

# DLS Data Logging System (Touch Screen )

DLS-PR10 - up to 6 channel  
DLS-PR20 – up to 24 channel



## Feature

- ✓ DLS-PR10 -Up to 6 channel i.e 1..6 channel
- ✓ DLS-PR20 -Up to 24 channel i.e 1..24 channel
- ✓ Overall Size (Panel Mount) : 203 x203 x203mm – for with or without Timer
- ✓ 90~264VAC, 47-83Hz
- ✓ Standard Ethernet interface
- ✓ High / Low alarm setting
- ✓ Volt free contact for
  - power failure
  - High / Low Alarm with Time delay function
- ✓ Dry contact to BMS System
- ✓ Storage Media – SD card
- ✓ Basic software for non-communication application with basic function and Mathematics, Counter & Totalizer & FDA 21 CFR part 11 compliance
- ✓ Relevant Thermocouple – 5 mtr inclusive for measurement on each channel
- ✓ Optional : extensive software for communication of RS-232/422/485 or Ethernet
- ✓ Optional : Digital Timer or Analog Timer available
- ✓ Optional : Calibration available

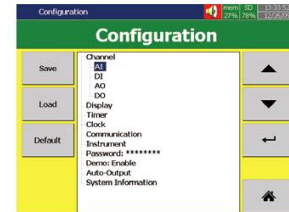
	<i>DLS-PR10</i>	<i>DLS-PR20</i>
<i>Product position</i>	Low-cost one, good for replacing 6-dotting chart recorders, and 1, 2, 3 pen recorders	Medium size and powerful up to the highest 24 One, input numbers channels
<i>Input numbers</i>	3, 6 channels	3, 6, 12, 18, 24 channels
<i>True universal inputs</i>	JPt50, JPt100, JPt200, JPt500, JPt1000( $\alpha=0.003916$ ) Cu10 ( $\alpha=0.00427$ ), Cu50, Cu100( $\alpha=0.00426, 0.00428$ ), Ni100, Ni200, Ni500, Ni1000( $\alpha=0.00617$ ) mA, V, mV	
<i>The fastest sampling rate</i>	To reach 100 msec / dot, default setting at 1 sec / dot	
<i>Math, External channels, Batch, Custom display, FDA 21 CFR part 11</i>	Plus versions	
<i>Display</i>	4.3" TFT wide touch screen	5.6" TFT touch screen
<i>Resolution</i>	480 x 272	640 x 480
<i>MTFB backlight at 25°C</i>	30,000 hrs	30,000 hrs
<i>Backlight</i>	LED	
<i>Screen saver, Email</i>	Yes	
<i>A faster CPU</i>	ARM Cortex-A8, 1Ghz	
<i>Internal Flash memory</i>	256 MB	
<i>RAM</i>	256 MB	
<i>Ethernet</i>	Modbus TCP/IP	
<i>RS-232/422/485</i>	Optional RS-232 or RS-422/485 Modbus RTU	
<i>SD card Slot, USB host x 2</i>	Standard, one USB in the front , another USB at the back	
<i>Pulse Input</i>	Optional DI card offering either logic or high frequency pulse counter	
<i>START / STOP key</i>	To start/stop record and to turn off the display only, not the power so that a quick restart possible later	
<i>Calibration correction</i>	-site calibration possible, or using handy features of Offset and Gain for correction	
<i>Multilingual</i>	Convenient for local users by offering languages in Brazil Portuguese, Chinese (simplified, traditional) Czech, Danish, Dutch, English, French, German, Greek, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Swedish, Thai, Turkish	
<i>PC Software Historical Viewer + Configuration</i>	standard	
<i>Extensive software Data Acquisition Studio</i>	Optional real-time monitoring	
<i>Power supply</i>	90-250VAC or 11-36VDC	
<i>Protection</i>	IP65 front, IP20 rear	
<i>Operating temperature</i>	0°C to 50°C	
<i>Storage temperature</i>	-30°C to 70°C	
<i>Safety standards</i>	CE, cULus, RoHS	

## FRIENDLY FUNCTIONS IN RECORDERS

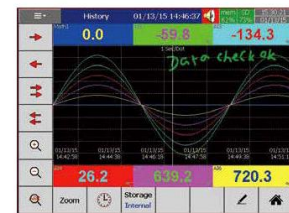
### Standard version of Firmware

- AI:** Analog Input is offered various log speed In 100ms, 1, 2, 5, 10, 20, 30 Sec, 1, 2 Min/Dot.
- DI:** Digital Input is offered either normal Logic or high frequency Pulse.
- AO:** In analog output, mA or V and its Expression can be defined.
- DO:** Digital output/relay output can be enabled. Each DO card has 8 relays.
- Display:** Various display speeds are available in 100ms, 1, 2, 5, 10, 20, 30 Sec/Dot, or 1, 2, 10, 30 Min/Page, 1, 2, 4, 8, 12 Hour/Page, or 1 Day/Page.
- Timer:** Timer in Countdown, Repeat Countdown, Daily, Weekly or Monthly base, and various jobs can be defined.
- Clock:** Date Style of MM/dd/yy or dd/MM/yy, Time Synchronize via Internet, and Summer Saving Time can be defined.
- Communication:** Web Server and Email functions are available in Communication in Standard firmware.
- Instrument:** Brightness adjustment and Screen Saver are available in Instrument.
- Password:** If Normal Security is chosen, then only one password is offered. If high Security of CFR-21 is chosen, then 9 levels of password can be defined.
- Demo:** Enable or disable the demonstration.
- Auto-output:** Automatic output can be set to specify the printer, to print Historical data & Report data in specified period of time.
- System information:** It gives Firmware version number, Internal & External memory status, IP address, and IO card status of each Slot.
- Calibrate:** Sometimes the field calibration is required for high accuracy. In this case, a qualified engineer can do the necessary callorlation.

### Configuration In Tree Layout is easy for operation



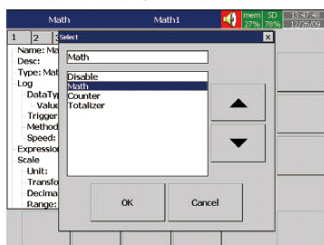
### Handwriting messages are handy for users



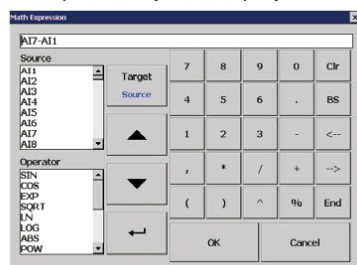
### Plus version of Firmware

In addition to features of Standard firmware, Plus versions offer more features of Math, External Channels, Custom Display, Batch, FDA 21 CFR part 11.

**Math:** It Includes Math, Counter & Totalizer.



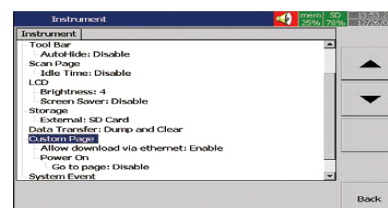
Math Expression is keyed in an easy way.



**External Channels:** Besides AI & DI inputs, PR logging system accept inputs through communication called External Channel. DLS -PR10 and DLS-PR20 External Channel up to 24 & 48 respectively



**Custom Edited Display:** In Plus versions, PC software Panel Studio allows users to edit the specific display instead of standard one, and then download it onto PR recorders.



**Batch:** Batch production record is constantly required for more strict production, for example food and drugs.

**FDA 21 CFR part 11:** This feature is compiled with U.S. Food and Drug Administration with human health concern. All data should be avoided from manipulating after recording.

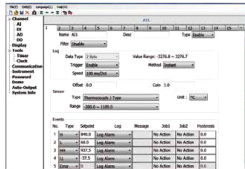
## POWERFUL FUNCTIONS IN PC SOFTWARE

### Free basic software

It consists of two parts, which are Configuration and Historical Viewer.

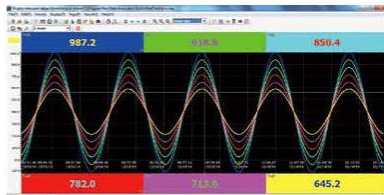
#### I. Configuration

It is easy to do recorder configuration on PC. Then, send the configuration files from PC to recorder.



#### II. Historical Viewer

It can display historical trends, historical alarms, events, and then print it. It can search data by time, time period, tag, alarm, events and remarks. It also can export data in CSV format.



### Extensive software Data Acquisition Studio

#### III. RealTime Viewer

Besides Configuration & Historical Viewer, it offers additional software RealTime Viewer for real-time monitoring.



#### IV. Panel Studio

If Plus version 2 or 3 of Firmware is purchased, additional software Panel Studio is offered for custom display. The users can use it to edit specific displays on PC first, and then download it to recorders. The custom edited displays will be additional pages to standard ones.

Edit it on PC



Download it onto recorders

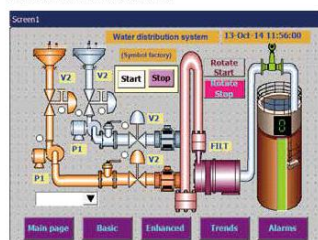


TABLE 1

Type	Range	Accuracy at 25 °C	Input Impedance
J	-120 ~ 1000 °C	±1 °C	3.12MΩ
K	-200 ~ 1370 °C (-328 ~ 2498 °F)	±1 °C	3.12MΩ
T	-250 ~ 400 °C (-418 ~ 752 °F)	±1 °C	3.12MΩ
E	-100 ~ 900 °C (-148 ~ 1652 °F)	±1 °C	3.12MΩ
B	0 ~ 1820 °C (32 ~ 3308 °F)	±2 °C (200 ~ 1820 °C)	3.12MΩ
R	0 ~ 1768 °C (32 ~ 3214 °F)	±2 °C	3.12MΩ
S	0 ~ 1768 °C (32 ~ 3214 °F)	±2 °C	3.12MΩ
N	-250 ~ 1300 °C (-418 ~ 2372 °F)	±1 °C	3.12MΩ
L	-200 ~ 900 °C (-328 ~ 1652 °F)	±1 °C	3.12MΩ
U	-200 ~ 600 °C (-328 ~ 1112 °F)	±1 °C	3.12MΩ
P	0 ~ 1395 °C (32~2543 °F)	±1 °C	3.12MΩ
W5	0 ~ 2315 °C (32 ~ 4199 °F)	±1 °C	3.12MΩ
W3	0 ~ 2315 °C (32 ~ 4199 °F)	±1 °C	3.12MΩ
PT50 (α = 0.00385)	-200 ~ 850 °C (-328 ~ 1562 °F)	±0.4 °C	2.0KΩ
PT100 (α = 0.00385)	-200 ~ 850 °C (-328 ~ 1562 °F)	±0.4 °C	2.0KΩ
PT200 (α = 0.00385)	-200 ~ 850 °C (-328 ~ 1562 °F)	±0.4 °C	2.0KΩ
PT500 (α = 0.00385)	-200 ~ 850 °C (-328 ~ 1562 °F)	±0.4 °C	2.0KΩ
PT1000 (α = 0.00385)	-200 ~ 350 °C (-328 ~ 662 °F)	±0.4 °C	2.0KΩ
PT50 (α = 0.00391)	-200 ~ 850 °C (-328 ~ 1562 °F)	±0.4 °C	2.0KΩ
PT100 (α = 0.00391)	-200 ~ 850 °C (-328 ~ 1562 °F)	±0.4 °C	2.0KΩ
JPT50 (α = 0.003916)	-200 ~ 600 °C (-328 ~ 1112 °F)	±0.4 °C	2.0KΩ
JPT100 (α = 0.003916)	-200 ~ 600 °C (-328 ~ 1112 °F)	±0.4 °C	2.0KΩ
JPT200 (α = 0.003916)	-200 ~ 600 °C (-328 ~ 1112 °F)	±0.4 °C	2.0KΩ
JPT500 (α = 0.003916)	-200 ~ 600 °C (-328 ~ 1112 °F)	±0.4 °C	2.0KΩ
JPT1000 (α = 0.003916)	-200 ~ 350 °C (-328 ~ 662 °F)	±0.4 °C	2.0KΩ
Cu50 (α = 0.00426)	-50 ~ 200 °C (-58 ~ 392 °F)	±0.4 °C	2.0KΩ
Cu100 (α = 0.00426)	-50 ~ 200 °C (-58 ~ 392 °F)	±0.4 °C	2.0KΩ
Cu50 (α = 0.00428)	-180 ~ 200 °C (-292 ~ 392 °F)	±0.4 °C	2.0KΩ
Cu100 (α = 0.00428)	-180 ~ 200 °C (-292 ~ 392 °F)	±0.4 °C	2.0KΩ
Ni100 (α = 0.00617)	-60 ~ 180 °C (-76 ~ 356 °F)	±0.4 °C	2.0KΩ
Ni200 (α = 0.00617)	-60 ~ 180 °C (-76 ~ 356 °F)	±0.4 °C	2.0KΩ
Ni500 (α = 0.00617)	-60 ~ 180 °C (-76 ~ 356 °F)	±0.4 °C	2.0KΩ
Ni1000 (α = 0.00617)	-60 ~ 180 °C (-76 ~ 356 °F)	±0.4 °C	2.0KΩ
Cu10 (α = 0.00427)	-200 ~ 260 °C (-328 ~ 500 °F)	±0.1 °C	2.0KΩ
±20mA	-26 ~ 26mA	±0.05%	75Ω
±60mV	-122 ~ 122mV	±0.05%	3.12MΩ
±200mV	-243 ~ 243mV	±0.05%	3.12MΩ
±1V	-1.58 ~ 1.58mV	±0.05%	3.12MΩ
±2V	-3.16 ~ 3.16mV	±0.05%	3.12MΩ
±6V	-6.32 ~ 6.32V	±0.05%	3.12MΩ
±20V	-25.3 ~ 25.3V	±0.05%	3.12MΩ
±50V	-50.6 ~ 50.6V	±0.05%	3.12MΩ
0.4 ~ 2V	-3.16 ~ 3.16V	±0.05%	3.12MΩ
1 ~ 5V	-6.32 ~ 6.32V	±0.05%	3.12MΩ

**ORDERING CODE**

**DLS-PR10** - **1** **2** - **3** - **4**

**1: Input Type (See Table 1)**

J: J  
K:K  
T:T  
E: E  
N: N  
PT100(DIN): PT100DIN  
PT100(JIS): PT100 JIS  
mV: mV  
mA: mA  
1V: 0~1V  
5V: 0~5V  
10V: 0~10V

**2: No of Channel ( Max 6 channel)**

03: 3 Channel  
06: 6 Channel

**3: Timer (Optional)**

0: Nil  
1TD: One Timer (Digital)  
2TD: Two Timer (Digital)  
1TA: One Timer (Analog)  
2TA: Two Timer (Analog)

**4: Calibration (Optional)**

0: Nil  
CAL: Calibration (Standard 3 point Cal)  
CSCAL: Custom Calibration (3point to specify by user)

**ORDERING CODE**

**DLS-PR20** - **1** **2** - **3** - **4**

**1: Input Type (See Table 1)**

J: J  
K:K  
T:T  
E: E  
PT100(DIN): PT100DIN  
PT100(JIS): PT100 JIS  
mV: mV  
mA: mA  
1V: 0~1V  
5V: 0~5V  
10V: 0~10V

**2: No of Channel (Max 24 channel)**

03: 3 Channel  
06: 6 Channel  
12: 12 Channel  
18: 18 Channel  
24: 24 Channel

**3: Timer (Optional)**

0: Nil  
1TD: One Timer (Digital)  
2TD: Two Timer (Digital)  
1TA: One Timer (Analog)  
2TA: Two Timer (Analog)

**4: Calibration (Optional)**

0: Nil  
CAL: Calibration  
CSCAL- Custom Calibration (3 point to specify by user)