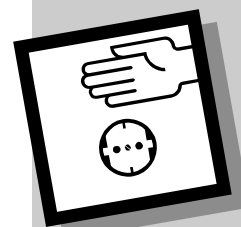
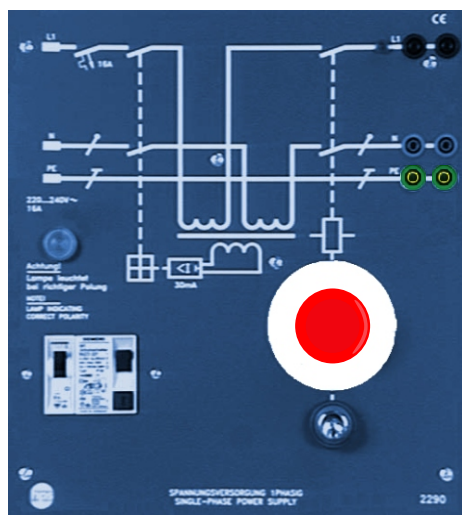


Installation Technology



Demonstration Boards

Series 2200



**Single-phase
Power Supply**
Type 2290



**Dimmer
400 W**
Type 2203



**Bulb
Holder E 27**
Type 2214

- Didactically sophisticated training system
- Designed for basic and further training in installation technology
- Consisting of Demonstration Boards with graphic circuit illustrations on the front
- Detailed experiment instructions with circuit and installation diagrams

The training system is accompanied by the experiment manual „Installation Technology“ (Type V 0081), which contains numerous experiments with circuit and installation diagrams.

Technical Data

With this training system, hps SystemTechnik offers a comprehensive program for conducting experiments in installation technology.

The training system consists mainly of Demonstration Boards such as:

- Single-Pole Switch
- Dimmer
- Socket
- Pushbutton
- Sodium Vapour Lamp
- Filament Transformer and Basic Load
- Bulb Holder E 27
- Fluorescent Lamp Holder
- Choke / Starter
- Bell Transformer
- Buzzer
- AC Meter
- Active Power Meter
- Frequency Meter
- Electronic Phase-Angle Meter
- Power Supply (Single-phase)

The standard illustration of the respective circuit on the Demonstration Boards enables optimum signal tracing.

The circuit is assembled with safety leads and safety connecting plugs through 4 mm jacks inset in the front of the board.

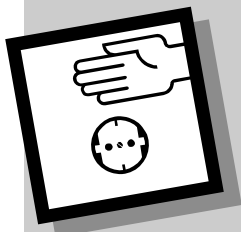
The rear of the Demonstration Boards is protected with a grey plastic cover.

To conduct the experiments, the Boards are placed on a table or suspended in an hps rack for demonstration purposes.

- Dimensions of the Demonstration Boards:
95 x 297 mm (w x h)
266 x 297 mm (w x h)
The depths differ, see the following pages.

- The front panel of the Demonstration Boards is made of 5 mm thick laminate, matt blue in colour with white printing representing the built-in function groups.

The following pages contain further technical data and illustrations of the Demonstration Boards.

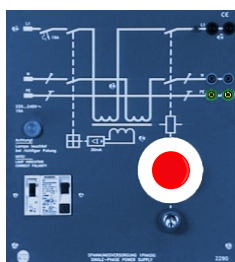


Demonstration Boards

Series 2200

Installation Technology

Demonstration Boards for Installation Technology



Type 2290

Single-Phase Power Supply

Type 2290

220 ... 240 V AC / 16A; with FI circuit breaker; $I_{FN} = 30 \text{ mA}$; fuse 16 A; contactor control through key-operated switch and emergency push button; dimensions: 266 x 297 x 165 mm (w x h x d); weight: 2.1 kg



Type 2297

Current Relay

Type 2297

Adjustment range: 0.1 ... 1A; 1 change-over contact: 250 V AC / 3 A; auxiliary voltage: 220 ... 240 V AC, 50 Hz; dimensions: 95 x 297 x 125 mm (w x h x d); weight: 0.95 kg



Type 2200

Single-Pole Switch

Type 2200

250 V AC / 10 A; dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.45 kg



Type 2201

Two-Pole Switch

Type 2201

250 V AC / 10 A; dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.45 kg



Type 2202

Multi-Circuit Switch

Type 2202

250 V AC / 10 A; dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.45 kg



Type 2203

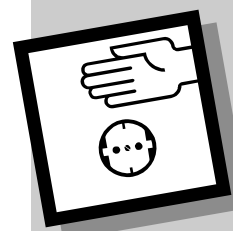
Dimmer (400 W)

Type 2203

220 ... 240 V AC; for continuous adjustment of ohmic loads; dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.5 kg

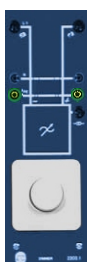
Installation Technology

Demonstration Boards for Installation Technology



Demonstration Boards

Series 2200



Type 2203.1



Type 2204

Dimmer (600 VA)

220 ... 240 V AC; for continuous adjustment of fluorescent lamps;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.51 kg

Type 2203.1

Two-Way Switch

250 V AC / 10 A;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.45 kg

Type 2204



Type 2205



Type 2206

Intermediate Switch

250 V AC / 10 A;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.45 kg

Type 2205

Socket

250 V AC / 16 A;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.41 kg

Type 2206



Type 2207



Type 2207.2

Pushbutton (with pilot lamp)

250 V AC / 10 A; glow lamp: 220 ... 240 V;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.4 kg

Type 2207

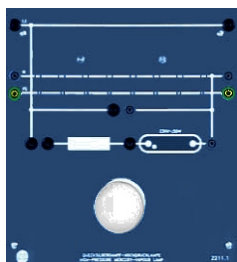
Pushbutton (with door opener symbol)

250 V AC / 10 A;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.4 kg

Type 2207.2



Type 2208



Type 2211.1

Connector Box

With 4 distributor points;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.35 kg

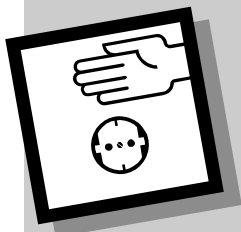
Type 2208

High-Pressure Mercury Vapour Lamp

220 ... 240 V AC; max. 50 W; with ballast;
dimensions: 266 x 297 x 125 mm (w x h x d); weight: 2.6 kg

Type 2211.1



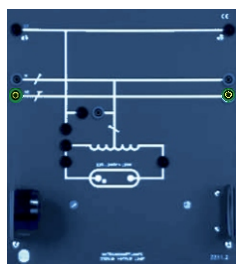


Demonstration Boards

Series 2200

Installation Technology

Demonstration Boards for Installation Technology



Type 2211.2



Type 2212

Sodium Vapour Lamp

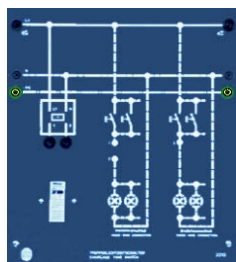
220 ... 240 V AC; max. 35 W; with ballast;
dimensions: 266 x 297 x 125 mm (w x h x d); weight: 4.6 kg

Type 2211.2

Remote Control Switch

Actuation voltage: 220 ... 240 V AC, 50 ... 60 Hz;
contacts: 2 NO; output voltage: 250 V AC / 16 A;
dimensions: 95 x 297 x 125 mm (w x h x d); weight: 0.86 kg

Type 2212



Type 2213



Type 2214

Staircase Time Switch

220 ... 240 V; for 3- and 4-wire circuits; adjustable from 1 ... 6 minutes;
dimensions: 266 x 297 x 80 mm (w x h x d); weight: 1.15 kg

Type 2213

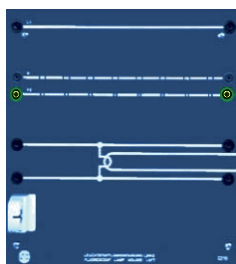
Bulb Holder E 27

With filament lamp: 220 ... 240 V AC; 60 W;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.4kg

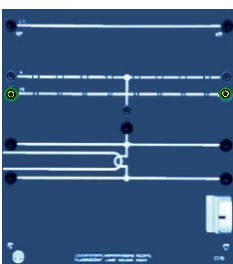
Type 2214

Blended Lamp (HWLS) (not illustrated)
E 27; 160 W; 230 V AC

Type 2214.1



Type 2215



Type 2216

Fluorescent Lamp Holder Left

dimensions: 266 x 297 x 115 mm (w x h x d); weight: 0.95 kg

Type 2215

Fluorescent Lamp Holder Right

dimensions: 266 x 297 x 115 mm (w x h x d); weight: 0.95 kg

Type 2216

Fluorescent Lamp 18W (not illustrated)

Universal white; length: 0.6 m

Type 2215.1

Fluorescent Lamp 36 W (not illustrated)

Universal white; length: 1.2 m

Type 2215.3



Type 2217



Type 2217.1

Choke / Starter (20 W)

dimensions: 95 x 297 x 125 mm (w x h x d); weight: 1.1 kg

Type 2217

Choke / Starter (40 W)

dimensions: 95 x 297 x 150 mm (w x h x d); weight: 1.1 kg

Type 2217.1

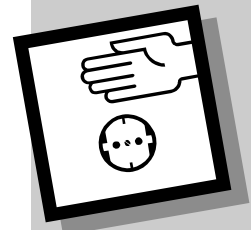


SystemTechnik

Competence in Training

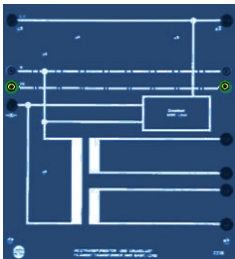
Installation Technology

Demonstration Boards for Installation Technology

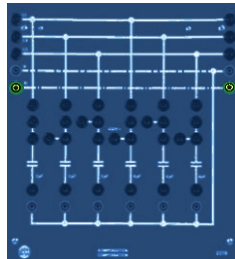


Demonstration Boards

Series 2200



Type 2218



Type 2219

Filament Transformer and Basic Load

20 ... 65 W;
dimensions: 266 x 297 x 80 mm (w x h x d); weight: 1.5 kg

Type 2218

Compensation

3 x 2 μ F; 3 x 4 μ F; 400 V AC; discharge resistors 1.8 M Ω , each;
dimensions: 266 x 297 x 80 mm (w x h x d); weight: 1.55 kg

Type 2219



Type 2220



Type 2221

Bell Transformer

Primary: 220 ... 240 V AC, 50 ... 60 Hz; secondary: 4 / 6 / 8 V; 1 A;
Dimensions: 95 x 297 x 125 mm (w x h x d); weight: 0.35 kg

Type 2220

Buzzer

5 ... 8 V AC;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.4 kg

Type 2221



Type 2222



Type 2223

Door Opener

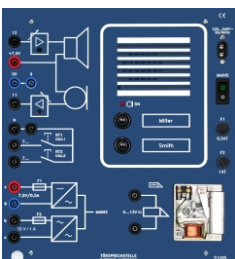
5 ... 8 V DC; 5 ... 12 V AC;
dimensions: 95 x 297 x 125 mm (w x h x d); weight: 0.75 kg

Type 2222

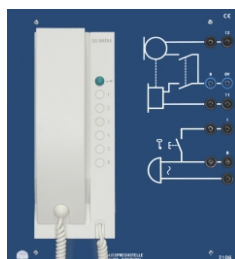
Bell Pushbutton

Triple;
dimensions: 95 x 297 x 45 mm (w x h x d); weight: 0.35 kg

Type 2223



Type 2105



Type 2106

Outside Intercom

- Built-in microphone, loudspeaker, and adjustable amplifiers
- Door opener, with transparent cover
- 2 bell pushbuttons
- DC power supply for house intercom, voltage and current: 7.5 V DC / 0.5 A
- AC power supply for bell and door opener, voltage and current: 12 V AC / 1 A
- Mains connection: 220 ... 240 V AC, 50 ... 60 Hz, 20 VA

dimensions: 266 x 297 x 100 mm (w x h x d); weight: 2.1 kg

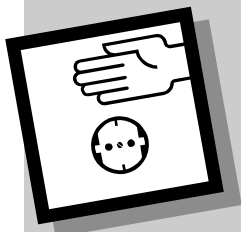
Type 2105

Inside Intercom

- Unhookable handset with integrated receiver and microphone
- Bell
- Pushbutton for door opener

dimensions: 266 x 297 x 150 mm (w x h x d) weight: 1.4 kg

Type 2106

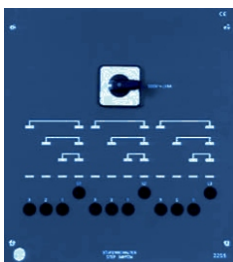


Demonstration Boards

Series 2200

Installation Technology

Demonstration Boards for Installation Technology



Type 2255



Type 2277

Step Switch

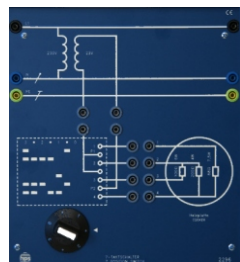
Type 2255

Three-pole; 500 V AC / 16 A; with overlapping switching;
switch sequence: 0 - 1 - 2 - 3;
dimensions: 266 x 297 x 125 mm (w x h x d); weight: 1.3 kg

Current Transformer

Type 2277

To reduce current in a measuring circuit (2.5 A and 5 A to 1 A);
protection class 1; S = 5 VA; n < 5; transformation ratio: 5:1 and 2.5:1;
dimensions: 95 x 297 x 125 mm (w x h x d); weight: 1.15 kg



Type 2296

7-Position Switch

Type 2296

with heater simulation and transformer 230 V to 23 V
dimensions: 266 x 297 x 125 mm (w x h x d); weight: 1.7 kg

Demonstration Meters and Power Supplies for Installation Technology



Type 2280

Frequency Meter

Type 2280

46 ... 54 Hz; 230 V AC;
dimensions of the measuring instrument: 144 x 144 mm;
dimensions: 266 x 297 x 80 mm (w x h x d); weight: 1.5 kg



Type 2281

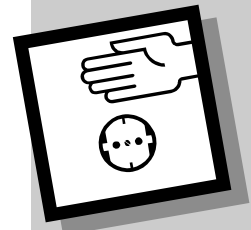
AC Meter

Type 2281

220 ... 240 V AC, 50 Hz; 10 A rated current; 40 A limit current;
meter constant = 600 revol. / kWh;
dimensions: 266 x 297 x 200 mm (w x h x d); weight: 2.1 kg

Installation Technology

Demonstration Boards for Installation Technology



Demonstration Boards

Series 2200



Type 1070

Electronic Multimeter

Type 1070

Measuring ranges:

- Voltage (DC / AC): 0,2 / 2,0 / 20 / 200 / 600 V
Input impedance: 10 MOhm,
Input capacitance: < 100 pF
Frequency range: 40 ... 400 Hz
- Current (DC / AC): 0,2 mA / 2 mA / 20 mA / 200 mA / 10 A
Frequency range: 40 ... 400 Hz
- Resistance: 200 Ohm / 2 k / 20 k / 200 k / 2 M / 20 MOhm
- Continuity tester with acoustic sound
- Voltage test for batteries
- Diode test

Miscellaneous

- Voltage and current input via 4-mm-safety jacks

Mains connection:

- 230 V AC / 115 V AC (110 V AC); 50 ... 60 Hz; 15 VA
dimensions: 266 x 297 x 90 mm (w x h x d); weight: 3,2 kg



Type 1079 USB

AC Multifunction Tester

Type 1079 USB

Measuring ranges:

- Voltage: 5 V ... 250 V (ms)
- Current: 0.1 A ... 10 A
- Frequency: 45 Hz ... 65 Hz
- Phase angle: 0° ... 90° lagging (leading indicated with LED display);
Phase angle between U_1 / I or U_1 / U_2

Mains connection: 100 V ... 240 V AC (110 V AC); 50 ... 60 Hz; 10 VA
dimensions: 266 x 297 x 150 mm (w x h x d); weight: 2.7 kg



Type 1091 USB

Universal Power Meter

Type 1091 USB

Measuring ranges:

- Voltage / Current: 0 ... 250 V (rms) / 0,1 ... 10 A
- Power factor (cos phi): 0 ... 1 lagging / leading indicated with LED display
- Active power, Apparent power, Reactive power, Frequency
- USB-interface

Mains connection: 100 V ... 240 V (110 V AC); 50 ... 60 Hz; 15 VA
dimensions: 266 x 297 x 150 mm (w x h x d); weight: 2.6 kg

Accessories Recommended

- Storage Cabinet (Type 8132)
- Set of Safety Connecting Leads (Type 9102.10), 40pcs.
- Safety Connecting Plug (Type 9101.4), 4 mm / 19 mm
- Experiment manual: „Installation Technology“ (Type V 0081)