

WHITE-RODGERS DC PRODUCTS

Type 120

solenoid

FEATURES

- Water resistant
- Capable of handling low and high current requirements
- Versatile mounting and termination

ENGINEERING DATA

Contacts

- Pole form—SPNO
- Material—silver alloy or copper
- Termination— $\frac{5}{16}$ "-24 UNF-2A thread or $\frac{1}{4}$ "-20 UNC-2A thread

RATINGS				
Volts DC	Cont.	Inrush	Elec. Life	Contact Material
12 VDC	80A	400 A	10,000	Copper
12 VDC	100 A	400 A	50,000	Silver Alloy
36 VDC	100 A	400 A	25,000	Silver Alloy

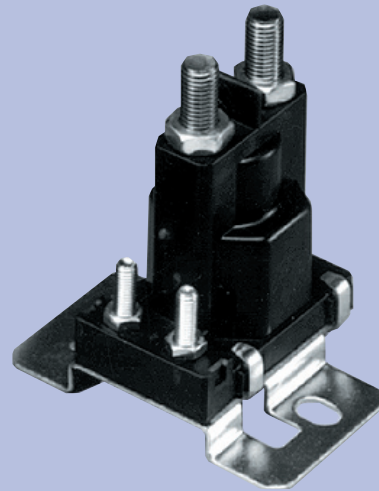
Consult factory for additional ratings.

Coils

- Voltage—6 VDC through 48 VDC
- Termination—#8-32 UNC-2A, #10-32 UNF-2A thread or $\frac{1}{4}$ " quick-connect
- Power (approximate)
Continuous 8.1 watts
Intermittent 14.4 watts
- Connections
 1. Coil isolated (two terminals)
 2. One coil lead grounded to bracket (one terminal)
- Operate (77°F/25°C)
67% of nominal (Int.)
75% of nominal (Cont.)
110% max. safe of nominal coil voltage

COIL DATA		
Volts DC	Resistance in Ohms	
	Intermittent	Continuous
6	*	4.0
12	6.0	16.0
14	*	26.0
15	9.4	23.0
24	24.0	64.0
36	54.0	160.0
48	*	256.0

* SPECIAL COILS AVAILABLE UPON REQUEST



GENERAL DATA

Dielectric Strength

- 500 Volts

Temperature Range

- -20°F to 150°F (-28.9°C to 65.6°C) (Intermittent)
- -20°F to 120°F (-28.9°C to 48.9°C) (Continuous)

Mechanical Life (no load)

- 100,000 cycles

Mounting Position

- Recommended mounting is coil terminals up or horizontal

Weight (approximate)

- SPNO—6.0 oz.

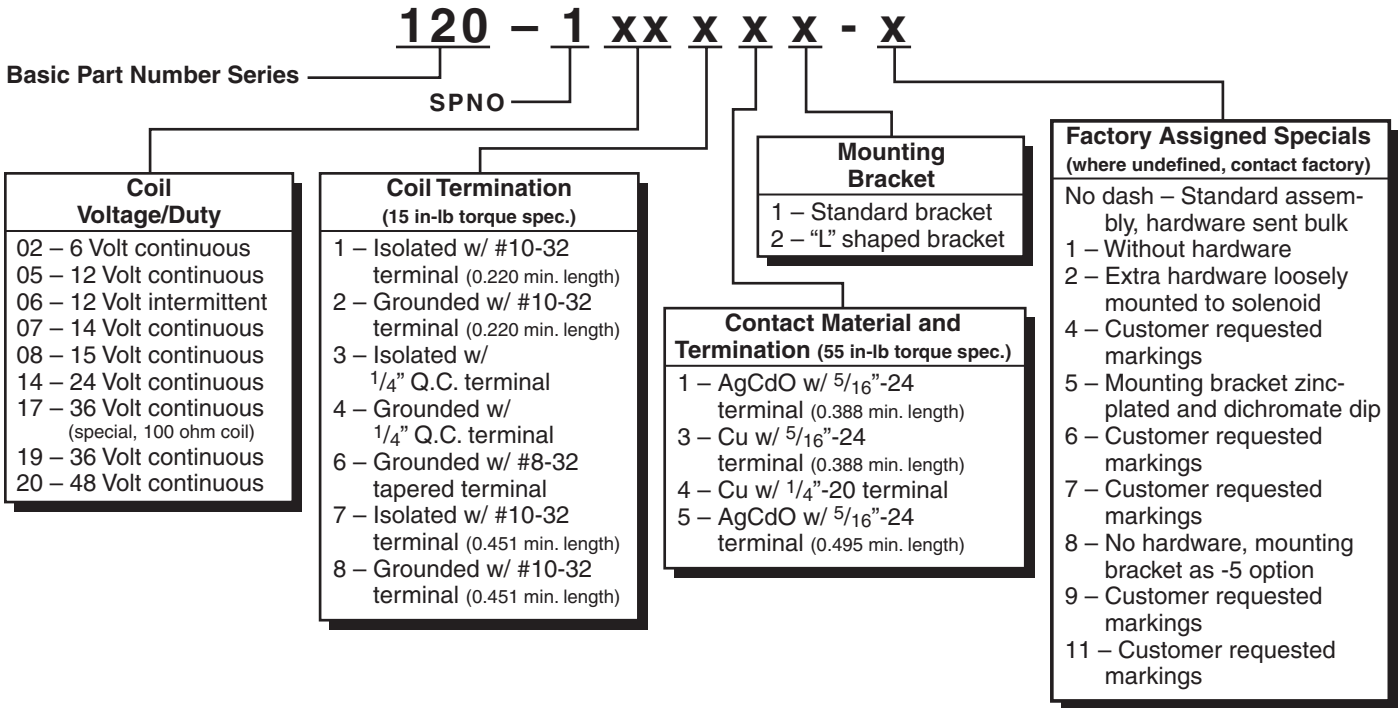
Duty Cycle

- Continuous
- Intermittent—30 seconds "on" maximum and minimum 6 minutes "off"

Hardware Torque Specification

- Contact Terminal: 45-55 inch-lbs.
- Coil Terminal: 12-18 inch-lbs.

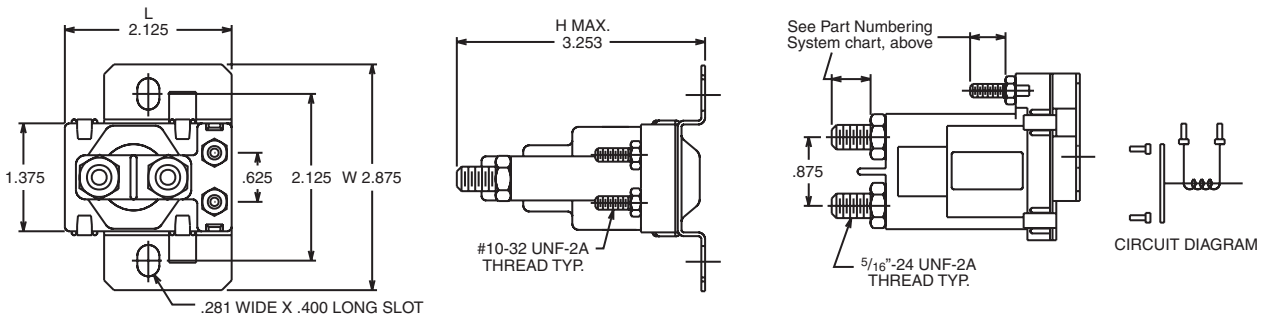
TYPE 120 PART NUMBERING SYSTEM



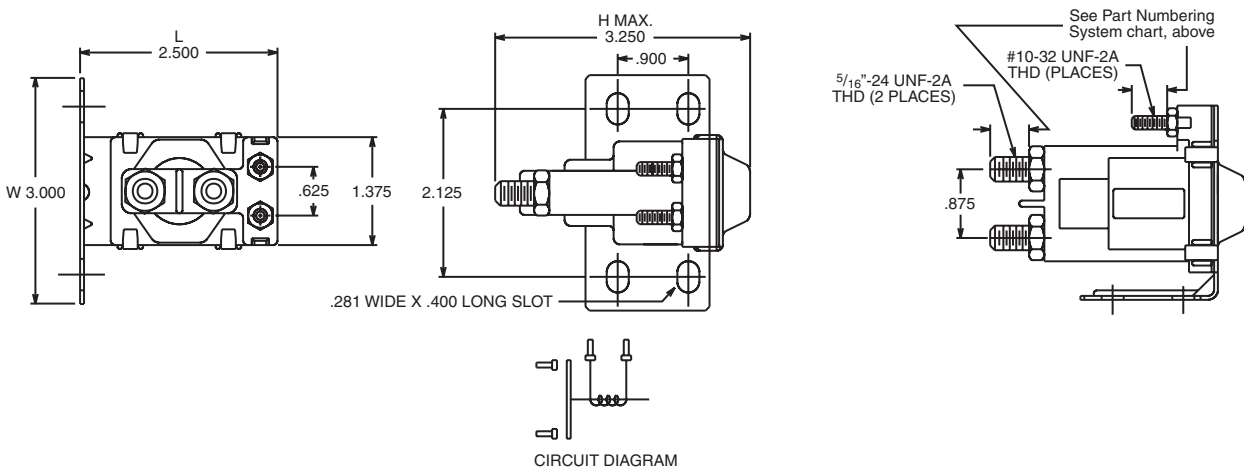
APPLICATION NOTES

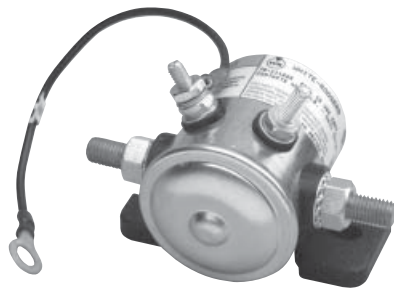
- Not all part number combinations are available. Please contact your Sales Representative for available part numbers.
- Solenoids applied in battery charging circuits should be protected from higher than rated voltage during charging. The service life may be affected by this condition and the solenoid may or may not operate the circuit as intended.
- Circuits should be designed to provide safe operation should the solenoid fail in either the open or closed position.
- A back-up wrench must be used to hold the bottom nut stationary during installation.

Terminal Type 4 - Isolated Coil (STD Bracket)



Terminal Type 4 - Isolated Coil (L Bracket)





Type 70 SPNO

WARNING – FIRE HAZARD

Must be installed in a dry and protected place. Failure to protect solenoid from water and other contaminants could result in Fire, Property Damage, Serious Personal Injury, or Death.

TYPE 70 SPNO

Single Pole Normally Open Contact

Case is Dust Resistant and Isolated from Ground

SPECIFICATIONS

Dimensions 2.47" L x 3.48" W x 2.40" H
 Weight 14 oz.
 Temperature Range -40° to +122°F
 Terminations, Contacts 5/16" -24 UNF-2A thread
 Terminations, Coil #10-32 UNF-2A thread
 Recommended Mounting Plunger vertical with cap down
 Hardware Torque, Contact Terminal 45-55 in. lbs.
 Hardware Torque, Coil Terminal 12-18 in. lbs.
 Caution: A back-up wrench must be used to hold the bottom nut stationary.
 Agency U.L. 538 Recognized, File AU2138

Model Number	Duty Cycle ③	Terminal Type ①	Pole Form	Bracket Style	Coil Voltage D.C.	Coil Resistance (Ohms) ②	Contact Material	Contact Rating (Amps) – Inductive Load				
								Voltage D.C.	Normally Open		Normally Closed	
								Continuous	Inrush	Continuous	Inrush	
70-111225	Continuous	3A	SPNO	Standard	12	16	Copper	12	80	400	60	60
70-111224	Continuous	4	SPNO	Standard	12	16	Copper	12	80	400	60	60
70-117224	Continuous	4	SPNO	Standard	24	60	Copper	24	50	50	30	30
70-120224	Continuous	4	SPNO	Standard	36	114	Copper	36	50	50	30	30

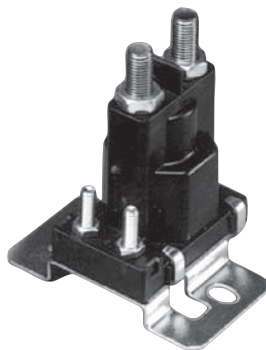
- ① "3A" = Coil Grounded to Case
"4" = Isolated Coil
- ② Coil resistance in Ohms @ 25°C
- ③ Intermittent duty designs available.

TYPE 120 SPNO

Single Pole Normally Open Contact, Dust Resistant, Water Resistant and Case is Isolated from Bracket

SPECIFICATIONS

Dimensions 2.13" L x 2.88" W x 3.09" H (Std. Bracket)
 Dimensions 2.50" L x 3.00" W x 3.03" H (L-Shaped Bracket)
 Weight 6.0 oz.
 Temperature Range, Intermittent Duty -20° to +150°F
 Temperature Range, Continuous Duty -20° to +120°F
 Terminations, Contacts 5/16" -24 studs, .495" min. length
 Terminations, Coil #10-32, .451" min. length
 Recommended Mounting Coil terminals up or horizontal
 Hardware Torque, Contact Terminal 45-55 in. lbs.
 Hardware Torque, Coil Terminal 12-18 in. lbs.
 Caution: A back-up wrench must be used to hold the bottom nut stationary.



Type 120 SPNO

Model Number	Duty Cycle ①	Terminal Type ②	Pole Form	Bracket Style	Coil Voltage D.C.	Coil Resistance (Ohms) ③	Contact Material	Contact Rating (Amps) – Inductive Load		
								Voltage D.C.	Normally Open	
								Continuous	Inrush ④	
120-105711	Continuous	4	SPNO	Standard	12	16.0	Silver Alloy	12	100	400
120-105851	Continuous	3A	SPNO	Standard	12 ⑤	16.0	Silver Alloy	12	100	400
120-106131	Intermittent	4	SPNO	Standard	12	6.0	Copper	12	80	400
120-106132	Intermittent	4	SPNO	L	12	6.0	Copper	12	80	400
120-107112	Continuous	4	SPNO	L	14	26.0	Silver Alloy	14	100	400

- ① Intermittent Duty Cycle = 30 seconds "ON" maximum and 6 minutes "OFF"
- ② "4" = Isolated Coil
- ③ Coil resistance in Ohms @ 25°C
- ④ Inrush Current: Current applied within the first 1/2 second of contact closure
- ⑤ Coil grounded to bracket

NOTE: CAUTION must be used in coil selection for use in 12 volt systems where battery charging may expose coil to continuous, higher-than-rated voltage. 14 volt coils are recommended. White-Rodgers will not be responsible for consequences of misapplied solenoids.

**D.C. POWER CONTACTOR
SERVICE INSTRUCTIONS**

**CONTACTEUR C.C.
INSTRUCTIONS D'ENTRETIEN**

**CONTACTOR CON ENERGÍA DE
CORRIENTE CONTINUA
INSTRUCCIONES DE SERVICIO**

⚠ WARNING

To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.

⚠ WARNING

Pour éviter les risques d'électrocution et/ou de dégâts de l'équipement, il faut débrancher l'alimentation électrique du système au fusible ou au coupe-circuit principal jusqu'à la fin de l'intervention.

⚠ WARNING

Para evitar el choque eléctrico y/o el daño en el equipo, desconecte la energía eléctrica que va al sistema en el fusible principal o en la caja de interruptores de circuito, hasta que se haya completado la instalación.

SPECIFICATIONS:

Insulated Coil Terminals
Preferred Mounting Position—Coil Terminals Up

CARACTÉRISTIQUES:

Bornes Isolées De Bobine
Position De Montage Privilégiée -
Bornes De Bobine Excitées

ESPECIFICACIONES:

Terminales De La Bobina Aislados
Posición De Montaje Preferida -
Terminales De La Bobina Arriba

	Voltage / Tension / Voltage (VDC Max.) / (Vc.c. maxi.) / (VDC max.)		Duty Cycle / Cycle de service / Ciclos de Servicio
	Coil Bobine Bobina	Contact Contact Contacto	
120-105711	12	12	Continuous / Continu / Continuo
120-105851	12	12	Continuous / Continu / Continuo
120-106131	12	12	Intermittent / Intermittent / Intermitente
120-106132	12	12	Intermittent / Intermittent / Intermitente
120-107112	14	14	Continuous / Continu / Continuo

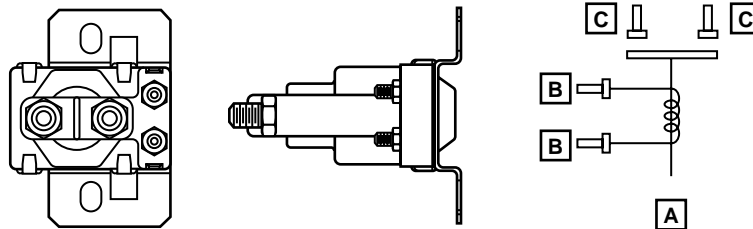


Fig. 1

**Single Pole Normally Open (Isolated Coil)
Interrupteur Unipolaire De Travail (Bobine Isolée)
Unipolar Normalmente Abierto (Bobina Separada)**

A Wiring Diagram (Terminal Identification)

B Coil

C N.O. Contacts

A Schéma De Câblage (Identification Des Bornes)

B Bobine

C Contacts De Travail

A Diagrama De Cableado (Identificación De Terminales)

B Bobina

C Contactos Normalmente Abiertos

When used to replace contactors having only one coil terminal (per fig. 2), reconnect either terminal per fig. 3 or 4 as indicated by dotted line, depending on original circuit.

En cas d'utilisation pour remplacer des contacteurs à une seule borne de bobine comme sur la fig. 2 - reconnecter l'une ou l'autre des bornes comme sur la fig. 3 ou 4 - comme indiqué par la ligne en pointillés - suivant le circuit d'origine.

Cuando se usa para reemplazar contactores que tienen solo un terminal de bobina según la fig. 2 - vuelva a conectar cualquier terminal de bobina según la fig. 3 o 4 - tal como se indica con la línea de puntos - dependiendo del circuito original.

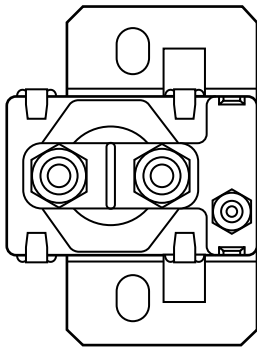


Fig. 2
Three Terminal Contactor
Contacteur À Trois Bornes
Contacteur De Tres Terminales

Ground one coil terminal per dotted line.
 Mettre une borne de bobine à la terre comme indiqué par la ligne en pointillés.
 Conecte a tierra un terminal de la bobina según la línea de puntos.

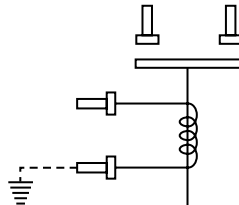


Fig. 3
Grounded Coil
Bobine Mise À La Terre
Bobina Conectada A Tierra

Connect one coil terminal to line (or battery) N. O. power terminal per dotted line.

Raccorder une borne de bobine au secteur (ou à la batterie) borne alimentation Norm. Ouv. comme indiqué par la ligne en pointillés.

Conecte un terminal de la bobina al terminal de energía normalmente abierto de la línea (o batería), según la línea de puntos.

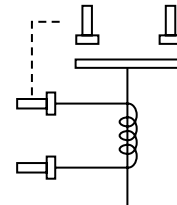


Fig. 4
Coil Common to Line (or Battery)
Liaison Ligne Commune De Bobine / Secteur (Ou Batterie)
Bobina Común Para La Línea (O Bateria)

APPLICATION NOTES

- ◆ Contactors applied in battery charging circuits should be protected from higher than rated voltage during charging. The service life may be affected by this condition and the contactor may not operate the circuit as intended.
- ◆ Circuits should be designed to provide safe operation should the contactor fail in either the open or closed position.
- ◆ A backup wrench must be used to hold the bottom nut stationary during installation.

REMARQUES

- ◆ Un contacteurs utilisé dans un circuit de recharge de piles doit être protégé contre toute tension supérieure à la valeur nominale pendant la recharge. Toute surtension risque de nuire à sa longévité et à son bon fonctionnement dans le circuit.
- ◆ Concevoir les circuits pour qu'ils fonctionnent en toute sécurité si le solénoïde fait défaut, que ce soit en position ouverte ou fermée.
- ◆ Pendant l'installation, utiliser une clé pour empêcher l'écrou inférieur de tourner.

NOTAS DE APLICACION

- ◆ Los contactores que son aplicados en circuitos cargados por medio de baterías deben ser protegidos del alto voltage durante su carga. El tiempo de servicio puede ser afectado por esta condicion y el solenoide podría o no operar el circuito deseado.
- ◆ Los circuitos deben ser diseñados para proveer seguridad durante su operación, si el solenoide fallara al estar abierto cerrado.
- ◆ Se deberá usar una llave como soporte para mantener la tuerca de la parte inferior fija durante la instalación.