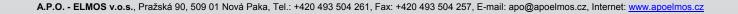




# **PR Series Paperless Recorders**



## **Outstanding Specifications & Features**

	PR10	PR20
Product position	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
Input numbers	3, 6 channels	3, 6, 12, 18, 24 channels
True universal inputs	Thermocouples: J, K, T, E, B, R, S, N, L, U, P, W5, W3 RTD: Pt50, Pt100, Pt200, Pt500, Pt1000 ( $\alpha$ =0.00385), Cu10 ( $\alpha$ =0.00427), Cu50, Cu100( $\alpha$ =0.00426, 0.00428	Pt50, Pt100 (
The fastest sampling rate	to reach 100 msec / dot, default setting at 1 sec / do	t
Math, External channels, Batch, Custom display, FDA 21 CFR part 11	only available by Plus versions	
Display	4.3" TFT wide touch screen	5.6" TFT touch screen
Resolution	480 x 272	640 x 480
MTFB backlight at 25°C	30,000 hrs	30,000 hrs
Backlight	LED	
Screen saver, Email	Yes	
A faster CPU	ARM Cortex-A8, 1Ghz	
Internal Flash memory	256 MB	
RAM	256 MB	
Ethernet	Modbus TCP/IP	
RS-232/422/485	optional RS-232 or RS-422/485 Modbus RTU	
SD card Slot, USB host x 2	standard, one USB in the front, another USB in the bac	
Pulse input	optional DI card offering either logic or high frequence	
START / STOP key	to start / stop record and to turn off the display only, r	
Calibration correction	on-site calibration possible, or using handy features of O	
Multilingual	convenient for local users by offering 19 languages inc Danish, Italian, Polish, Russian, Dutch, Korean, Th	
PC software Historical Viewer+ Configuration	standard	
Extensive software Data Acquisition Studio	optional real-time monitoring	
Power supply	90-250VAC or 11-36VDC	
Outer dimensions (W x H x L mm)	144 x 144 x189	144 x 144 x189
Shorter mounting depth (mm)	171	171
DIN Panel cutout (W x H mm)	137 x 137	137 x 137
Protection	IP65 front, IP20 rear	
Operating temperature	0°C to 50°C	
Storage temperature	-30°C to 70°C	
Safety standards to be available	CE, cULus, RoHS	

	PR30
one, input numbers channels	big size and high-end one, good for sophisticated applications, for example power industry
	6, 12, 18, 24, 30, 36, 42, 48 channels
	·

JPt50, JPt100, JPt200, JPt500, JPt1000 (  $\alpha$  =0.003916) Ni1000 (  $\alpha$  =0.00617) mA, V, mV

12.1" TFT touch screen
1024 x 768
60,000 hrs

quick start possible later

Chinese(simplied, traditional), French, German, Spanish, Swedish, Brazil Portuguese, Czech, other languages negotiable

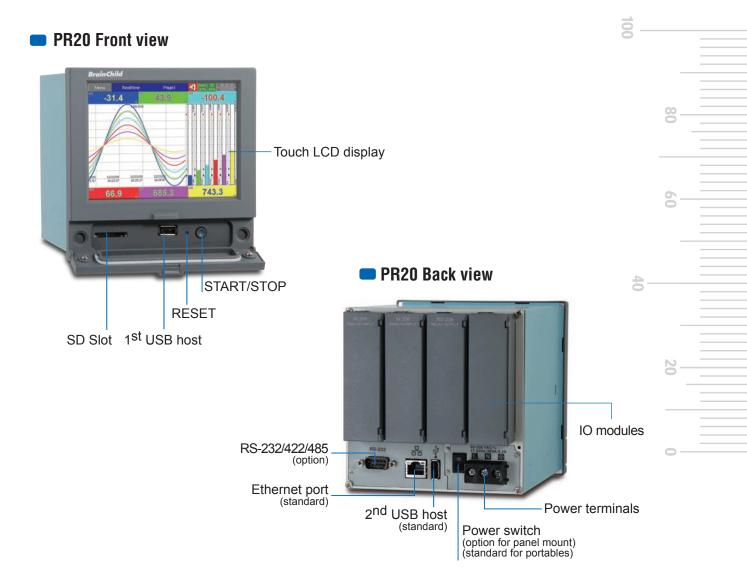
288 x 288 x 189
171
281 x 281

### **Overview**

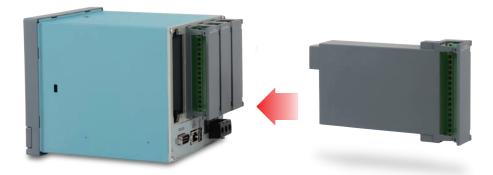
The new PR series paperless recorders are launched in full product range with outstanding specifications and features. PR series includes a low-cost PR10, a popular PR20 and a high-end PR30. Compared with the first generation VR series, PR series offers much more, for example recorders in 4.3" & 12.1" displays in addition to 5.6", 100 msec. sampling rate, external channels, batch, custom display, more strict FDA 21 CFR part 11, handwriting messages, SD slot, 2 USBs, pulse input, field calibration, Web Server, email, 19 languages, IP65, and yet in shorter depth 167mm.

## **Smart Mechanism**





### IO modules easy for expansion







Al206 6 Al (6 analog inputs)



DI206 6 DI (6 digital inputs)



AI203 3 AI (3 analog inputs)



RD233 3 relays + 3DI



RO206 6 relay outputs



AO206 6 AO (6 analog outputs)





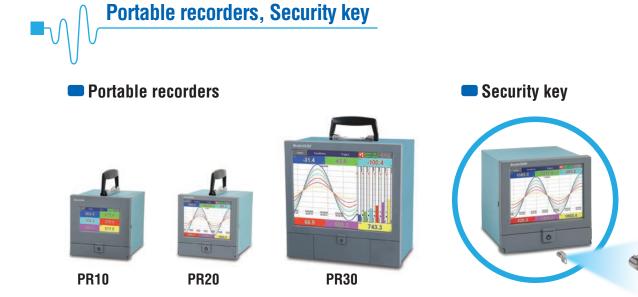
PR10 (4 Slots, up to 6 Al)



PR20 (4 Slots, up to 24 Al)



**PR30** (16 Slots, up to 48 Al)



## **Friendly functions in recorders**

mem SD 13:33:52 27% 78% 12/26/09 Configuration Configuration Channel - AI Save DI AO -DO Load Display Timer Clock Communication Default ⊶ Instrument Password: \*\*\*\*\*\*\* Demo: Enable Auto-Output System Information æ

Configuration in Tree Layout is easy for operation

Menu	Realtime	I	Dage1		mem SD 39% 90%		
AI1	533.5	ہ •c			637.8		
		1100.0	Ť	T <sup>1370.0</sup>			
		- 970.0	87	- 1206.0			
	-	- 840.0	32	- 1042.0			(FF
	-	- 710.0	27	- 878.0			bit
		- 580.0	12	- 714.0	dalle	back	No-
		- 450.0		- 550.0	done		
	-	- 320.0	<u>\$</u> .	- 386.0			
	-	- 190.0	8	- 222.0			
		- 60.0	►	- 58.0			
		70.0	•	106.0			
		-200.0		L-270.0			



### **Standard version of Firmware**

**Input name & Desc:** For each input name and its description, users may key in many characters because of its long available space.

Input											×
Press	ure										
1	2	3	4	5	6	7	8	9	0	-	=
q	w	е	r	t	y	u	i	ο	р	E	]
а	s	d	f	g	h	j	k	I	;	•	•
z	×	с	v	b	n	m	,	•	/	N	2
Shift	Caps						Back	space	<	>	
Co	ру	Pa	ste					OK Cancel			

100

60

40

Al: 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 6 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.

**Web Server:** It is available with all the PR series of recorders as a standard feature. When this feature is enabled on recorders, the user can access real-time trends, data, events and alarms whereever there is internet.

## **Friendly functions in recorders**



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	ר ו	Math1	mem SD 27% 78%	13:47:48 12/26/09
1 2 3 <mark>Se</mark>	lect		×	
-Type: Mat -Log -DataTy	Math Disable Math Counter Totalizer			
– Transfo – Decima – Range:	ОК	Cancel		

Math: It includes Math, Counter & Totalizer.

Math Expression is keyed in an easy way.

ath Expression			-	_	-	-	
Source AI1 AI2		Target	7	8	9	0	Clr
AI3 AI4 AI5		Source	4	5	6		BS
AI6 AI7 AI8	-		1	2	з	-	<
Operator SIN COS			,	*	/	+	>
EXP SQRT LN			(	)	^	⁰⁄₀	End
log Abs Pow	•			ок		Cance	el

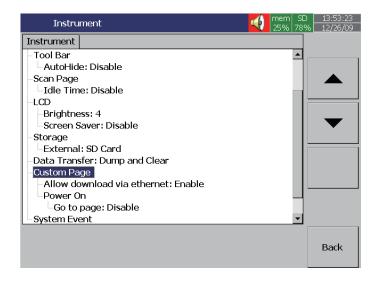
100

40

**External Channels:** Besides AI & DI inputs, PR recorders accept inputs through communication called External Channels. PR10, PR20 & PR30 can work External Channels maximum up to 24, 48 & 96 respectively.

	E×	terna	I			E	xt1		-	•	mem 26%		13:51:42 12/26/09	
1	2	3	4	5	6	7	8	9	10	11				
Na	me: E	xt1												
De	sc:													
–Ту	pe: Er	nable												ł
-Lo	g													ł
		ype: 2												٦
		ue Ra		-3276	8~3	2767							—	
		er: Ena												
		od: Ins												
		1: 100												٦
		Regis			4V) C	onver	sion						<b></b>	
		ype: 2						~					•	
		ula: ((i	M¥-R	L)/(RI	H-RL)	)*(S⊢	I-SL)-	SL						
	Range		~ ~											
		v(RL):		<b>DE O</b>										
	Fig	h(RH)	: 055	55.0	1									
						Сору		Past	e				Back	

**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 complied 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**



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

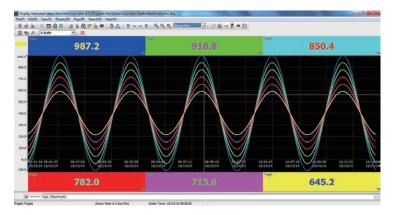
#### I. Configuration

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

el	AII														
1	1	2	3	4	5	6	7	8	9	10	11 1	2 13	14	15	
		Name	AI1				Desc				Type	Enable	-		
		Filter	Disab	e	•										
	Lo														
		Da	ita Typ				Value Range: -3276.8 ~ 3276.7								
ication			Trigge	Enat	ole				Method	Inst	nt	-			
nent rd			Speed	100	ms/Dot	•									
			Offse	t 0.0					Gain	1.0					
itput Info	Se	nsor		6 C 12 ( Sal)					- 200			-			
			Туре	Thern	nocouple	a J Type			•		Unit :	°C •			
			Range	-200.0	0~110	0.0			-						
	Ev	Events													
	No		pe s	etpoint	t	Log		Messag	e	Job1	Job2	Hystere	sis		
	1	H	- 1	340.0	Log A	larm			No	Action	No Acti	on 0.0			
	2	L		50.0	Log A	larm	•	1	No	Action	No Acti	on 0.0			
	3	HH	-	37.5	Log A	larm	•		No	Action	No Acti	on 0.0			
	4	LL		37.5	Log A	larm			No	Action	No Actio	on 0.0			
	5	Error	- 1	)	Log A	larm	-	-	No	Action	No Acti	on 0.0			

#### **II. Historical Viewer**

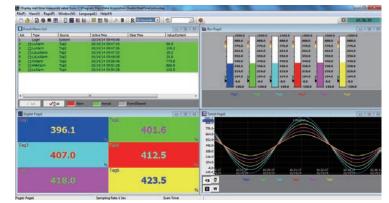
It can display historical trends, historical alarms, events, and then print it. It can search data by time, time period, tag, alarm, events and remarks. It also can export data in CSV format.



### **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**

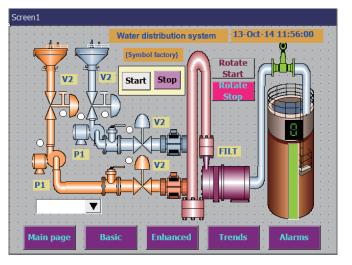
If Plus version 2 or 3 of Firmware is purchased, additional software Panel Studio is offered for editing custom display. The users can use it to edit specific displays on PC first, and then download it onto recorders. The custom edited displays will be additional pages to standard ones.

#### Edit it on PC





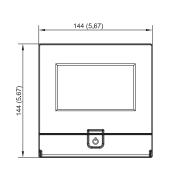
Download it onto recorders

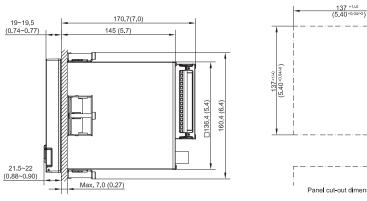


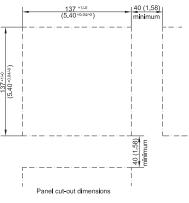
## Installation



PR10

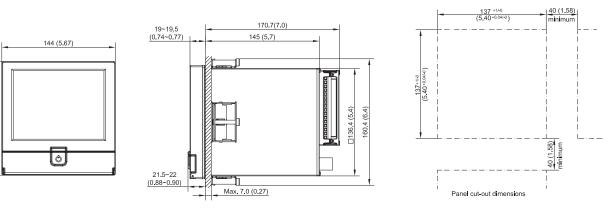




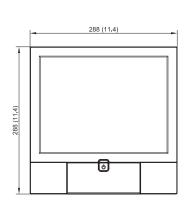


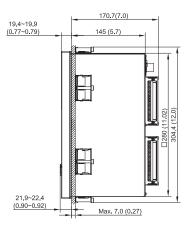
**PR20** 

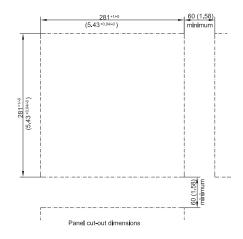
144 (5.67)



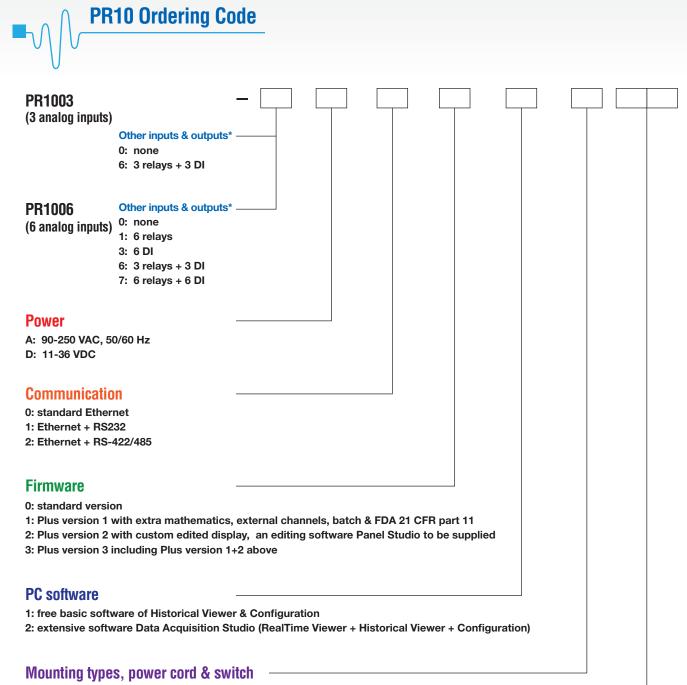
**PR30** 











#### 0: panel mount, no power cord, no power switch

- 1: panel mount, no power cord, power switch
- 2: portable, UL & CSA power cord, power switch
- 3: portable, VDE power cord, power switch
- 4: portable, SAA power cord, power switch
- 5: portable, BS power cord, power switch
- 6: portable, GB power cord, power switch

#### **Special options**

00: none S1: 16G SD card S2: 32G SD card

\*Note: DI - digital inputs

	R20 Ordering	Code							
PR2003 (3 analog inputs)		- [							
,	Other inputs & outputs* 0: none 6: 3 relays + 3 DI C: 3 relays + 3 DI + 6 AO								
PR2006 (6 analog inputs)	Other inputs & outputs* 1: 6 relays 3: 6 DI 5: 6 AO 6: 3 relays + 3 DI 7: 6 relays + 6 DI A: 6 relays + 6 AO B: 6 DI + 6 AO D: 6 relays + 6 DI + 6 AO								
PR2012 (12 analog inputs)	Other inputs & outputs* 0: none 1: 6 relays 2: 12 relays 3: 6 DI 4: 12 DI 5: 6 AO 6: 3 relays + 3 DI 7: 6 relays + 3 DI 7: 6 relays + 4 DI 8: 9 relays + 3 DI 9: 3 relays + 9 DI A: 6 relays + 6 AO B: 6 DI + 6 AO C: 3 relays + 3 DI + 6 AO								
PR2018 (18 analog inputs)	Other inputs & outputs* 0: none 1: 6 relays 3: 6 DI 5: 6 AO 6: 3 relays + 3 DI								
P <b>R2024</b> (24 analog inputs)	Other inputs & outputs* 0: none								
Power									
A: 90-250 VAC, 50/6 D: 11-36 VDC	60 Hz								
Communication Standard Etherner Ethernet + RS232 Ethernet + RS-422	t								
Firmware									
0: standard version 1: Plus version 1 wit 2: Plus version 2 wit	h extra mathematics, exteri h custom edited display, ar Iuding Plus version 1+2 abo	n editing softwa				d			
	re of Historical Viewer & Co e Data Acquisition Studio (F		er + Histor	rical Viewe	r + Confiç	juration)			
Mounting type	s, power cord & swi	tch							
0: panel mount, no 1: panel mount, no 2: portable, UL & C 3: portable, VDE po 4: portable, SAA po 5: portable, BS pov	power cord, no power switch power cord, power switch SA power cord, power switch wer cord, power switch wer cord, power switch ver cord, power switch	ch							

### **Special options**

00: none S1: 16G SD card S2: 32G SD card

\*Note: DI - digital inputs AO – analog retransmission output

### **PR30 Ordering Code** PR3006 (6 analog inputs) PR3012 (12 analog inputs) PR3018 (18 analog inputs) PR3024 (24 analog inputs) PR3030 (30 analog inputs) PR3036 (36 analog inputs) PR3042 (42 analog inputs) PR3048 (48 analog inputs) **Relay outputs** 0: none 1: 6 relays 2: 12 relays 3: 18 relays 4: 24 relays **Digital inputs** 0: none 1: 6 channels 2: 12 channels

3: 18 channels

**Analog outputs** 

0: none 6: 6 channels

#### Power

A: 90-250 VAC, 50/60 Hz D: 11-36 VDC

#### Communication

0: standard Ethernet 1: Ethernet + RS232 2: Ethernet + RS-422/485

#### **Firmware**

0: standard version

- 1: Plus version 1 with extra mathematics, external channels, batch & FDA 21 CFR part 11
- 2: Plus version 2 with custom edited display, an editing software Panel Studio to be supplied 3: Plus version 3 including Plus version 1+2 above

#### PC software

1: free basic software of Historical Viewer & Configuration 2: extensive software Data Acquisition Studio (RealTime Viewer + Historical Viewer + Configuration)

#### Mounting types, power cord & switch

- 0: panel mount, no power cord, no power switch
- panel mount, no power cord, power switch
  portable, UL & CSA power cord, power switch
  portable, VDE power cord, power switch
- 4: portable, SAA power cord, power switch
- 5: portable, BS power cord, power switch 6: portable, GB power cord, power switch

#### Special options

00: none S1: 16G SD card S2: 32G SD card



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