

## Warranty/Disclaimer

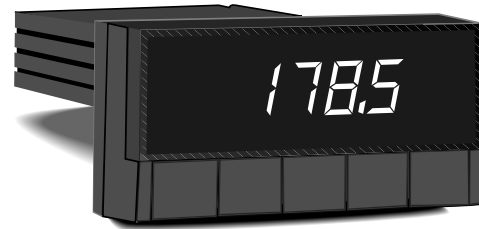
NEWPORT Electronics, Inc. warrants this unit to be free of defects in materials and workmanship for a period of one (1) year from the date of purchase. In addition to NEWPORT's standard warranty period, NEWPORT Electronics will extend the warranty period for one (1) additional year if the warranty card enclosed with each instrument is returned to NEWPORT.

If the unit should malfunction, it must be returned to the factory for evaluation. NEWPORT's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by NEWPORT, if the unit is found to be defective it will be repaired or replaced at no charge. NEWPORT's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of NEWPORT's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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CONDITIONS: Equipment sold by NEWPORT is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, or used on humans, or misused in any way, NEWPORT assumes no responsibility as set forth in our basic WARRANTY / DISCLAIMER language, and additionally purchaser will indemnify NEWPORT and hold NEWPORT harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

# NEWPORT



## MODEL 305-P and 305-E

### 3 1/2 DIGIT MINI-SIZE PROCESS METER (305-P) WITH ISOLATED EXCITATION (305-E)

## SPECIFICATIONS

### Analog Input

Range	4-20 mA	0-0.2 V	1-5 V	0-10 V	0-100 V
Input resistance	13 $\Omega$	1 M $\Omega$	1 M $\Omega$	1 M $\Omega$	1 M $\Omega$
Bias current	50 pA	50 pA	10 pA	5 pA	1 pA
Maximum input	55 mA	250 Vp	250 Vp	250 Vp	250 Vp

### Noise Rejection

NMR, sig hi to sig lo	56 dB, 50/60 Hz
CMR, sig lo to pwr gnd	120 dB, DC to 60 Hz
CMV, sig lo to pwr gnd	1500 Vp per HV test; 354 Vp per IEC spacing

### Accuracy at 25°C / Display

Maximum error	$\pm 0.05\%$ of reading $\pm 1$ count
Display range	$\pm 1999$
Span adjustment	0-2000 counts
Span tempco	$\pm 0.02\%$ of reading/ $^{\circ}\text{C}$
Zero adjustment	-1500 to +5000 counts with zero input
Zero tempco	$\pm 0.01\%$ of offset $\pm 0.2$ counts/ $^{\circ}\text{C}$
Full-scale step response	1 second
Warmup	30 minutes
Reading rate	2.5 / second
Overrange indication	Three least-significant digits blank

### Power Options

Input power	24, 100, 115 or 230 Vac $\pm 15\%$ , 49-63 Hz, 305-P and 305-E +5 or 7-32 Vdc, non-isolated for 305-P option only
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### Transmitter Excitation Supply (305-E ONLY)

Output voltage	User Selectable for 10 or 24 Vdc
Output current, max	30 mA @ 10 V, 20 mA @ 24 V
Line regulation	$\pm 0.01\%$ / V of ac power
Load regulation	$\pm 0.5\%$
Tempco	$\pm 0.02\%$ / $^{\circ}\text{C}$
Ripple at 50/60 Hz	$\pm 0.01\%$

### Environmental

Operating temperature	32 to 140 $^{\circ}\text{F}$
Storage temperature	-40 to 185 $^{\circ}\text{F}$
Relative humidity	95% at 104 $^{\circ}\text{F}$ (non-condensing)

### Mechanical

Bezel	01.89" x 3.78" (48 x 96 mm)
Depth Behind the Bezel	4.32" (110 mm) w/ connectors
Panel Cutout 1/8 DIN	01.72" H x 3.62" W (45 x 92 mm)
Weight	8 ounces (227 grams)
Case Material	94V-1 UL-rated thermoplastic
Panel Thickness	Minimum: 0.03" (0.76 mm) Maximum: 0.25" (6.35 mm)

## Return Requests/Inquiries

Direct all warranty and repair requests/inquiries to the NEWPORT Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO NEWPORT, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM NEWPORT'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting NEWPORT:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult NEWPORT for current repair charges. Have the following information available BEFORE contacting NEWPORT:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

NEWPORT's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering. NEWPORT is a registered trademark of NEWPORT Electronics, Inc.

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It is our policy to comply with all applicable safety and EMC/EMI regulations worldwide. We are constantly pursuing certification of our products to the European New Approach Directives. We will add the CE mark to every appropriate device upon certification.

This device is marked with the international caution symbol. It is important to read the Setup Guide before installing or commissioning this device as it contains important information relating to safety and EMC.

1-800-6397678®  
1-800-NEWPORT

Newport Electronics, Inc.

2229 South Yale Street • Santa Ana, CA • 92704 • U.S.A.

TEL: (714) 540-4914 • FAX: (203) 968-7311

Toll Free: 1-800-639-7678 • www.newportUS.com • e-mail: info@newportUS.com

ISO 9001 Certified

Newport Technologies, Inc.

976 Berger • Laval (Quebec) • H7L 5A1 • Canada

TEL: (514) 335-3183 • FAX: (514) 856-6886

Toll Free: 1-800-639-7678 • www.newport.ca • e-mail: info@newport.ca

Newport Electronics, Ltd.

One Omega Drive • River Bend Technology Centre

Northbank, Irlam • Manchester M44 5BD • United Kingdom

Tel: +44 161 777 6611 • FAX: +44 161 777 6622

Toll Free: 0800 488 488 • www.newportuk.co.uk • e-mail: sales@newportuk.co.uk

Newport Electronics B.V.

Postbus 8034 • 1180 LA Amstelveen • The Netherlands

TEL: +31 20 3472121 • FAX: +31 20 6434643

Toll Free: 0800 0993344 • www.newport.nl • e-mail: info@newport.nl

Newport Electronics spol s.r.o.

Frystatska 184, 733 01 Karviná • Czech Republic

TEL: +420 59 6311899 • FAX: +420 59 6311114

Toll Free: 0800-1-66342 • www.newport.cz • e-mail: info@newport.cz

Newport Electronics GmbH

Daimlerstrasse 26 • D-75392 Deckenpfronn • Germany

TEL: 49 7056 9398-0 • FAX: 49 7056 9398-29

Toll Free: 0800 / 6397678 • www.newport.de • e-mail: sales@newport.de

Newport Electronique S.A.R.L.

11, rue Jacques Cartier • 78280 Guyancourt • France

TEL: +33 1 61 37 29 00 • FAX: +33 1 30 57 54 27

Toll Free: 0800 466 342 • www.newport.fr • e-mail: sales@newport.fr

Mexico and Latin America

FAX: 001 (203) 359-7807

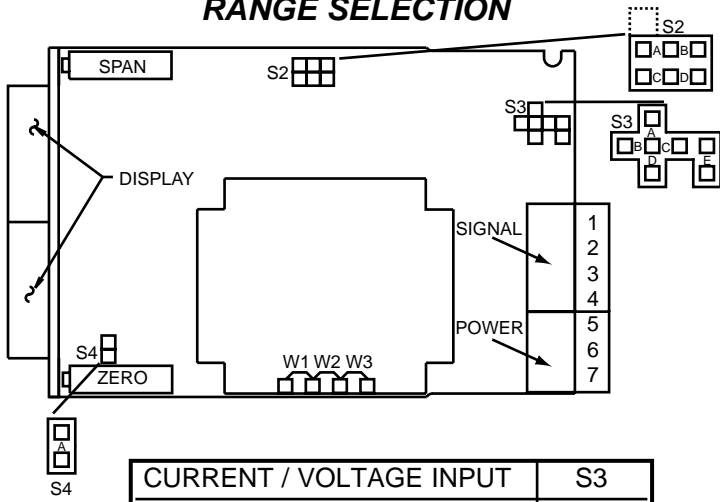
En Español: 001 (203) 359-7803

NEWPORTnet™ On-Line Service  
www.newportUS.com

Internet e-mail  
info@newportUS.com

NEWPORT Electronics, Inc.

## RANGE SELECTION



CURRENT / VOLTAGE INPUT	S3
4-20 mA	D, E
0-0.2 V dc	E
1-5 V dc	A
0-10 V dc	B
0-100 V dc	C

EXCITATION VOLTAGE (305-E only)	S2	S4
10 V, standard internal reference	B, D	A
24 V, standard internal reference	B, D	-
10 V, excitation reference	A, C	A

Voltage operation was configured per customer order.  
115 and 230 Vac operation use the same transformer and may be reversed with simple wiring installation.

TRANSFORMER #	AC VOLTAGE	INSTALL	REMOVE
48131	115	W1, W3	W2
48131	230	W2	W1, W3

## ELECTRICAL CONNECTIONS

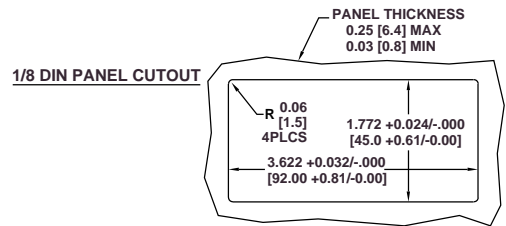
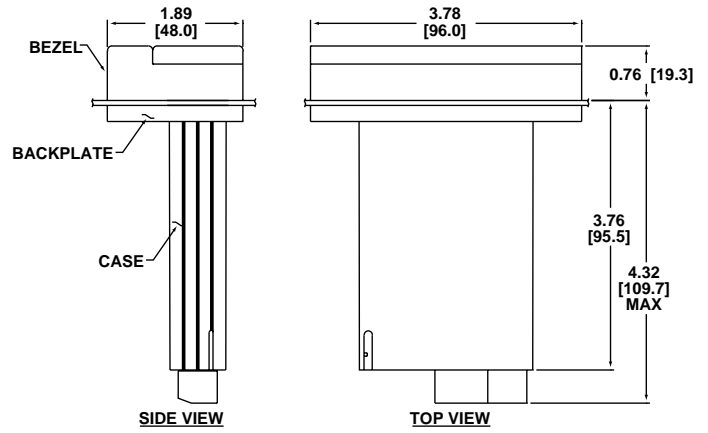
POWER AND SIGNAL INPUT			
~ AC POWER		= DC POWER	
305-E	305-P	305-E	305-P
1 SIG HI (+S)	SIG HI (+S)	SIG HI (+S)	SIG HI (+S)
2 SIG LO (-S)	SIG LO (-S)	SIG LO (-S)	SIG LO (-S)
3 + Exc	Hold	+ Exc	Hold
4 - Exc	Digital Return	- Exc	Digital Return
5 Earth GND ⊕	Earth GND ⊕	-DC (-)	-DC (-)
6 Neutral (N)	Neutral (N)	+DC (+)	-DC (+)
7 Line (L)	Line (L)	N/C	N/C

## AVAILABLE MODELS

DESCRIPTION	PART #
Field selectable for 4-20 mA, 0-199.9 mV 1-5 V dc, 0-10 V dc, 0-100 V dc input	305-P
305-P with sensor excitation output	305-E

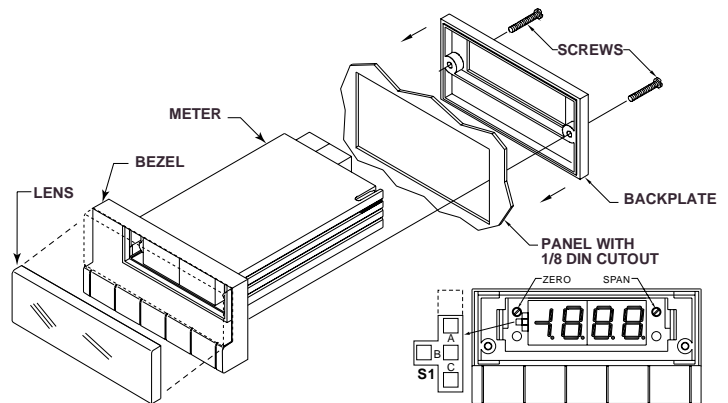
OPTIONS	PART #
230 V ac power input	Add suffix "-C1"
100 V ac power input	Add suffix "-C5"
24 V ac power input	Add suffix "-C8"
5 V dc power input (305-P only)	Add suffix "-C3"
7-32 V dc power input (305-P only)	Add suffix "-C2"
Green LED display (instead of Red)	Add suffix "-G"

## DIMENSIONS



## INSTALLATION

1. Remove the 2 phillips screws from behind the display (you don't have to go inside the meter) holding the rectangular backplate to the meter. Remove the backplate and set aside.
2. Cut or punch a hole in the panel where you want the meter to go. The panel can be as thick as 0.25" (6.4mm) to as thin as 0.03" (0.8mm).
3. Insert the meter into the panel cutout.
4. From the rear of the panel, slide the backplate over the case (smooth side out).
5. Install the 2 phillips screws to secure the meter in 1/8 DIN mount. Center the meter in hole prior to tightening screws.



Decimal Point	S1
1.999	A
19.99	B
199.9	C
1999	Store jumper above A

## CALIBRATION

1. Apply the minimum current or voltage to the signal input. Adjust the zero pot for the minimum display reading  $\pm 1$  count.
2. Apply the maximum current or voltage to the signal input. Adjust the span pot for the maximum display reading  $\pm 1$  count.
3. Repeat steps 1 and 2 until  $\pm 1$  count desired reading. Reinstall the lens.