

160 Series



160



165



160 Series 5 And 13 Amp General Purpose Plug-in Relay

General purpose relay that controls electrical loads

Features

- Class F Coil Insulation System for 155° C Total Temperature
- Coil Molded in Rynite® PET for environmental protection
- Unique armature stop maintains adjustment
- Fine wire gauge coils are skined for integrity

Typical Applications

- Industrial Machine Control
- Energy Management Systems
- Control Panels

Models

- 160:** 5 Amp Open Frame
 - 161:** 13 Amp Open Frame
 - 165:** 5 Amp Covered Plug-in
 - 166:** 13 Amp Covered Plug-in
 - 165F:** 5 Amp Flanged Cover w/QC Terminals
 - 166F:** 13 Amp Flanged Cover w/QC Terminals
 - 166E:** Addition of Blowout Magnets - For Higher DC Ratings
- Other Suffixes Available: A-Indicator Lamp, P-Printed Circuit Terminals, TM-Top Mounted Cover

Contact Data	
Configuration	Thru 3PDT
Materials	5 Amp: 1/8" Diameter Moveable Fine Silver 3/16" Diameter Stationary Fine Silver 13 Amp: 3/16" Diameter Moveable Silver Cadmium Oxide 3/16" Diameter Stationary Fine Silver Gold Flash is Standard on all Contacts Gold Diffused Available on Special Order - Min. Qty. Req'd
Contact Ratings	
Model	Pole Configuration
160/165	Thru 3PDT
161/166	Thru 3PDT
166E (w/ Blowout Magnet)	Thru DPDT
	Form X, Y, W, and Z
UL Ratings*	
160/165	5 Amp or 1/8 HP at 120 VAC 5 Amp or 1/4 HP at 277 VAC 2 Amp at 600 VAC 5 Amp at 28 VDC
161/166	13 Amp or 1/3 HP at 120 VAC 13 Amp or 1/2 HP at 277 VAC* 10 Amp at 28 VDC 1 HP at 277 VAC - 3 phase 3 Amp or 3/4 HP at 600 VAC 12 FLA, 35 LRA at 15 VAC
166E (w/ Blowout Magnet)	3 Amp at 150 VDC 30,000 cycles 10 Amp at 150 VDC 100,000 cycles
Expected Life	Electrical at Rated Load (Min) 100,000 Operations Mechanical Life 10,000,000 Operations
Dielectric Strength	800 VRMS, 60 Hz Between Contacts 2200 VRMS, 60 Hz Between Other Elements
Agency Approvals	UL Recognized File No. E37066

*3 Pole devices rate at 6-2/3 Amp when switching greater than 150 VAC, unless polarity is the same on all poles

All dimensions in Inches

Rynite® is a registered trademark of DuPont

Specifications subject to change without notice

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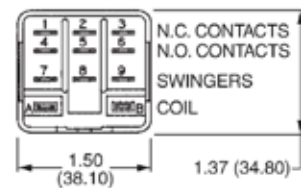
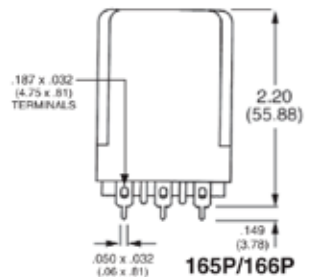
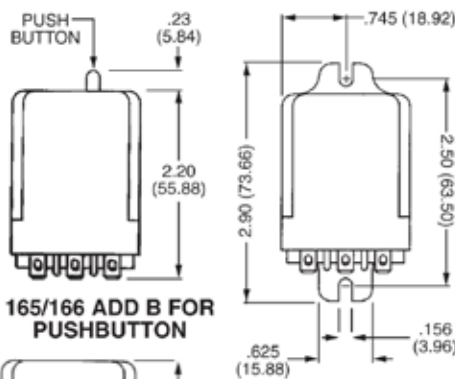
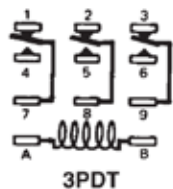
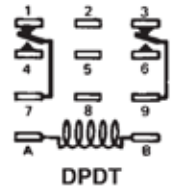
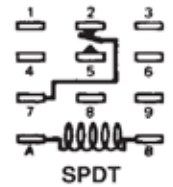
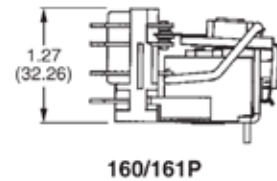
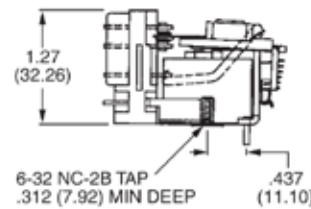
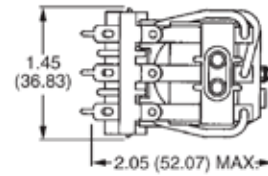
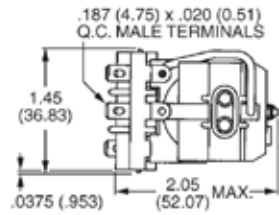
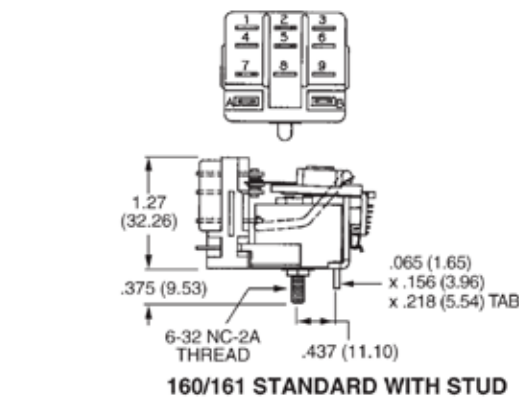
Coil Data			
	Nominal Voltage	Resistance In Ohms ± 10%	Nominal Coil Power
AC Coils Single Pole Units	6 VAC	5.	2.0 VA
	12 VAC	20	
	24 VAC	80	
	48 VAC	315	
	120 VAC	2025	
	240 VAC	8000	
AC Coils 2 & 3 Pole Units	6 VAC	4.5	2.2 VA
	12 VAC	18	
	24 VAC	72	
	48 VAC	285	
	120 VAC	1850	
	240 VAC	7200	
DC Coils 1-3 Pole Units	6 VDC	30	1.2 W
	12 VDC	120	
	24 VDC	480	
	48 VDC	1850	
	110 VDC	10,000	
Coil Voltages	AC: Up to 277 Volts/60 Hz DC: Up to 125 Volts		
Coil Treatment	Molded Rynite® PET Std. Class F		
Insulation Resistance	100 Megohms Minimum		
UL Insulation System File No.	E74443 S155D 155°C Total Temperature Std. (Covers S105 Class A and S130D Class B Requirements)		
Operate Data			
Pick Up (at 25°C)	AC Volts 85% or Less of Nominal DC Volts 75% or Less of Nominal		
Operate Time	Approx. 15 Milliseconds		
Release Time	Approx. 15 Milliseconds		
Environmental Data			
Operating Ambient	AC: -45° to 55° DC: -45° to 70°C		
Coil Temperature Rise	(25°C Ambient - Continuous Duty) AC: 45°C Approx. @ 60Hz - Use at 50 Hz will cause slight increase in Coil Rise DC: 25°C Approx.		
Mechanical Data			
Terminals	All Versions (Except P suffix) .187" x .020 Quick Connect/Solder P suffix version Printed Circuit Pins		
Cover	Clear Polycarbonate - Flammability Rating 94V2		
Weight	All Versions Approx. 3.0 oz. (85 g)		

160 Series

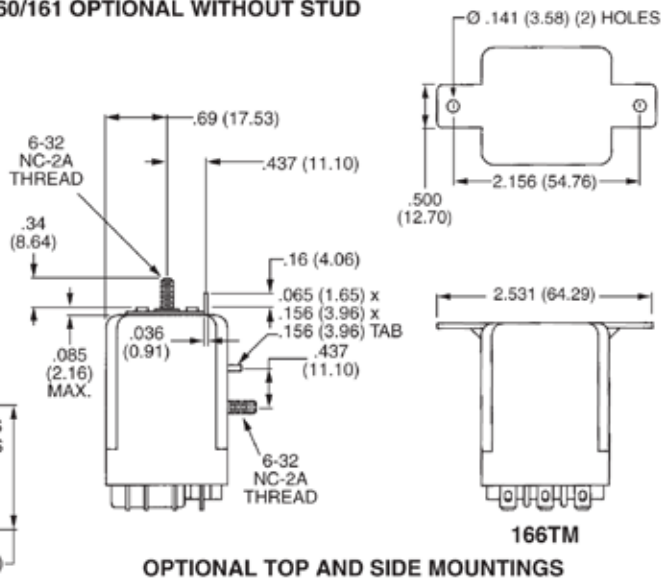
Dimensional View For Reference Only

Units: Inches [mm]

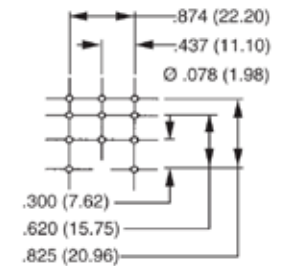
Schematics



160/161 OPTIONAL WITHOUT STUD



OPTIONAL TOP AND SIDE MOUNTINGS



MOUNTING DIMENSIONS FOR PRINTED CIRCUIT TERMINALS

160 Series



Ordering Information

5 Amp Part Numbers

Model	Pole Config.	AC Coils			DC Coils		
		24 VAC	120 VAC	240 VAC	12 VDC	24 VDC	110 VDC
165	SPDT	20323-82	20323-84	20323-85	20326-81	20326-82	20326-84
	DPDT	20324-82	20324-84	20324-85	20327-81	20327-82	20327-84
	3PDT	20325-82	20325-84*	20325-85	20328-81	20328-82	20328-84
165F	SPDT	20542-82	20542-84	20542-85	20548-81	20548-82	20548-84
	DPDT	20543-82	20543-84	20543-85	20549-81	20549-82	20549-84
	3PDT	20544-82	20544-84	20544-85	20550-81	20550-82	20550-84

13 Amp Part Numbers

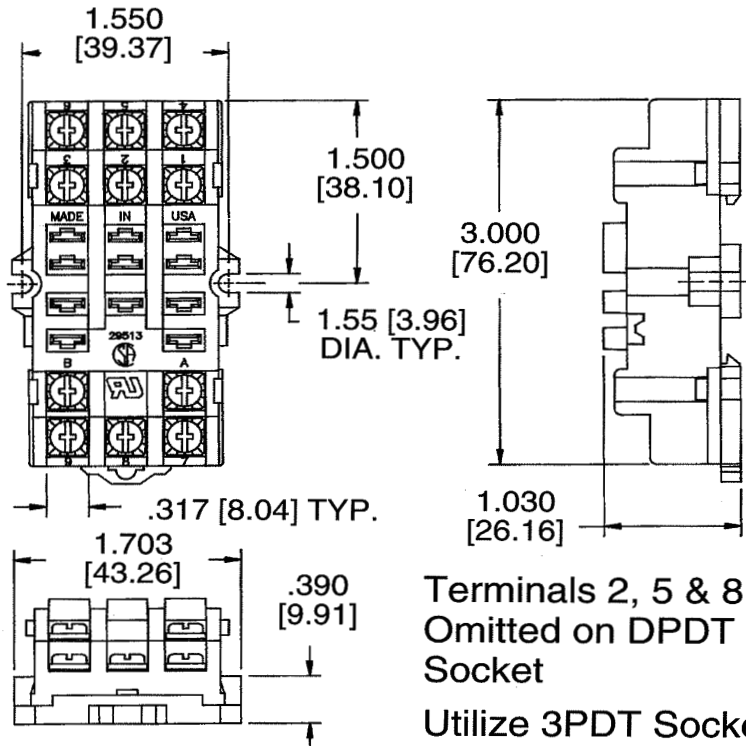
161	SPDT	20300-82	20300-84*	20300-85	20303-81	20303-82	20303-84
	DPDT	20301-82	20301-84*	20301-85	20304-81	20304-82	20304-84
	3PDT	20302-82	20302-84	20302-85	20305-81	20305-82	20305-84
166	SPDT	20306-82	20306-84	20306-85	20309-81	20309-82	20309-84
	DPDT	20307-82*	20307-84*	20307-85*	20310-81*	20310-82*	20310-84
	3PDT	20308-82*	20308-84*	20308-85*	20311-81*	20311-82*	20311-84*
166A	SPDT	20379-82	20379-83	20379-84	20382-81	20382-82	20382-83
	DPDT	20380-82	20380-83	20380-84	20383-81	20383-82	20383-83
	3PDT	20381-82*	20381-83*	20381-84	20384-81	20384-82	20384-83
166F	SPDT	20545-82	20545-84	20545-85	20551-81	20551-82	20551-84
	DPDT	20546-82*	20546-84*	20546-85	20552-81	20552-82	20552-84
	3PDT	20547-82*	20547-84*	20547-85	20553-81	20553-82	20553-84

(*) Normally Stocked

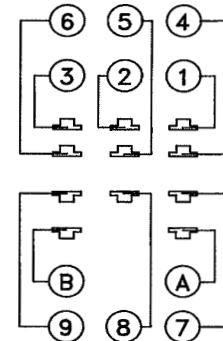
Non stocked items require a minimum order

160 Series

DIN Rail Mounting Sockets



Terminal Location



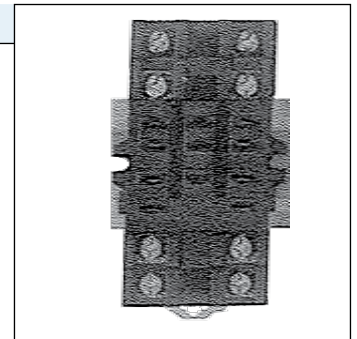
Top View

Terminals 2, 5 & 8 Omitted on DPDT Socket

Utilize 3PDT Socket for Single Pole Applications

Part Number	Rating	Configuration	Description
20982-81	10 Amps at 300 VAC	DPDT	8 TERMINAL SOCKET

- Din Rail or surface mount
- Pressure clamp screws nickel plated 6-32
- UL Recognized File E66240
- CSA Certified File LR29513M36
- Accepts .187" Terminals



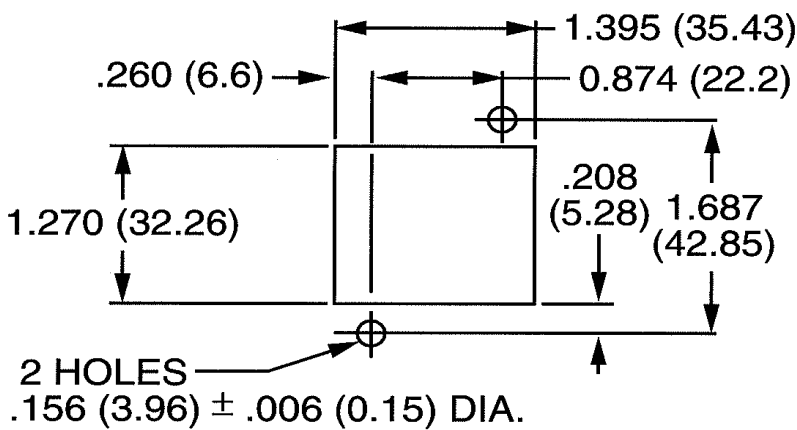
Part Number	Rating	Configuration	Description
20982-82*	10 Amps at 300 VAC	3PDT	11 TERMINAL SOCKET

- Din Rail or surface mount
- Pressure clamp screws nickel plated 6-32
- UL Recognized File #E66240
- CSA Certified File LR29513M36
- Accepts .187" Terminals

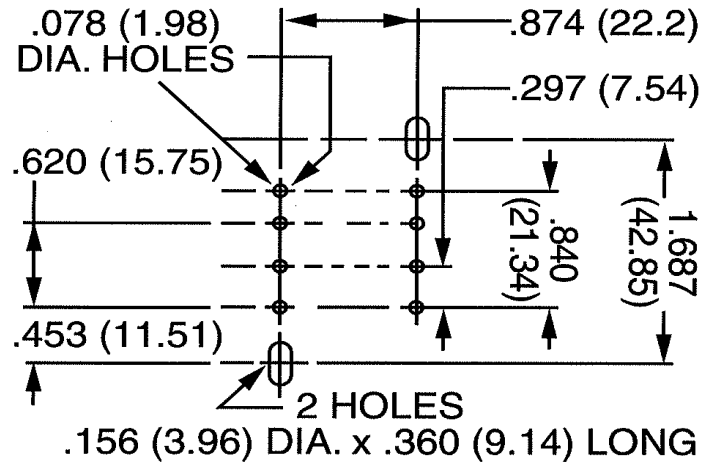


160 Series

Back Connecting Sockets



Tab Type Mounting



PC Mounting

Part Number	Rating	Configuration	Description
20312-80	10 Amps at 300 VAC	SPDT	160 SERIES SOLDER TYPE
20312-81*		DPDT	160 SERIES SOLDER TYPE
20312-82*		3PDT	160 SERIES SOLDER TYPE

- Surface Mount - Back Connect
- Accepts .187" Terminals
- UL Recognized File #E66240
- CSA Certified File LR29513M36



Part Number	Rating	Configuration	Description
20313-80	10 Amps at 300 VAC	SPDT	160 SERIES .187" QUICK CONNECT TYPE
20313-81		DPDT	160 SERIES .187" QUICK CONNECT TYPE
20313-82*		3PDT	160 SERIES .187" QUICK CONNECT TYPE

- Surface Mount - Back Connect
- Accepts .187" Terminals
- UL Recognized File #E66240
- CSA Certified File LR29513M36



160 Series

Sockets

Part Number	Rating	Configuration	Description
20314-80	10 Amps at 300 VAC	SPDT	160 SERIES PRINTED CIRCUIT TYPE
20314-81		DPDT	160 SERIES PRINTED CIRCUIT TYPE
20314-82*		3PDT	160 SERIES PRINTED CIRCUIT TYPE

- Surface Mount - Back Connect
- Accepts .187" Terminals
- UL Recognized File #E66240
- CSA Certified File LR29513M36



Part Number	Rating	Configuration	Description
20395-80	10 Amps at 300 VAC	SPDT	160 SERIES DEEP BARRIER TYPE WITH .187" Q.C.
20395-81		DPDT	160 SERIES DEEP BARRIER TYPE WITH .187" Q.C.
20395-82		3PDT	160 SERIES DEEP BARRIER TYPE WITH .187" Q.C.

- Surface Mount - Back Connect
- Accepts .187" Terminals
- UL Recognized File #E66240
- CSA Certified File LR29513M36



Hold Down Springs

Part Number	Description
20902-03*	Din Rail/Surface Mount Hold Down Spring
20902-00*	Back Connecting Hold Down Spring

