V DC; 10 DO relay 2A; 2 AI 0-10 V (6ES7214-1BG40-0XB0) (AC 85-264 V AC at 47-63 Hz Power Supply)
65	SIMATIC S7-1200 Digital I/O SM 1223, 16 DI/16 DO, 16 DI 24 V DC, Sink/Source, 16 DO, relay 2 A (6ES7223-1PL32-0XB0)
66	SIMATIC S7-1200 Analog input, SM 1238 Energy Meter 480 V AC, power measurement module for data acquisition in 1- and 3-phase supply systems (TN, TT) up to 480 V AC; Current range: 1 A, 5A; acquisition of voltage, current, phase angles, power, energy values, frequencies; Channel diagnostics (6ES7238-5XA32-0XB0)
67	UNI-T UT 371 Tachometer
68	UNI-T LM 80 Distance Meter
69	Phase Indicator/ Dector UNI-T UT 261 A
70	Electrical Protection Trainer GOTT-EPT-146 GOTT

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1	2
71	Protection Relay Experiment Trainer GOTT-PRE -11 GOTT