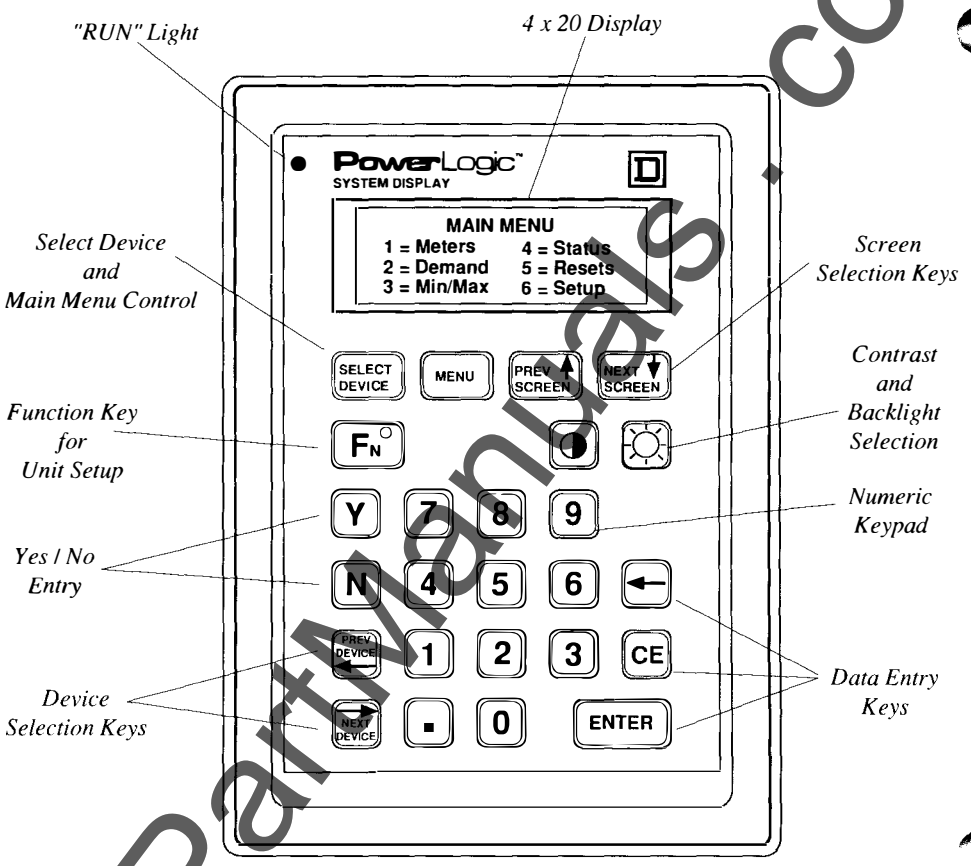
DESCRIPTIVE BULLETIN

Bulletin DB-102 Rev 1 February, 1991

PowerLogic®
System Display

PowerLogic® System Display

- CENTRALIZED DISPLAY FOR UP TO 16 CIRCUIT MONITORS
- SIMPLE MENU STRUCTURE FOR EASY ACCESS TO EXTENSIVE DATA
- 4-LINE X 20-CHARACTER BACKLIT LCD READOUT
- DISPLAY CAN BE MOUNTED IN POWER EQUIPMENT OR REMOTE
- ON-BOARD CLOCK / CALENDAR
- PRINTER PORT OPTION FOR HARD-COPY OF READINGS



The PowerLogic® System Display provides real-time access to information from PowerLogic Circuit Monitors (up to 32 on a single communications channel). All instrumentation, status, and historical data stored in the Circuit Monitor is available on user command. Menu selections allow the user to reset metering and historical information and perform Circuit Monitor setup operations.

The System Display can be fully customized for each application from the front faceplate using the Function ("Fn") key. The user may set the clock, change passwords, or add new Circuit Monitors to the communications channel. In addition, a Circuit Monitor may temporarily be marked "out of service", allowing maintenance on affected circuits without disrupting system operation.

The System Display's NEMA 4 rating makes it suitable for harsh industrial environments. It is housed in a steel case and designed to be flush mounted in power equipment.

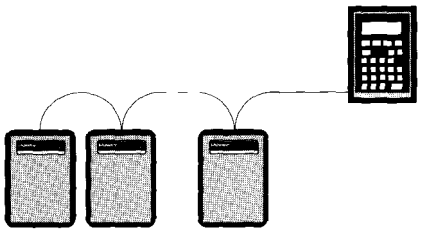
An industry-standard RS-485 data communications channel ensures a reliable link to PowerLogic® Circuit Monitors. Where power equipment is in an inaccessible location, the System Display can be remote mounted (e.g., at floor level) for operator convenience and safety.

The System Display can be used in various lighting conditions. The 4-line by 20-character display utilizes high contrast LCD technology and LED backlighting for high reliability and superior readability. Both the contrast and backlight levels are keypad-adjustable.

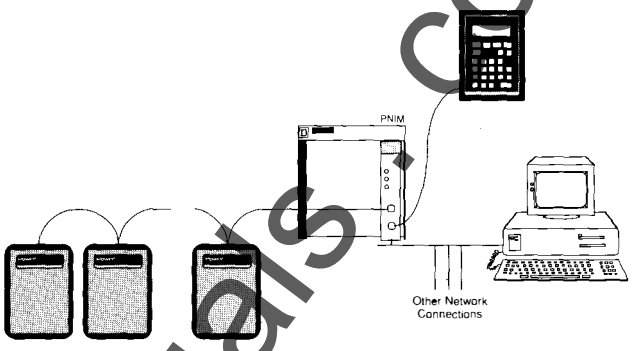
The keypad is designed for simple operation of the System Display. Color-coded keys are separated into easily identified groups or functions. In addition, each key provides tactile feedback and has a raised perimeter to ensure positive response even with gloved-hand operation.

A green "Run" LED in the upper left corner of the System Display indicates proper operation of the unit. A yellow LED in the corner of the Function ("Fn") key illuminates when activating the special function mode, used to perform initial setup of the System Display.

The System Display contains an on-board clock/calendar. The correct time and date are automatically downloaded to each Circuit Monitor on the communications channel, ensuring time synchronization.



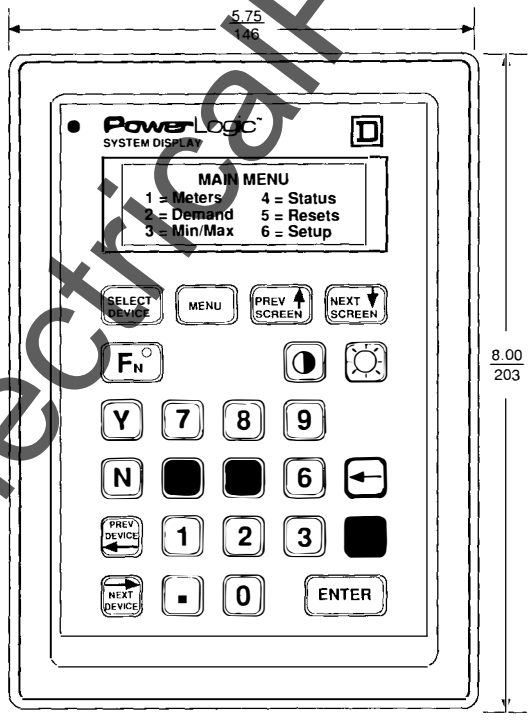
PowerLogic® System 1

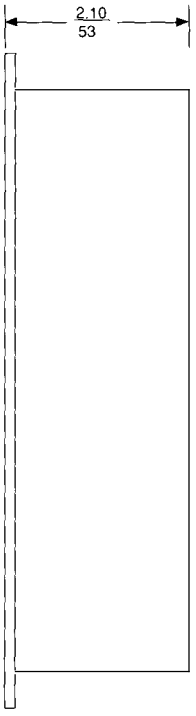


PowerLogic® System 3 or 4

LOCAL MONITORING
One or more PowerLogic® Circuit Monitors (up to 32 on a single communications channel) can be directly connected to a PowerLogic® System Display. Total length of the multipoint data communications channel can be up to 10,000 feet, allowing for convenient location of the System Display.

LOCAL & REMOTE MONITORING (& CONTROL)
Where multiple computers or programmable controllers are used to perform additional monitoring and control functions, a PowerLogic System Display can be connected to Circuit Monitors via a PowerLogic Network Interface Module (PNIM). One or more Circuit Monitors (up to 32 on a single communications channel) can be connected to the PNIM to provide access to the SY/NET® Local Area Network (LAN). The PowerLogic System Display is connected to a second port on the PNIM to provide local monitoring.





Dimensions in $\frac{\text{Inches}}{\text{Millimeters}}$

Weight (approx.) = 3.4 lbs (1.5 kg)

Main Menu Structure

1= Meters

Ammeter
Voltmeter, LL
Voltmeter, LN
Power Meters
Power Factor Meters
Freq; Temp; Irms
Energy; Reactive Energy
Last Reset, Energy

2 = Demand

Avg Dmd Currents
Peak Dmd Current, Ph-A
Peak Dmd Current, Ph-B
Peak Dmd Current, Ph-C
Last Reset, Dmd Currents
Avg; Predicted Dmd Power
Peak Demand Power
Last Reset, Dmd Power

3 = Min/Max

3-Phase Currents
1-Phase Currents
LL Voltages
LN Voltages
Power
1-Phase Power Factors
3-Phase PF; Freq; Temp
Last Reset, Min/Max

4 = Status

Self-Test; Date; Time
Input Status (Optional)
Energy Mgt Alarm 1
Energy Mgt Alarm 2
Energy Mgt Alarm 3
Alarm 1 Historical Data
Alarm 2 Historical Data
Alarm 3 Historical Data

5 = Resets

Security Screen (Code Req'd)
RESET Peak Dmd Currents
RESET Peak Demand Power
RESET Energy
RESET Min/Max
RESET Energy Mgt Data

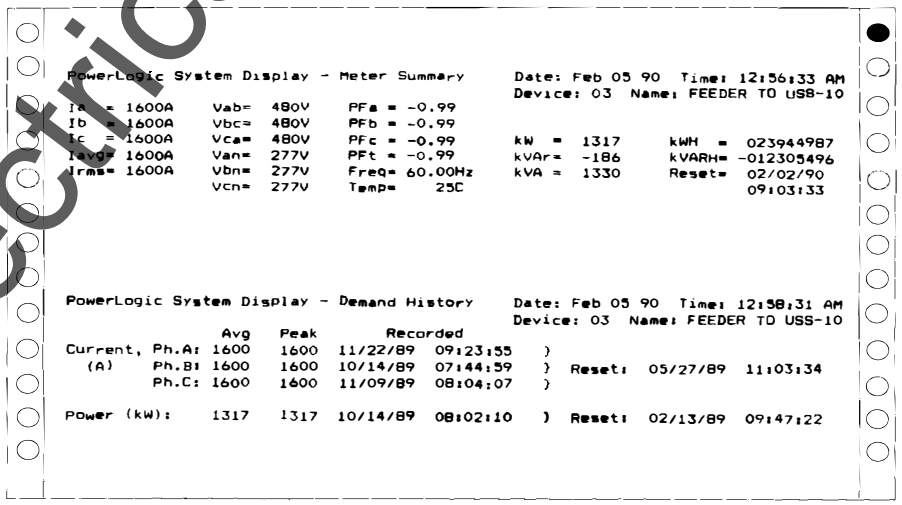
6 = Setup

Security Screen (Code Req'd)
System Type (3w or 4w)
CT Rating (xxxx:5)
PT Rating (xxxxx:120)
Energy Mgt Set Points (kW)
Demand Interval (1-60 min)
Energy (Absolute or Signed)

STANDARD CONFIGURATIONS. The PowerLogic® System Display comes complete with main menu structure as shown above. A single menu structure provides the flexibility required for all Circuit Monitor models.

CUSTOM CONFIGURATIONS. The System Display can be further customized for a specific application. Expanded screen memory (16K EEPROM) is available with System Display model SD-220. Customized screen displays may be specially ordered from Square D, utilizing the additional screen memory. Alternate screen layouts, specialized status displays, and keyboard control of relay outputs may be tailored to meet individual customer specifications.

PRINTER PORT OPTION. An optional serial RS-232 port available with model SD-220 provides a printout of Circuit Monitor data on user command. Standard reports include a meter summary and demand history. Reports may also be customized to meet individual customer needs, on a special-order basis.



```
PowerLogic System Display - Meter Summary      Date: Feb 05 90  Time: 12:56:33 AM
                                               Device: 03  Name: FEEDER TO USS-10
Ia  = 1600A   Vab=  480V   PFa = -0.99
Ib  = 1600A   Vbc=  480V   PFb = -0.99
Ic  = 1600A   Vca=  480V   PFc = -0.99         kW  =  1317     kWH  =  023944987
Iavg= 1600A   Van=  277V   PFt = -0.99         kVAr=  -186     kVARH= -012305496
Irms= 1600A   Vbn=  277V   Freq= 60.00Hz       kVA =  1330     Reset=  02/02/90
              Vcn=  277V   Temp=   25C                                 09:03:33


PowerLogic System Display - Demand History     Date: Feb 05 90  Time: 12:58:31 AM
                                               Device: 03  Name: FEEDER TO USS-10
                  Avg   Peak      Recorded
Current, Ph.A: 1600   1600  11/22/89  09:23:55   )
  (A)    Ph.B: 1600   1600  10/14/89  07:44:59   )  Reset:  05/27/89  11:03:34
        Ph.C: 1600   1600  11/09/89  08:04:07   )

Power (kW):    1317   1317  10/14/89  08:02:10   )  Reset:  02/13/89  09:47:22
```

SIMPLE MENU STRUCTURE. A straightforward main menu structure is used to keep the operation of the System Display simple. The user can select one of six items as shown, by pressing the corresponding number key.

```
MAIN MENU
1 = Meters      4 = Status
2 = Demand      5 = Resets
3 = Min / Max   6 = Setup
```

SCROLL DATA OR COMPARE READINGS OF MULTIPLE CIRCUITS. The user may touch the screen selection keys ("Prev. Screen", "Next Screen") to view all data for a single selected Circuit Monitor. Alternatively, the user may touch the device selection keys ("Prev. Device", "Next Device") to view the same information for a range of monitored circuits.

```
FEEDER TO CHILLER          #16
Ammeter, RMS (A):
  Ia =   730    Ic =   730
  Ib =   730    Iavg = 730
```

INSTANT ACCESS TO METERING. The System Display monitors the selected device and presents real-time metering information. Displayed values are continuously updated to instantly reflect changes in circuit conditions.

NAMEPLATE DATA APPEARS ON ALL DISPLAY SCREENS. User-specified nameplate information (up to 16 characters) appears at the top of all screens. In addition, the device number of the selected Circuit Monitor also appears at the upper right corner of each screen.

```
FEEDER TO USS-3            #03
Energy:
        107647957   kWH
        000742238   kVARH
```

ENERGY USAGE. Accumulated energy values calculated and maintained in each Circuit Monitor are displayed. Values for both kilowatthours and kilovarhours are presented, reported to 9 digits to avoid frequent rollover.

DEMAND HISTORY. Average and peak demand currents are presented on a per-phase basis, providing the power system user with a powerful tool to manage system loading. Also provided are average, predicted and peak real power demand values for load management and energy cost control.

```
MAIN BREAKER               #01
Peak Demand Power:
                    06/14/89
  2132kW            10:19:47
```

TIME/DATE INFORMATION AVAILABLE. Important time and date information is presented, including when peak demand values were recorded and when the last reset of each metering function was performed.

```
MAIN BREAKER               #01
PFa =  -0.79  to   1.00
PFb =  -0.68  to   0.87
PFc =  -0.90  to   0.94
```

RUNNING MIN/MAX. Running minimum and maximum values are maintained in the Circuit Monitor for each instantaneous meter quantity. These values provide valuable information about the operating range for a given circuit since the time of last reset.

```
FDR TO SWBD #7             #07
Self-Test:  OK

Feb 17, 90          12:55
```

STATUS INFORMATION. The results of each Circuit Monitor's self-test are presented, along with the current time and date. In addition, energy management alarm status, historical data, and status inputs (where applicable) are presented.

```
MAIN BREAKER               #01

Dmd Interval  [15] ?_
```

PASSWORD-PROTECTED RESETS & SETUP. Reset commands and setup functions are protected by a user-defined password, ensuring security against inadvertent or unauthorized operation. Setup functions include entry of current and transformer ratios, system type, demand interval, and energy management alarm setpoints.

```
* RESTRICTED ACCESS *
ENTER CODE:
* * * *
```

Specifications

Display
- Type ..... LCD (Twisted -Nematic)
- Backlight ..... LED (Yellow)
- Contrast Ratio 10:1
- Maximum Viewing Angle
  - Horizontal ..... -30 to +30 Degrees
  - Vertical ..... -30 to +20 Degrees

Keypad
- Type ..... Membrane
- Tactile Feedback ..... Stainless Steel Dome
- Operational Life ..... 1 Million Cycles

Communications
- Main Port RS-485
- Serial Printer Port (Optional) RS-232C

Clock/Calendar
- Accuracy (at 25 degrees C) ..... +/- 2 sec in 24 hrs

Electrical
- Control Power Input
  - Nominal Voltage 120VAC
  - Operating Range ..... 90-132 VAC
  - Burden ..... 75mA @ 120 VAC (9VA)
  - Frequency Range ..... 45.0 to 65.0 Hz
  - Isolation ..... 1500V, 1 min.
- Ride-Through on Power Loss ..... 0.167 sec at 120VAC
- Fusing ..... 0.25A, 250V (Externally Accessible)
- Run LED ..... Indicates Self-Test OK

Environmental
- Operating Temperature* ..... 0 to 60 degrees C
- Storage Temperature ..... -20 to +70 degrees C
- Humidity Rating ..... 5-95% Relative Humidity (non-condensing)

* Derating necessary if backlight on for extended periods

ORDERING INFORMATION

SQUARE D CATALOG NO.

	TYPE	
CLASS	MODEL	SUFFIX
3050	SD200	X1

CAT. CLASS 3050

SYSTEM DISPLAY MODEL:
- SD-200 Standard System Display
- SD-220 Includes 16K Expanded Screen Memory and Serial Printer Port

CONTROL POWER INPUT:
- -X1 120 VAC (50/60 Hz)

NOTE: Customized Screen Displays are available by special order. (May require 16K memory).

For Further Information - Contact your nearby Square D sales office or call or write to :
Square D Company • PowerLogic • 330 Weakley Rd • Smyrna, TN 37167 • Ph (615) 459-8500.

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