DP1000G series is a graphic program controller employed high visibility 5.6” TFT color LCD display. Maximum 200 types of program pattern (Maximum 4000 steps) are stored and performance pattern is selectable. Control cycle of 0.1 sec, 5 digits display, high speed and high accuracy of ±0.1% indicating accuracy are realized.

### FEATURES

- **Employing clear 5.6” TFT color LCD display**
  Graphic screen of pattern progress status, display of PV value/SV value/pattern/step/time and various monitor functions such as program progress enlarged display, enlarged data display and bargraph display are prepared.

- **Easy program pattern settings on graphic screen**
  Maximum 200 patterns/Maximum 4000 steps settings, pattern repeat, linking between patterns and endless program setting are available.

- **Parameter settings per step**
  Each parameter setting such as SV/PV start, guarantee soak and time signal is available per step.

- **High performance and universal input**
  Input selection from each range of thermocouple, DC voltage/current and resistance thermometer are available and unit has performance of 5 digit display, accuracy rating of ±0.1% and sampling period of 0.1sec.

- **Storing settings in CF card**
  Setting management is easy as all settings including setting program pattern and each parameter are stored in CF card and readout from it. PC software allows you to edit program pattern and parameter.

- **Various control application functions**
  Heating/cooling output is applicable as control output has ON-OFF pulse type, current output type, SSR drive pulse type and voltage output type.

- **Abundant external input/output**
  Unit with external input 16 points and external output 28 points enables function assignment. Synchronized operation with peripherals are easy. Serial communications interface and transmission signal output are also prepared.

- **Interchangeable with DP series**
  DP series are easily replaced with DP1000G which inherited characteristics of DP series such as function, operability and terminal arrangement/configuration.

### MODELS

- **Control mode (output No.1)**
  1: ON-OFF pulse PID
  2: ON-OFF servo PID (standard load spec)
  3: Current output PID (general type 4 to 20mA DC)
  5: SSR drive pulse PID
  6: Voltage output PID (general type 0 to 10V DC)
  8: ON-OFF servo PID (minimal load spec)
  A: Current output PID (high accuracy type 4 to 20mA DC)
  B: Current output PID (high accuracy type 1 to 5mA DC)
  C: Voltage output PID (high accuracy type 0 to 10V DC)

- **Control mode (output No.2)**
  0: None
  1: ON-OFF pulse PID*1
  3: Current output PID (general type 4 to 20mA DC) *1
  5: SSR drive pulse PID*1
  6: Voltage output PID (general type 0 to 10V DC)*1
  A: Current output PID (high accuracy type 4 to 20mA DC)*1
  B: Current output PID (high accuracy type 1 to 5mA DC)*1
  C: Voltage output PID (high accuracy type 0 to 10V DC)*1

- **Communications interface**
  0: None
  R: RS232C (COM1)*1
  S: RS485 (COM1)*1
  A: RS422A (COM1)*1
  B: RS232C (COM1) + RS232C (COM2)*1
  C: RS485 (COM1) + RS232C (COM2)*1
  D: RS422A (COM1) + RS232C (COM2)*1
  E: RS232C (COM1) + RS485 (COM2)*1
  F: RS485 (COM1) + RS485 (COM2)*1
  G: RS422A (COM1) + RS485 (COM2)*1

- **Transmission signal output 1**
  0: None
  1: 4 to 20mA*1
  2: 0 to 1V*1
  3: 0 to 10V*1
  4: 1 to 5V*1

- **Transmission signal output 2**
  0: None*1
  1: 4 to 20mA*1
  2: 0 to 1V*1
  3: 0 to 10V*1

- **Case color**
  G: Gray
  B: Black

- **External input/ output signal**
  0: None*1
  1: Digital input/ output (non voltage contact input)
  2: Digital input/ output (Digital power supply only input)*1

- **Transmitter power supply**
  0: None
  1: Transmitter power supply*1

*1 Selectable when control mode (output1) is 1,3,5,6,A,B,C.
*2 COM1 is exclusive use for rear port, COM2 is rear port and front port switchable.

OP: Option
# OPERATION SCREEN

- **Running status display at once**
  Running status display of pattern progress and PV/ SV/ MV/ variation.

- **Trend screen**
  Enlarged trend display of PV and SV

- **Enlarged data screen**
  Enlarged display of PV/SV

- **Bargraph screen**
  Bargraph display of PV/ SV/ MV

- **Pattern setting screen**

- **Step parameter setting screen**

---

## KEY ARRANGEMENT

- A/M
- RUN
- RESET
- DISP
- ESC
- FNC
- STOP
- ADV
- MENU
- ENT

- Direction key
**INPUT SPECIFICATIONS**

- **Input types:** DC voltage --- ±10mV, ±20mV, ±50mV, ±100mV, ±5V, ±10V
- DC current --- 20mA
- Resistance thermometer --- P100, JP100, old P100, P50, PI-C, 3 wire and 4 wire

- **Accuracy rating:** Refer to the table of measuring range and accuracy ratings
- **Reference junction compensation accuracy:** K, E, T, N, Platinel II --- ±0.5°C or less
- **Sensor correction:** Selectable by 0.1 time resolution of the target resolution
- **Sampling period:** Approx 0.1 sec
- **Burnout:** Burnout available for thermocouple, DC voltage (±50mV or less) and resistance thermometer
- **Output value at burnout:** Settable to any value
- **Range setting:** The useable range is settable within the measuring range (only for linear range)
- **Scaling:** DC voltage/current input
- **Number of set points:** 4 points + 4 points (for extended assignment setting)
- **User linearize table:** Useable for DC voltage/ current input (19 break points)
- **Digital filter:** 0 to ~9.9 sec
- **Allowable signal source:**
  - Thermocouple input/ DC voltage input (mv) --- 100 or less
  - DC voltage input (±25V, ±10V) --- 3000 or less
  - Resistance thermometer (3 wire) --- 2 or less per wire
  - Resistance thermometer (4 wire) --- 100 or less per wire

- **Input resistance:**
  - Thermocouple/DC voltage input --- 1M or more
  - DC current input --- Approx 100Ω

- **Measuring current:** Resistance thermometer input --- Approx 1mA
- **Maximum allowable input:** Thermocouple/DC voltage input --- ±20V DC

- **Operation function:** Square roots calculation, Log operation

**PROGRAMMING SPECIFICATIONS**

- **Pattern set type:** Target temp (SV)/Time or Ramp rate/Time
- **Number of steps:** Up to 199 steps per pattern
- **Number of patterns:** Up to 200 patterns
- **Total number of steps:** Up to 4000 steps
- **Repeat:** Pattern --- Up to 9999 times, Step --- up to 99 times
- **Step setup range:** Target value --- Input scale range
- **Rate:** 0 to 99.999 hours 59 minutes or 0 to 99 minutes 59 seconds

- **Start temperature:** Select either PV start or arbitrary set value start

- **Target value (SV) correction:**
  - -99999 to 99999, decimal point linked with scaling

- **Fast-forward:** Program fast-forward function provided
- **End output:**
  - Select either constant value control or fixed output (setting) --- 5 to 105%

- **Parameter registration:** Each parameter is selectable per step
- **Sequence programming:**
  - PID constant --- 8 values, or 8 automatic selection types
  - Constant: 8 types
  - PID constant: 8 types, or 8 automatic selection types
  - SV interval: Including dead band, ARW upper/lower limits, and output preset
  - Output limit (upper/lower) output limit variation (upper/lower) 8 types for each, or 8 automatic selection types for SV interval
  - Guarantee soak 8 types
  - Wait time alarm 8 types
  - Alarm 8 types for each (a set of 4 points)
  - Time signal 30 types, all ON, all OFF, reverse phase, repeat in a step
  - Sensor correction/mass flow target value 8 types

- **Parameter setting change:**
  - Changeable during operation
  - Target value, time, ramp rate, PID, ARW, guarantee soak, output limit, output variation limit, alarm, sensor correction, SV correction, mass flow SV

- **Additional function:** Pattern link, circle function, pattern edit

**CONTROL SPECIFICATIONS**

- **Control switching period:** Approx 0.1 (initial value) / 0.2 / 0.3 / 0.5 sec
- **Control type:**
  - ON-OFF pulse type, ON-OFF servo type, current output type, SSR drive pulse type, voltage output type, output at PV error

- **PID value:**
  - Automatic setting by auto tuning or Manual setting
  - P --- 0 to 999.9% (for 2 position operation)
  - I --- 0 to 9999 sec (for 0 to 1 operation)
  - D --- 0 to 9999 sec

- **Auto tuning:**
  - AT1 --- Set by the target value during operation
  - AT2 --- Preset the step interval coaxial 8 types
  - AT3 --- Preset 8 automatic selection types for SV interval

- **On-off pulse type:** Output signal --- On-off pulse conductive signal (relay contact)
- **Contact capacity:** Resistance load 100 to 240V AC 30VDC, 2.5A or less
- **Inductive load 100 to 240V AC 30VDC, 5A or less
- **Minimum load 5 VDC, 10mA or more

- **On-off servo type:** Output signal --- Output servo conductive signal (relay contact)
- **Contact capacity:** Standard load spec
- **Resistance load --- 100 to 240V AC 30VDC 5A or less
- **Inductive load --- 100 to 240V AC 30VDC 2.5A or less
- **Minimum load --- 5VDC, 1mA or more

- **Thermocouple input/ DC voltage (mV) --- 300mV or less
- **Resistance thermometer (3 wire) --- 5mination 5 or less per wire
- **Resistance thermometer (4 wire) --- 100 or less per wire
- **Contact protection --- Compact CR element built-in
- **Current output type:** Output signal --- 4 to 20mA or 1 to 5mA
- **Load resistance --- 75Ω or less
- **Output preset: Output setting in proportional operation when PV=SV
- **Guarantee soak: Deviation setting 0 to 99999, decimal point linked with scaling
- **Output at PV error:** Individual setting of outputs at upper and lower limit errors
- **A.R.W:**
  - Upper 0.0 to 100.0%, Lower --- 0.0 to 5.0%

- **Output limit:**
  - Upper 0.0 to 100.0%
- **Output variation limit:** Up 0.01 to 100.0%
- **Output preset:**
  - Down --- 0.0 to 100.0%
- **Output dead band:**
  - Dead band setting 0.0 to 9.9%
- **Control action:** Direct/ reverse action switching
- **Guarantee soak:** Deviation setting 0 to 99999, decimal point linked with scaling
- **Output at AUTO kept when switching from AUTO to MAN
- **Program actions on repower:**
  - Select to continue or reset the program when recovering the power
- **Control operation:** Position type and speed type selectable
- **2 outputs specification:** Independent PID, Any combination of 6 types from On-off pulse type, current output type, SSR drive type, voltage output type, current output type (high accuracy), voltage output type (high accuracy)

- **Heating and cooling control:** Cooling proportional operation, matching box operation
- **Cascade primary controller:**
  - Output (%) x = control operation value + b + c x set value
  - a: c: 0.00 to 1.00, b: -100.0 to 100.0
- **Output destination - control output 1/2, transmission output 1.2

**ALARM SPECIFICATIONS**

- **Number of set points:** 4 points + 4 points (for extended assignment setting)
- **Judgment method:** Upper alarm or lower alarm (with/without wait) using an absolute value
- **Upper alarm or lower alarm (with/without wait) using an absolute value deviation
- **Upper alarm or lower alarm (with/without wait) using a measured value change rate
- **Upper or lower limit judgment of output value (with/without wait)
- **Upper or lower limit judgment of set value (with/without wait)
- **Output loop error, fail, wait time alarm, end signal
- **Delay or latch function is selectable**
**DP1000G**

- **Setting range:** -99999 to 99999, decimal point linked with scaling
- **Dead band:** 0.1 times of set resolution
- **Delay setting range:** 1 to 10 times
- **Output type:** Relay contact output 4 points (A contact, 1 common)
- **Contact capacity:** Resistance load 100 to 240V 30VDC, 3A or less
- **Inductive load:** 100 to 240V 30VDC, 1.5A or less
- **External output signal assignment:** 4 points (for extended assignment setting)
- **Alarm reset:** Alarm can be cleared during occurrence

### EXTERNAL OUTPUT SIGNAL SPECIFICATION

- **Number of output:** 28 points (function assignment per point)
- **Output type:** Open collector output (24V DC, up to 50mA)
- **Time signal output:** Default assignment --- 18 points
  - Output type --- ALL-ON / ALL-OFF / maximum of 30 types per step
- **Status output:** Default assignment --- 10 points
- **Output type:** RUN STOP, ADV, RESET, WAIT, FAST, END, ALM, WAIT, SVUP, SVDOWN
- **Pattern select input:** Default assignment --- 10 points
- **Select assignment --- Pattern/ step No. - BCD output
- **Output type:** ALL-ON / ALL-OFF, maximum of 30 types

### DISPLAY SPECIFICATION

- **Screen:** 5.6” TFT color LCD
- **Display content:**
  - **Operation screen:**
    - Home screen --- Pattern progress, pattern/step No., numeric data, status, time signal, alarm
    - Enlarged data screen, bargraph screen, trend screen, DIO/DI screen
    - Setting screen --- Pattern/sequence setting, various parameter setting, memory card management setting, maintenance, setting lock, communications, setting change during operation
- **LCD backlight:** 4 brightness adjustment levels

### SETTING AND OPERATION SPECIFICATION

- **Operation key type:**
  - MENU, DISP DIRECTION key, ENT, ESC, FNC, RUN, STOP, ADV, RESET, A/M
- **Setting and operation method:**
  - **Setting:** Menu calling / cursor selection method
  - **Operation --- Direct key operation (combined with FNC)

### MEMORY CARD SPECIFICATION (Card is optional)

- **Memory media:** Compact flash (CF) card
- **Memory size:** Up to 2 GB
- **Saved data:** Setup parameters, program patterns
- **All data (for auto loading):**

### GENERAL SPECIFICATION

- **Rated power voltage:** 100 to 240V AC 50/60Hz (universal power supply)
- **Maximum power consumption:** 45VA

**Reference operation condition:**

- **Ambient temperature humidity range --- 21 to 25°C, 50 to 60%RH (No dew condensation) **
- **Vibration --- 10 to 60Hz 0.5G (4.9ms/s²) or less **
- **Impact --- 400 (362msrots) or less **

**Normal operation condition:**

- **Ambient temperature humidity range ---**
  - -10 to 50°C, 10 to 90%RH
  - Power voltage --- 90 to 264V AC
  - Power frequency --- 50/60Hz ±2%
  - Attitude --- Leftfright ±1°, forward/backward ±1°

**Transportation condition:**

- At the packed condition on shipment from our factory
  - **Ambient temperature humidity range ---**
    - -20 to 60°C, 5 to 90%RH (No dew condensation)
  - **Vibration --- 10 to 60Hz 0.5G (4.9ms/s²) or less **
  - **Impact --- 400 (362msrots) or less **

**Storage condition:**

- **Ambient temperature humidity range ---**
  - -20 to 60°C, 5 to 90%RH (No dew condensation)

**Power failure protection:**

- The settings are kept using EEPROM and lithium battery backed up RAM

- **Insulation resistance:**
  - Between secondary terminal and protection conductor --- 500V DC 20MΩ or more
  - Between primary terminal and protection conductor --- 500V DC 20MΩ or more
  - Between primary terminal and secondary terminal --- 500V DC 20MΩ or more

**Withstand voltage:**

- Between secondary terminal and protection conductor terminal --- 500V AC for 1 minute
  - Between primary terminal and protection conductor terminal --- 1500V AC for 1 minute
  - Between primary terminal and secondary terminal --- 1500V AC for 1 minute

**Protection:**

- Conformed to IP54

**Case assembly material:**

- Case, Front bezel, input/output terminal board --- Fire-retardant polycarbonate resin
  - External input/output, transmission output, communications terminal board --- PBT

**Color:**

- Front bezel, case --- Gray or black

**Terminal cover:**

- Standard provision

**Weight:**

- Approx 1.7kg

**Mounting:**

- Panel mounting

**Terminal screw:**

- M3.5 (M3 for external input/output, transmission output, communications terminal board)

### SOFTWARE

- DP-G parameter editing software
  - Program pattern editing / file management / printing
  - Setting parameter editing / file management / printing
  - CF card reading / storing for DP-G

### OPTIOIN SPECIFICATION

- **Transmission signal output**
  - **Number of outputs:** Up to 2 points
  - **Output signal:**
    - 4 to 20mA DC (load resistance 400Ω or less)
    - 0 to 1V DC (load resistance 50kΩ or more)
    - 1 to 5V DC (load resistance 50kΩ or more)
    - 0 to 10V DC (load resistance 50kΩ or more)
    - 1 to 5V DC for secondary transmission output

- **Power voltage:** 24V DC

**Current capacity:**

- Up to 30mA

**Communications interface**

- Number of communications points: Up to 2 points

**Communications type:**

- RS232C, RS422A, RS485
  - *COM2 for front and rear switching

**Protocol:**

- MODBUS/PRIVATE
## MEASURING RANGES

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>Scale range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong></td>
<td>0.0 to 1820.0°C</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td>0.0 to 1760.0°C</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td>0.0 to 1760.0°C</td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>-200.0 to 1370.0°C</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>-270.0 to 1000.0°C</td>
</tr>
<tr>
<td><strong>J</strong></td>
<td>-200.0 to 1200.0°C</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>-270.0 to 400.0°C</td>
</tr>
<tr>
<td><strong>WRe5-WRe26</strong></td>
<td>0.0 to 2310.0°C</td>
</tr>
<tr>
<td><strong>W-Re26</strong></td>
<td>0.0 to 2310.0°C</td>
</tr>
<tr>
<td><strong>NiMo-Ni</strong></td>
<td>-50.0 to 1410.0°C</td>
</tr>
<tr>
<td><strong>CR-AuFe</strong></td>
<td>0.0 to 280.0K</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>0.0 to 1300.0°C</td>
</tr>
<tr>
<td><strong>Platinell</strong></td>
<td>0.0 to 1390.0°C</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>-200.0 to 400.0°C</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>-200.0 to 900.0°C</td>
</tr>
<tr>
<td><strong>DC voltage</strong></td>
<td></td>
</tr>
<tr>
<td>10mV</td>
<td>-10 to 10mV</td>
</tr>
<tr>
<td>20mV</td>
<td>-20 to 20mV</td>
</tr>
<tr>
<td>50mV</td>
<td>-50 to 50mV</td>
</tr>
<tr>
<td>100mV</td>
<td>-100 to 100mV</td>
</tr>
<tr>
<td><strong>DC current</strong></td>
<td></td>
</tr>
<tr>
<td>5V</td>
<td>-5 to 5V</td>
</tr>
<tr>
<td>10V</td>
<td>-10 to 10V</td>
</tr>
<tr>
<td><strong>20mA</strong></td>
<td>0 to 20mA</td>
</tr>
</tbody>
</table>

## ACCURACY RATINGS

<table>
<thead>
<tr>
<th>Input type</th>
<th>Accuracy rating</th>
<th>Exception</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong></td>
<td>0 to 400°C : Not defined</td>
<td>400 to 800°C : ±0.2%±1digit</td>
</tr>
<tr>
<td><strong>R, S</strong></td>
<td>0 to 400°C : ±0.2%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>-200 to 0°C : ±0.2%±1digit or ±60μV-equivalent value, whichever is greater</td>
<td></td>
</tr>
<tr>
<td><strong>W</strong></td>
<td>-270 to 0°C : ±0.2%±1digit or ±80μV-equivalent value, whichever is greater</td>
<td></td>
</tr>
<tr>
<td><strong>J</strong></td>
<td>±0.1%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>-200 to 0°C : ±0.2%±1digit or ±40μV-equivalent value, whichever is greater</td>
<td></td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>-200 to 0°C : ±0.2%±1digit or ±40μV-equivalent value, whichever is greater</td>
<td></td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>-200 to 0°C : ±0.2%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>CR-AuFe</strong></td>
<td>±0.2%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>Pt-Rh40-Pt-Rh20</strong></td>
<td>0 to 400°C : ±1.5%±1digit</td>
<td>400 to 800°C : ±0.8%±1digit</td>
</tr>
<tr>
<td><strong>Platinell</strong></td>
<td>±0.2%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>-200.0 to 400.0°C</td>
<td></td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>-200.0 to 900.0°C</td>
<td></td>
</tr>
<tr>
<td><strong>R T D</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pt100</strong></td>
<td>±0.1%±1digit</td>
<td>Measuring range of</td>
</tr>
<tr>
<td><strong>Old Pt100</strong></td>
<td>-100 to 100°C</td>
<td>±0.2%±1digit</td>
</tr>
<tr>
<td><strong>JPt100</strong></td>
<td>±0.1%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>JPt50</strong></td>
<td>±0.2%±1digit</td>
<td></td>
</tr>
<tr>
<td><strong>Pt-Co</strong></td>
<td>4 to 20K : ±0.5%±1digit</td>
<td>20 to 50K : ±0.3%±1digit</td>
</tr>
</tbody>
</table>

*Accuracy converted to the measuring range under the reference operation condition.
Reference junction compensation accuracy is added to thermocouple.

WRe5-WRe26, W-Re26, NiMo-Ni, Platinell II, CR-AuFe, PtRh40-PtRh20: ASTM Vol.14.03
U, L: DIN43710-1985
JP50: JIS C 1604-1981
**TERMINAL ARRANGEMENT**

Control output terminals (Output1)
- Current/voltage/SSR drive pulse type (+)
- Current/voltage/SSR drive pulse type (-)

Control output terminals (Output2)
- Current/voltage/SSR drive pulse type (+)
- Current/voltage/SSR drive pulse type (-)

Time signal output terminals
- Status output terminals
- External drive input terminals
- Pattern selection input (BCD code) terminals

**EXTERNAL INPUT/OUTPUT TERMINALS**

<table>
<thead>
<tr>
<th>Time signal output terminals</th>
<th>Status output terminals</th>
<th>External drive input terminals and pattern selection input (BCD code) terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM : 1A LOAD</td>
<td>COM : 3A LOAD</td>
<td>COM : 4A LOAD</td>
</tr>
<tr>
<td>TS 1 : 1B LOAD</td>
<td>RUN/STOP : 3B LOAD</td>
<td>RUN/STOP : 4B LOAD</td>
</tr>
<tr>
<td>TS 2 : 1C LOAD</td>
<td>ADV : 3C LOAD</td>
<td>ADV : 4C LOAD</td>
</tr>
<tr>
<td>TS 3 : 1D LOAD</td>
<td>RESET : 3D LOAD</td>
<td>RESET : 4D LOAD</td>
</tr>
<tr>
<td>TS 4 : 1E LOAD</td>
<td>WAIT : 3E LOAD</td>
<td>WAIT : 4E LOAD</td>
</tr>
<tr>
<td>TS 5 : 1F LOAD</td>
<td>FAST : 3F LOAD</td>
<td>FAST : 4F LOAD</td>
</tr>
<tr>
<td>TS 6 : 1G LOAD</td>
<td>END : 3G LOAD</td>
<td>END : 4G LOAD</td>
</tr>
<tr>
<td>TS 7 : 1H LOAD</td>
<td>ALM-WAIT : 3H LOAD</td>
<td>ALM-WAIT : 4F LOAD</td>
</tr>
<tr>
<td>TS 8 : 1I LOAD</td>
<td>ERROR : 3I LOAD</td>
<td>ERROR : 4F LOAD</td>
</tr>
<tr>
<td>COM : 2A LOAD</td>
<td>SV/UP : 3J LOAD</td>
<td>SV/UP : 4F LOAD</td>
</tr>
<tr>
<td>TS 9 : 1J LOAD</td>
<td>SV-DOWN : 4J LOAD</td>
<td>SV-DOWN : 5F LOAD</td>
</tr>
<tr>
<td>TS 10 : 2B LOAD</td>
<td></td>
<td>200 : 41 F50</td>
</tr>
<tr>
<td>TS 11 : 2C LOAD</td>
<td></td>
<td>40 : 5H F50</td>
</tr>
<tr>
<td>TS 12 : 2D LOAD</td>
<td></td>
<td>80 : 5J F50</td>
</tr>
<tr>
<td>TS 13 : 2E LOAD</td>
<td></td>
<td>COM : 5A F50</td>
</tr>
<tr>
<td>TS 14 : 2F LOAD</td>
<td></td>
<td>1: 5B F50</td>
</tr>
<tr>
<td>TS 15 : 2G LOAD</td>
<td></td>
<td>2: 5C F50</td>
</tr>
<tr>
<td>TS 16 : 2H LOAD</td>
<td></td>
<td>4: 5D F50</td>
</tr>
<tr>
<td>TS 17 : 2I LOAD</td>
<td></td>
<td>8: 5E F50</td>
</tr>
<tr>
<td>TS 18 : 2J LOAD</td>
<td></td>
<td>10: 5F F50</td>
</tr>
<tr>
<td>TS 19 : 2K LOAD</td>
<td></td>
<td>20: 5G F50</td>
</tr>
<tr>
<td>TS 20 : 2L LOAD</td>
<td></td>
<td>40: 5H F50</td>
</tr>
<tr>
<td>TS 21 : 2M LOAD</td>
<td></td>
<td>80: 5J F50</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

- 144 mm x 144 mm
- 100-240V AC
- Dimensions: 138 mm x 138 mm

**PANEL CUTOUT**

Specifications subject to change without notice. Printed in Japan (I) 2009.