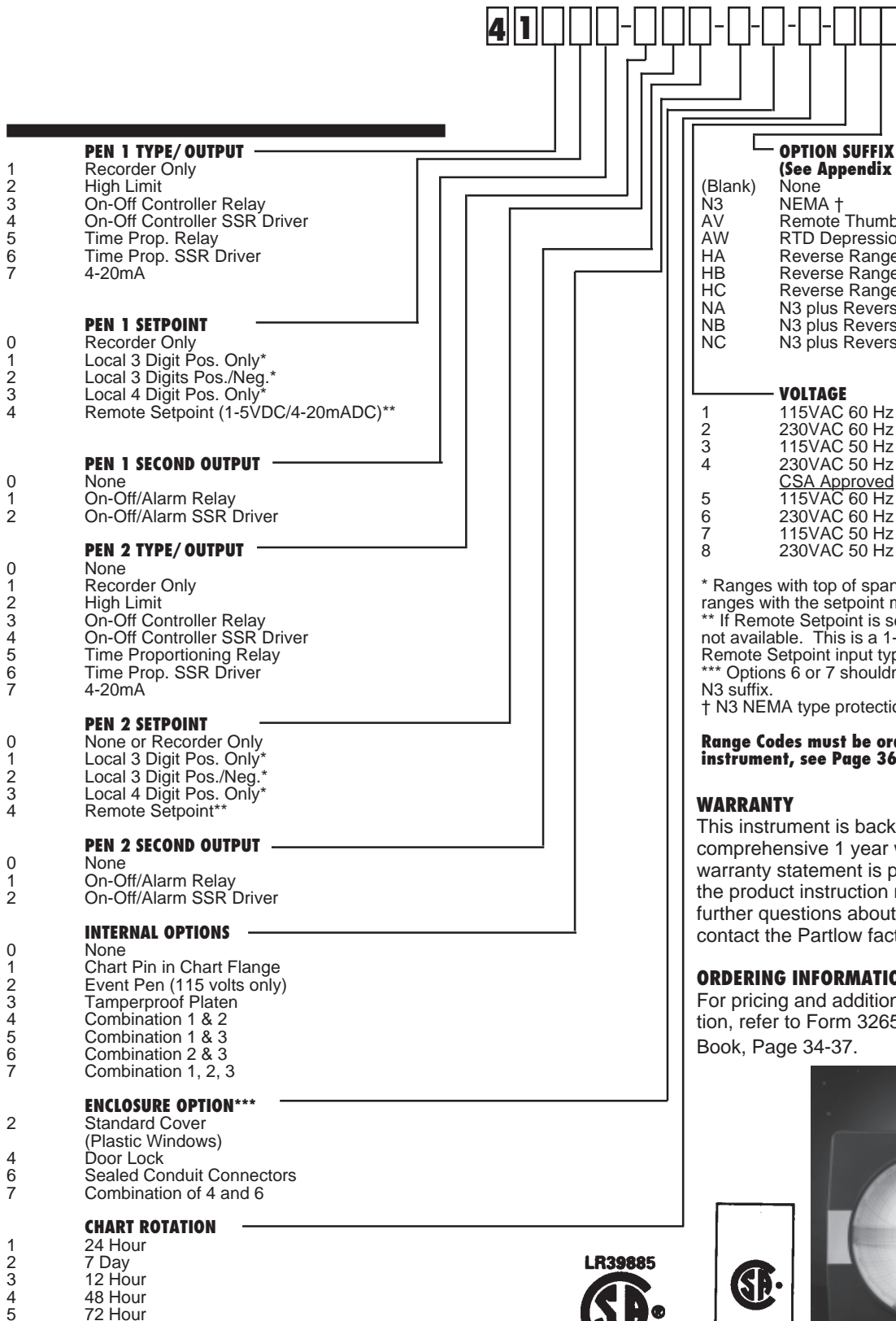


# ARC 4100 ANALOG RECORDER



### OPTION SUFFIX (See Appendix for explanation)

(Blank)	None
N3	NEMA †
AV	Remote Thumbwheel only
AW	RTD Depression on Pen 2
HA	Reverse Range Pen 1
HB	Reverse Range Pen 2
HC	Reverse Range Pen 1 & 2
NA	N3 plus Reverse Pen 1
NB	N3 plus Reverse Pen 2
NC	N3 plus Reverse Pen 1 & 2

### VOLTAGE

1	115VAC 60 Hz
2	230VAC 60 Hz
3	115VAC 50 Hz
4	230VAC 50 Hz
	CSA Approved
5	115VAC 60 Hz
6	230VAC 60 Hz
7	115VAC 50 Hz
8	230VAC 50 Hz

\* Ranges with top of span of 1000 are three digit ranges with the setpoint maximum of 999.  
 \*\* If Remote Setpoint is selected, Local Setpoint is not available. This is a 1-5VAC/4-20mADC Remote Setpoint input type.  
 \*\*\* Options 6 or 7 shouldn't be ordered without the N3 suffix.  
 † N3 NEMA type protection for wet environments.

**Range Codes must be ordered with this instrument, see Page 36 for complete listing.**

### WARRANTY

This instrument is backed by the Partlow comprehensive 1 year warranty. A complete warranty statement is published in the back of the product instruction manual. If you have further questions about warranties, please contact the Partlow factory.

### ORDERING INFORMATION

For pricing and additional ordering information, refer to Form 3265, Electronic Price Book, Page 34-37.



## DESCRIPTION

The ARC 4100 is a circular chart recording instrument capable of measuring, recording, and controlling up to two process variables from a variety of inputs. Applications include temperature (degrees F and C), pressure, relative humidity, pH, level, electrical measurement, flow, and others.

Control type, setpoint choice, alarm capability, chart speed, and other options are selected from the order matrix and are factory implemented. Proportioning units include full PID (Proportional, Integral, and Derivative) capability, with manual reset/ band positioning included.

The process input for each pen is configured at the factory, per the range ordered, and directly connects to either thermo-couple, RTD, mVDC, VDC, or mAADC inputs. Changes to input type are easily accomplished in the field. Inputs are factory calibrated and will require re-calibration if changed.

The ARC 4100 can operate with either 115VAC or 230 VAC line voltage at 50 or 60 Hz. The operating voltage is selected when ordering. The 230 VAC line voltage option includes soldered jumpers and can be configured to 115VAC line voltage when necessary.

The instrument is housed in a plastic enclosure suitable for panel or surface mounting.

RECORDERS

## SPECIFICATIONS

<b>Input</b>		Output 2	User configurable: On/Off Direct or Reverse Acting Control Output High or Low Process Alarm High or Low Deviation Alarm
Thermocouple types	J, K, T, R, and S.		
RTD	100 ohm(.00385 Ohm/Ohm/C), 2 or 3 wire. 20 ohm minimum span, 200 ohm maximum span.		Deviation Band Alarm - Open or Closed within the band.
Volts	0 VDC min, 10 VDC max, 1VDC min. span.		
Millivolts	0 mV min, 100mV max, 10mV min. span.		
Milliamps	4 to 20mAADC, accommodated with an internal 249 ohm jumper selectable shunt resistor	<b>Performance</b>	
Sensor Fault Detection	Jumper selectable for upscale or downscale sensor break. Only downscale break is available for milliamp inputs due to the use of a low ohm shunt resistor.	Measurement Error Limit	All input types: 1.0% of span.
		Ambient Temperature Error	0.04% of span per degree C deviation from 25 C
		Noise Rejection	Normal mode, 65dB minimum at 60Hz or greater. Common mode, 85dB minimum
		Line Voltage	24VAC maximum, 33VDC maximum. Standard: 115VAC -10% 50/60 Hz Optional: 230VAC -10% 50 or 60Hz- soldered jumper configurable to 115VAC.
<b>Remote Setpoint Input</b>		Power Consumption	25VA maximum
Volts	0 to 5VDC, 1 to 5VDC.	Operating Temperature	0 to 55 F, 32 to 131 F
Milliamps	0 to 20mA, 4 to 20mA, accommodated with an internal 249 ohm jumper selectable shunt resistor.	Storage Temperature	-40 to 65 C, -40 to 149 F
Potentiometric	Accommodated by three-wire connection. The unit provides +5VDC and ground to the potentiometer.	Humidity	0 to 90% RH, non condensing
		Dimensions	13.19" H x 15.13" W x 3.63" D
		Weight	20 pounds maximum
		Vibration	0.5 to 100Hz at 0.2g
<b>Outputs</b>		<b>Agency Approvals</b>	UL and CSA
Relay	SPDT 115VAC: 5.0 A Resistive; 1/8 HP or 250VA 230VAC: 2.5 A Resistive; 1/8HP or 250VA	<b>Record</b>	
SSR Driver	Open collector output Short circuit protected at 40mA maximum Provides 5VDC at 23mA or 3VDC at 30mA	Chart	10 inch circular
Current Output	4-20mAADC - 0 to 450 ohm grounded load maximum. Output span may exceed the stated span, but shall cover the minimum span of 4 to 20mA.	Chart Drive	AC synchronous motor
		Chart Rotation	24 Hr, 7 Day, 12 Hr, 48 Hr, 72 Hr.
		Pen Type	Disposable Fiber tip
Control/Alarm Outputs:		Pen Color	Pen 1 - Red Pen 2 - green
Output 1	High Limit On/Off, Time Proportioning, 4 to 20mA - user selectable Direct or Reverse Acting.		

## ARC 4100 AVAILABLE RANGES AND CODES

DEG	RANGE	RTD	J T/C	K T/C	T T/C	R T/C	S T/C
F	-150 to 350				301		
F	-100 to 100	001					
F	-100 to 200	061					
F	-50 to 50	041					
F	0 to 100	002					
F	0 to 200	003					
F	0 to 300	004	111				
F	0 to 400	023	103		304		
F	0 to 600	006	104				
F	0 to 800	024	106				
F	0 to 1000		107	213			
F	0 to 1200		112	203			
F	0 to 2000			205			
F	0 to 2500			206			
F	0 to 3000					501	
F	20 to 100	056					
F	20 to 120	057					
F	30 to 180	038					
F	30 to 230	028					
F	50 to 200	036					
F	60 to 180	027					
F	80 to 180	026	116				
F	100 to 250	042					
F	120 to 220	037					
F	130 to 190	060					
F	135 to 195	065					
F	150 to 350	040					
F	200 to 300	045					
F	1000 to 3000						554
F	150 to 25	050					
F	180 to 30	039					
F	230 to 30	029					
C	-100 to 100	022					
C	-100 to 200	046					
C	-50 to 50	043					
C	-50 to 75	055					
C	-35 to 70	059					
C	-30 to 70	058					
C	0 to 100	011					
C	0 to 110	030					
C	0 to 200	009	101		303		
C	0 to 300	010	115				
C	0 to 400	012	102				
C	0 to 600		114	201			
C	0 to 1000			202			
C	0 to 1200			208			
C	0 to 1500					503	553
C		031					

Unit	Input Range	Setpoint Range	Linear
mVDC	0 to 50	0 to 100	909
	0 to 100	0 to 100	803
	0 to 150	0 to 150	914
mADC	4 to 20	0 to 100	907
	4 to 20	0 to 200	924
	4 to 20	30 to 230	926
	0 to 20	0 to 100	925
	4 to 20	0 to 300	927
VDC	0 to 0.2	0 to 100	999
	0 to 0.5	0 to 100	922
	0 to 1.0	0 to 100	920
	0 to 4.0	0 to 100	923
	0 to 5.0	0 to 100	919
	0 to 10.0	0 to 100	921
	1 to 5.0	0 to 100	902

## UNIQUE DUAL RANGE AND NON-LINEAR CHARTS APPLICABLE TO THE ARC 4100

RANGE CODE	CHART RANGE	UNITS	4 HR	12 HR	24 HR	48 HR	72 HR	7 DAY	CHART PART NUMBER
003 044	0 to 200 & 50 to 0				X				002 138 96
003 044	0 to 200 & 50 to 0				DUAL RANGE CHART USED WITH "AW" SPECIAL ONLY			X	002 138 97
034	0 to 80	C	X						002 138 59
	0 to 80	C		X					002 138 60
	0 to 80	C			X				002 138 61
	0 to 80	C				X			002 138 62
	0 to 80	C					X		002 138 63
	0 to 80	C						X	002 138 64
	NON-LINEAR - RECORDER ONLY 1 DEG./DIV. FROM 0 TO 20 2 DEG./DIV. FROM 20 TO 80								
032	30 to 180	F	X						002 138 47
	30 to 180	F		X					002 138 48
	30 to 180	F			X				002 138 49
	30 to 180	F				X			002 138 50
	30 to 180	F					X		002 138 51
	30 to 180	F						X	002 138 52
	NON-LINEAR - RECORDER ONLY 1 DEG./DIV. FROM 30 TO 60 2 DEG./DIV. FROM 60 TO 180								
054	30 to 180	F			X				002 144 23
	NON-LINEAR - RECORDER ONLY 1 DEG./DIV. FROM 100 TO 180								
033	180 to 30	F	X						002 138 53
	180 to 30	F		X					002 138 54
	180 to 30	F			X				002 138 55
	180 to 30	F				X			002 138 56
	180 to 30	F					X		002 138 57
	180 to 30	F						X	002 138 58
	NON-LINEAR - REOCRDER ONLY 1 DEG./DIV. FROM 30 TO 60 2 DEG./DIV. FROM 60 TO 180								
026 or 116	80 to 180	F		X					002 144 06
	2 MINUTE TIME LINES BETWEEN 125 AND 165								
062 998	210 to 30 20 to 4	F mA*			X				002 144 07

\* Chart markings 8.0 to 3.5 pH