

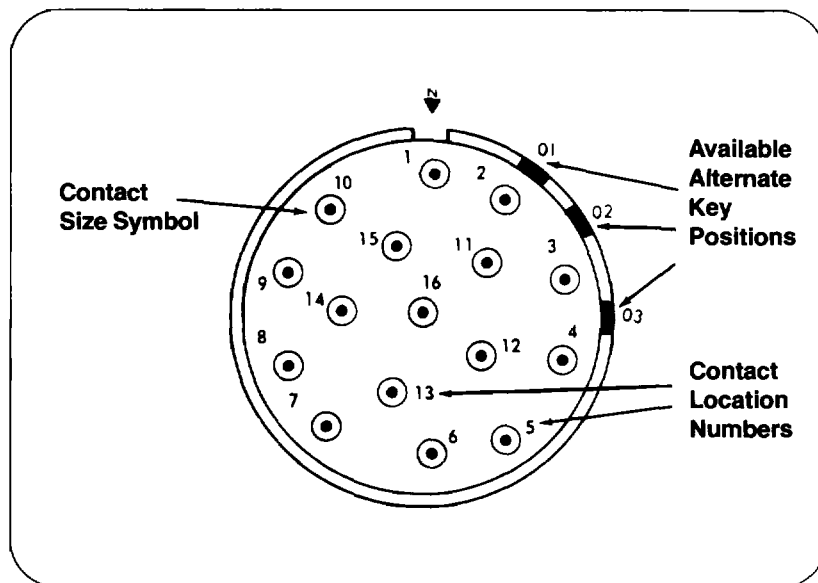
# STAR-LINE

## INSERT CONFIGURATION LISTING

for Pyle-Star-Line connectors

### introduction

The Pyle-Star-Line Insert Configuration Listing is issued primarily to identify various contact insert arrangements. For the engineer, it provides visual selection of the insert configuration needed to satisfy his requirements. For the end user, the list provides general information useful in the termination of plugs and receptacles. To aid the reader, the insert configurations are presented in numerical order, based on the number of contacts in each.



The male insert illustration shown left (and those on the following pages) is shown as it appears when viewed from the front. Contacts are shown by both physical position within the configuration and by contact number. The contact number corresponds to the contact position shown on the rear face of the insert illustrated as well as to both the front and rear faces of the mating insert. The symbol used to show contact location is indicative of contact size. For example, the contact symbol in this illustration represents a #8 contact. An explanation of contact symbols is presented on each page of the listing. Each drawing also provides data on normal and alternate key positions. Drawings are reduced from actual size of the insert configuration.

Note: Alternate keying or insert polarization is intended to resist improper intermating of plugs and receptacles of like shell sizes and like insert arrangements.

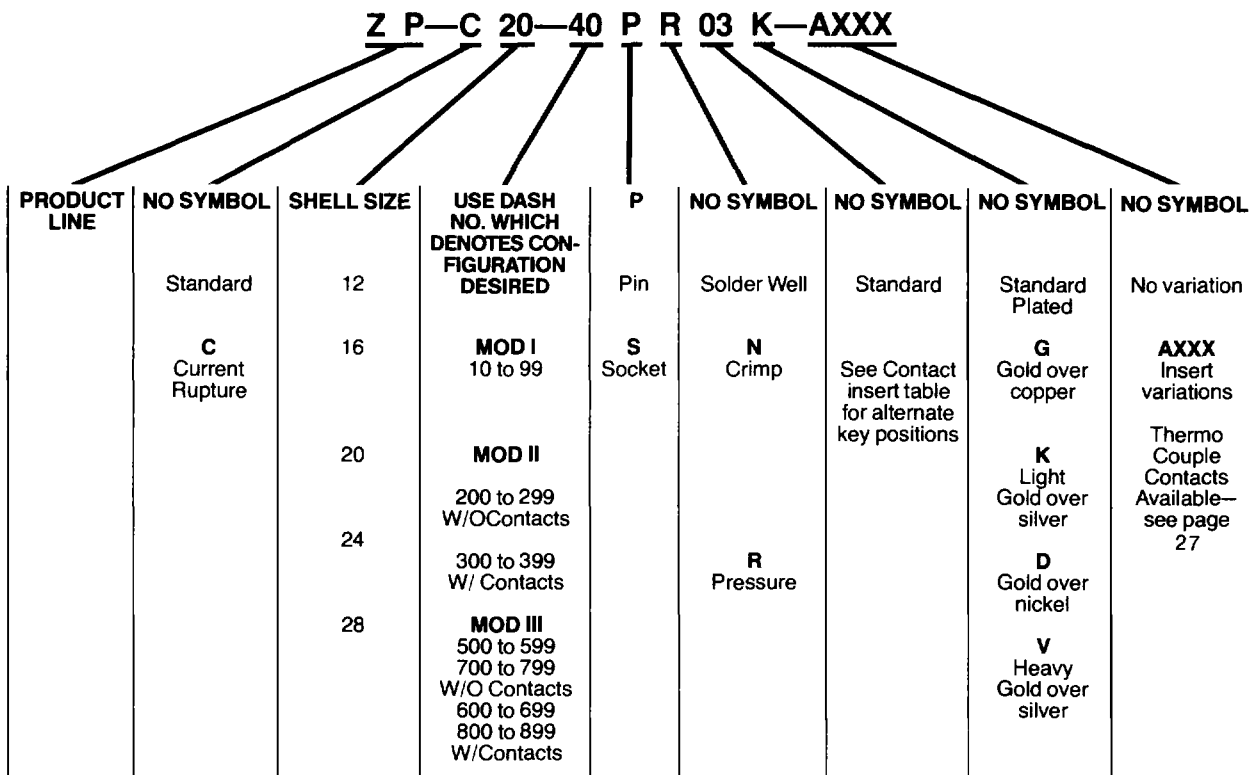
### contact insert ordering:

Plug and receptacle contact inserts are selected according to requirements for Service Voltage Rating, Number of Contacts, Wire Size, and Ampere Rating.

Mod I and II inserts may be purchased separately for assembly into the basic barrel. The catalog number for each is shown on the chart accompanying each drawing. Pin or socket inserts are interchangeable in male and female barrels.

Mod III inserts, as a unit, cannot be purchased separately because contact inserts are factory assembled to, and sealed in the basic barrel. The Dash Number given with each Mod III configuration must be shown as a suffix to the basic barrel catalog number to identify the insert desired.

# contact insert code logic



The above logic chart is to be used as an aid in identifying existing part numbers only. It is not intended to be used in creating new catalog numbers for new (or different) products.

## star line connector code logic 20 Contacts—Form #20

SERIES STAR LINE	Type Receptacle	Threaded Cap	Panel Mount	Shell Size	Contact Configuration	Female Insert	Male Insert	Crimp Type
Z	R	E	P	20	332	S	P	N

SERIES STAR LINE	Type Plug	Threaded Cap	Basket Weave	Long Barrel	Jack Nut	Grommet & Basket Weave Size	Shell Size	Pin Configuration	Male Insert	Female Insert	Crimp Type
Z	P	E	K	L	J	16	20	332	P	S	N

# STAR-LINE

## electrical ratings

### SERVICE VOLTAGE RATINGS:

The voltage to which contact inserts are limited is a function of the dielectric separation between adjacent contacts and between contacts and shell.

The voltage rating is designated by a service voltage rating letter which is shown in the service voltage rating table with each contact configuration listing.

Service Voltage	Military Ratings MIL-C-5015 Specifications Non-Circuit-Breaking		N.E.C. Ratings		Over Surface Distance Inches Nominal	Thru Air Spacing Inches Nominal
	D.C. Volts	A.C. Volts RMS	Non-Circuit Breaking	Circuit Breaking		
			D.C.	A.C. RMS		
Instrument	250	200	...	...	1/16"	...
A	700	500	250	240	1/8"	1/16"
D	1250	900	600	600	3/16"	1/8"
E	1750	1250	600	600	1/4"	3/16"
B	2450	1750	600	600	5/16"	1/4"
C	4200	3000	600	600	1"	5/16"

### THREE CLASSIFICATIONS OF AMPERE RATINGS

#### MS AMPERE RATINGS: (MIL-C-39029)

Based on the combination of the following:

The amount of current which an individual pin and socket contact may carry is a function of contact material and design efficiency of the pin and socket system as well as the ability of the primary conductor insulation to resist temperature rises due to inherent copper losses and bundling factors.

Total current carrying capacity of the connector is a function of the insert temperature which is rated at 225°F for continuous operation. The total operating temperature is the summation of the ambient temperature plus the temperature rise resulting from the thermal losses of each contact.

MIL-W-5088 specifications may be used as a general reference on the subject inasmuch as pertinent cable derating data is included.

#### N.E.C. NON-CIRCUIT-BREAKING OR DISCONNECT AMPERE RATINGS:

The non-interrupting current ratings, shown in the table, are based on the temperature of the contacts being within the range specified by Underwriter's Laboratories, Inc. when wire sizes are selected in accordance with the National Electrical Code.

When multiple conductors are used, the load factor and temperature rise based on ambient and total insert temperature must be taken into consideration.

#### N.E.C. CIRCUIT-BREAKING AMPERE RATINGS:

N.E.C. circuit-breaking current ratings indicated in the ampere rating table are based on the ability to connect and disconnect the rated loads. Ratings shown are based on silver plated pin and socket contacts in terms of wire AWG as shown in the table.

Contact Size AWG	Non-Circuit Breaking Ampere Rating		Circuit-Breaking Ampere Rating	†MV DROP	
	MS	N.E.C. **	N.E.C. ***	Solder Contacts	Crimp Contacts
#18	—	9	...	22	30
#16	13	16	10	21	29
#12	23	30	20	20	27
#10	33	40	30	16	26
# 8	46	50	40	12	23
# 4	80	90	60	10	22
#1/0	150	155	100	10	22
#4/0	225	225	200	8	22
350 MCM	...	325	...	8	
500 MCM	...	750	...	.	30

NOTE: The N.E.C. circuit breaking and non-circuit breaking ratings are based on test results of contacts and connectors. Consult the N.E.C. when selecting wire/cable for specific applications. Under certain conditions, a wire size may be rated higher or lower than the table indicates for a given contact size.

†Measurements made at extreme ends of mated contacts with probe touching contact and wire (MIL-C-5015 specification).

\*\*Based on temperature rise (National Electrical Code Requirement).

\*\*\*Based on Arcing Control (National Electrical Code Requirement).

## spare/replacement contacts for mod II and mod III inserts

Contacts are machined copper alloy ranging in size (AWG) from #18 to 500 MCM.

Standard line contacts are silver plated but can also be furnished with gold over silver, gold over nickel, and other combinations of plating systems available upon request.

Pin contacts are of blended geometry to provide extra strength and protection against damage. Socket contacts are the closed entry type.

Contacts for MOD I inserts are not listed because these inserts are factory assembled and damage may be done to the resilient center insulation if contacts are inserted or removed by inexperienced personnel in the field.

MOD II					
Size Awg.	"W" Length	"C" Length	"W" Ground	Polarizing Standard	Polarizing "C"
18 Pin Socket	ZP-4018-36L ZP-4118-36L				
16 Pin Socket	ZP-4016-36L ZP-4116-36L		ZP-4016-37LK		
12 Pin Socket	ZP-4012-36L ZP-4112-36L		ZP-4012-37L3		
10 Pin Socket	ZP-4010-36L ZP-4110-36L		ZP-4010-37L2		
8 Pin Socket	ZP-4008-66L ZP-4108-66L				
4 Pin Socket	ZP-4004-66L ZP-4104-66L			ZP-4804-66L ZP-4904-66L	
1/0 Pin Socket	ZP-4100-66L	ZP-4000-66LB		ZP-4900-66LK	ZP-4800-66LKB
4/0 Pin Socket	ZP-4141-76L	ZP-4041-76LB			
500 Pin MCM Socket		P-206053-CP P-206053-CS			

MOD III					
Size Awg.	"W" Length	"C" Length	"W" Ground	Polarizing Standard	Polarizing "C"
18 Pin Socket	ZP-4018-50L ZP-4118-50L				
16 Pin Socket	ZP-4016-50L ZP-4116-50L				
12 Pin Socket	ZP-4012-50L ZP-4112-50L	ZP-4012-50LB	ZP-4012-52LK		
10 Pin Socket	ZP-4010-50L ZP-4110-50L		ZP-4010-52LK		
8 Pin Socket	ZP-4008-50L ZP-4108-50L	ZP-4008-50LB			
4 Pin Socket	ZP-4004-50L ZP-4104-50L		ZP-4004-52LK	ZP-4804-50LK ZP-4904-50LK	
1/0 Pin Socket	ZP-4000-50L ZP-4100-50L	ZP-4000-50LB	ZP-4800-52LKB	ZP-4800-50LK ZP-4900-50LK	ZP-4800-50LKB

"C" Length contacts are 1/2" longer than "W". Used in "C" inserts.  
Ground contact 1/8" longer than standard. Ground Clip is part of insert.  
"C" Length ground contact 1/8" longer than "C" length line.

# STAR-LINE

## TERMINATING INFORMATION

Pyle-National tools for contact crimping, insertion, and removal are required for terminating and assembling contacts. For complete ordering information, see pages 66 and 67 and request bulletin for assembly procedures.

## Contact Dimensions

Contact Size AWG	WIRE WELL DIMENSIONS					
	Solder Mod I		Crimp* Mod II		Crimp* Mod III	
	Dia.	Depth	Dia.	Depth	Dia.	Depth
# 18	.060"	1 <sup>3</sup> / <sub>64</sub> "	.059"	3 <sup>8</sup> / <sub>8</sub> "	.058"	3 <sup>8</sup> / <sub>8</sub> "
# 16	.079"	1 <sup>3</sup> / <sub>64</sub> "	.079"	1 <sup>2</sup> / <sub>2</sub> "	.079"	1 <sup>2</sup> / <sub>2</sub> "
# 12	.117"	1 <sup>7</sup> / <sub>64</sub> "	.113"	1 <sup>7</sup> / <sub>64</sub> "	.113"	1 <sup>7</sup> / <sub>32</sub> "
# 10	.142"	2 <sup>5</sup> / <sub>64</sub> "	.142"	1 <sup>9</sup> / <sub>32</sub> "	.142"	1 <sup>9</sup> / <sub>32</sub> "
# 8	.210"	2 <sup>3</sup> / <sub>64</sub> "	.189"	3 <sup>4</sup> / <sub>4</sub> "	.188"	3 <sup>4</sup> / <sub>4</sub> "
# 4	.333"	3 <sup>7</sup> / <sub>64</sub> "	.289"	5 <sup>3</sup> / <sub>64</sub> "	.278"	5 <sup>3</sup> / <sub>64</sub> "
# 1/0	.470"	4 <sup>1</sup> / <sub>64</sub> "	.445"	1 <sup>1</sup> / <sub>8</sub> "	.445"	1 <sup>5</sup> / <sub>16</sub> "
# 4/0	.656"	5 <sup>7</sup> / <sub>64</sub> "			.656"	1 <sup>5</sup> / <sub>16</sub> "
350 MCM	.798"	1 <sup>1</sup> / <sub>8</sub> "				
500 MCM			1.00"	1 <sup>3</sup> / <sub>8</sub> "		

\*Crimp contacts have inspection hole.

## Crimp Data

Contact Size	Conductor Wire Size Crimped (AWG)	Crimp Retention Min. Force Lbs.
18	18	38
	20	19
	22	15
16	16	50
	18	38
	20	19
12	12	110
	14	70
	16	50
10	10	180**
	12	110
	14	70
8	8	225
	10	180
4	4	400
	6	300
0	2	550
	0	700
4/0	4/0	875
	3/0	825
	2/0	750
500 MCM	500 MCM	2500

\*\*Stranded Wire

## Torque Data for Pressure Contacts MOD I

Contact/Conductor Size	Torque Req. In./Lbs.	Retention Force Lbs.
4/0	120	250
1/0	70	250
4	26	140
8	26	75
10	26	60

# thermocouple contacts

Thermocouple contacts are available for use in all insert configurations. Contact can be either purchased separately or included in the insert/connector—please coordinate with the factory on this latter option. For crimp terminations—see tools shown on page 66. When soldering, please adhere to the following procedures: (1) clean wire and solder well with stainless scratch brush. (2) Use Handy and Harman Silver Solder Flux. (3) Use Handy and Harman AMS 2665 Silver Solder with flame torch. **IMPORTANT**—Use extreme care to prevent overheating the female contact, otherwise tension will be lost and result in poor contact. (4) Clean flux from all surfaces using boiling water or steam.

**TABLE—TEMPERATURE RANGE OF THERMOCOUPLE MATERIAL**

Material*	Temperature Range	
	Degrees Continuous	Short Time
Electrolytic Copper & Constantan	190 to 350 C.	To 600 C.
Chromel & Constantan	0 to 900 C.	To 1100 C.
Iron & Constantan	0 to 1100 C.	To 1100 C.
Chromel & Alumel	0 to 1100 C.	To 1350 C.

**MOD I & MOD II**

Size	Gender	Cat. No.	Color Code	Thermocouple Material*
#16	Pin Socket	ZP-4016-10MF ZP-4116-10MF	Black	Iron
#16	Pin Socket	ZP-4016-10NF ZP-4116-10NF	Yellow	Constantan
#16	Pin Socket	ZP-4016-10PO ZP-4116-10PO	White	Chromel
#16	Pin Socket	ZP-4016-10RO ZP-4116-10RO	Green	Alumel
#16	Pin Socket	ZP-4016-10CF ZP-4116-10CF	Red	Copper

**MOD III**

Size	Gender	Cat. No.	Color Code	Thermocouple Material*
#16	Pin Socket	ZP-4016-50MF ZP-4116-50MF	Black	Iron
#16	Pin Socket	ZP-4016-50NF ZP-4116-50NF	Yellow	Constantan
#16	Pin Socket	ZP-4016-50PO ZP-4116-50PO	White	Chromel
#16	Pin Socket	ZP-4016-50RO ZP-4116-50RO	Green	Alumel
#16	Pin Socket	ZP-4016-50CF ZP-4116-50CF	Red	Copper
#16	Pin Socket	ZP-4016-50SO ZP-4116-50SO	None	Alloy #11

ISA Symbol	Nomenclature*	ISA Color Coding			Military Color Coding		Conductor Identification	
		(+)	(-)	Jacket	(+)	(-)	Positive (+)	Negative (-)
J	Iron/Constantan	white	red	black	black	yellow	magnetic	nonmagnetic
K	Chromel/Alumel	yellow	red	yellow	white	green	nonmagnetic	magnetic
T	Copper/Constantan	blue	red	blue	red	yellow	copper color	nonmagnetic
E	Chromel/Constantan	purple	red	purple	white	yellow	nonmagnetic	silver color, nonmagnetic
B	Copper/Copper	black	white	black	red	red	copper color	nonmagnetic
S	Alloy #11							

\*Chromel and Alumel are registered trademarks of Hoskins Manufacturing Company.

# STAR-LINE

## INSERT CONFIGURATION INDEX

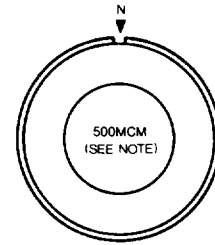
Front view of male insert is depicted on the following pages

Insert Number	Mod I	Mod II	Mod III	Page Number	Insert Number	Mod I	Mod II	Mod III	Page Number	Insert Number	Mod I	Mod II	Mod III	Page Number
ZP-12-310		X		38	ZP-16-673			X	48	ZP-20-686			X	49
ZP-12-14	X			30	ZP-16-74	X			30	ZP-20-387		X		47
ZP-12-614			X	30	ZP-16-75	X			33	ZP-20-688			X	46
ZP-12-22	X			30	ZP-16-676			X	42	ZP-24-313		X		54
ZP-12-323		X		45	ZP-16-377		X		45	ZP-24-613			X	54
ZP-12-623			X	45	ZP-16-677			X	45	ZP-C24-26	X			32
ZP-12-24	X			33	ZP-16-378		X		39	ZP-24-331		X		53
ZP-12-624			X	33	ZP-16-681			X	42	ZP-C24-36	X			49
ZP-12-326		X		35	ZP-20-313		X		53	ZP-C24-38	X			32
ZP-12-27	X			29	ZP-20-613			X	53	ZP-24-40	X			44
ZP-12-33	X			30	ZP-20-323		X		50	ZP-C24-47	X			44
ZP-12-334		X		41	ZP-20-623			X	50	ZP-C24-48	X			35
ZP-12-648			X	38	ZP-20-329		X		53	ZP-C24-49	X			34
ZP-12-649			X	29	ZP-20-331		X		47	ZP-C24-50	X			36
ZP-12-651			X	29	ZP-20-32	X			46	ZP-24-352		X		52
ZP-12-53	X			33	ZP-20-332		X		46	ZP-C24-353		X		40
ZP-12-653			X	33	ZP-20-632			X	46	ZP-24-354		X		54
ZP-12-354		X		38	ZP-20-334		X		47	ZP-24-55	X			40
ZP-12-654			X	38	ZP-20-35	X			52	ZP-24-655			X	40
ZP-12-355		X		41	ZP-20-38	X			34	ZP-24-658			X	39
ZP-12-655			X	41	ZP-C20-40	X			31	ZP-C24-59	X			39
ZP-12-56	X			29	ZP-C20-640			X	31	ZP-C24-659			X	39
ZP-16-312		X		46	ZP-C20-42	X			32	ZP-24-371		X		49
ZP-16-16	X			33	ZP-C20-342		X		32	ZP-C24-72	X			37
ZP-16-316		X		33	ZP-C20-642			X	32	ZP-24-673			X	43
ZP-16-616			X	33	ZP-20-43	X			36	ZP-C24-675			X	43
ZP-16-321		X		48	ZP-20-643			X	36	ZP-C24-79	X			34
ZP-16-621			X	48	ZP-20-344		X		54	ZP-C24-680			X	43
ZP-16-22	X			31	ZP-20-345		X		54	ZP-C24-81	X			44
ZP-16-322		X		31	ZP-20-46	X			36	ZP-24-83	X			32
ZP-16-622			X	31	ZP-20-646			X	36	ZP-24-84	X			52
ZP-16-324		X		45	ZP-20-48	X			36	ZP-24-384		X		52
ZP-16-624			X	45	ZP-20-648			X	36	ZP-24-385		X		55
ZP-16-325		X		45	ZP-20-49	X			35	ZP-C24-687			X	41
ZP-16-28	X			31	ZP-20-649			X	35	ZP-C28-12	X			50
ZP-16-628			X	31	ZP-20-350		X		49	ZP-28-314		X		55
ZP-16-29	X			41	ZP-20-650			X	49	ZP-C28-15	X			51
ZP-16-333		X		53	ZP-20-354		X		51	ZP-C28-17	X			37
ZP-16-633			X	53	ZP-20-55	X			42	ZP-C28-18	X			38
ZP-16-335		X		48	ZP-20-358		X		45	ZP-C28-20	X			34
ZP-16-635			X	48	ZP-20-659			X	39	ZP-C28-21	X			40
ZP-16-37	X			47	ZP-20-672			X	36	ZP-28-322		X		55
ZP-16-38	X			31	ZP-20-673			X	51	ZP-C28-23	X			35
ZP-16-638			X	31	ZP-20-374		X		48	ZP-28-324		X		52
ZP-16-640			X	51	ZP-20-674			X	48	ZP-C28-327		X		37
ZP-C16-341		X		29	ZP-20-375		X		43	ZP-C28-627			X	37
ZP-16-344		X		47	ZP-20-676			X	46	ZP-C28-328		X		48
ZP-16-346		X		41	ZP-C20-379		X		29	ZP-C28-628			X	48
ZP-16-349		X		44	ZP-20-680			X	42	ZP-C28-35	X			37
ZP-16-355		X		46	ZP-20-84	X			33	ZP-28-339		X		50
ZP-16-655			X	46	ZP-20-384		X		33	ZP-C28-42	X			38
ZP-16-70	X			30	ZP-20-685			X	42	ZP-C28-43	X			40
ZP-16-371		X		50	ZP-20-386		X		49					

### 1 CONTACT

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	C20	Pin Socket	379PN 379SN	ZP-C20-379PN ZP-C20-379SN

Qty.	Size (AWG)	Service Voltage Rating
1	500MCM	D

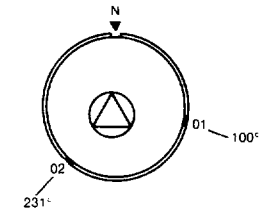


Note: Will accept 535 standard stranding  
500 MCM extra flexible cable

### 1 CONTACT

Mod II	Crimp	C16	Pin Socket	341PN 341SN	☆ ☆

1	4/0	D
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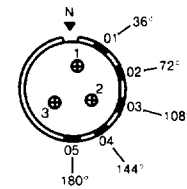


Note: Consult factory for special hardware requirements.

### 3 CONTACTS

Mod I	Solder	12	Pin Socket	27P 27S	ZP-12-27P ZP-12-27S

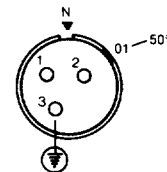
3	12	D
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### 3 CONTACTS

Mod III	Crimp	12	Pin Socket	651PN 651SN	☆ ☆

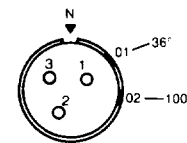
3	10	D
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### 3 CONTACTS

Mod III	Crimp	12	Pin Socket	649PN 649SN	☆ ☆

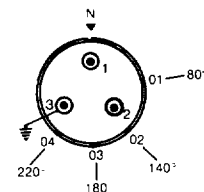
3	10	D
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### 3 CONTACTS

Mod I	Solder	12	Pin Socket	56P 56S	ZP-12-56P ZP-12-56S

3	8	♦A
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Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM	500 MCM
Solder Well	Pressure	Crimp											

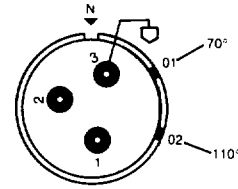
- ♦ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).



### 3 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	16	Pin Socket	74P 74S	ZP-16-74P ZP-16-74S
Mod I	Pressure	16	Pin Socket	74PR 74SR	ZP-16-74PR ZP-16-74SR

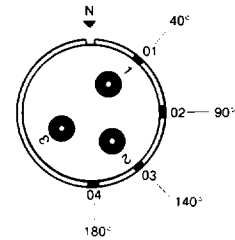
Qty.	Size (AWG)	Service Voltage Rating
3	4	D



### 3 CONTACTS

Mod I	Solder	16	Pin Socket	70P 70S	ZP-16-70P ZP-16-70S
Mod I	Pressure	16	Pin Socket	70PR 70SR	ZP-16-70PR ZP-16-70SR

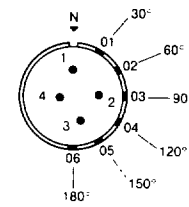
3	4	D
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### 4 CONTACTS

Mod I	Solder	12	Pin Socket	33P 33S	ZP-12-33P ZP-12-33S
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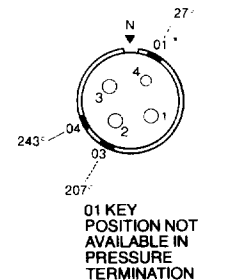
4	16	D
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### 4 CONTACTS

Mod I	Solder	12	Pin Socket	14P 14S	ZP-12-14P ZP-12-14S
Mod I	Pressure	12	Pin Socket	14PR 14SR	ZP-12-14PR ZP-12-14SR
Mod III	Crimp	12	Pin Socket	614PN 614SN	☆ ☆

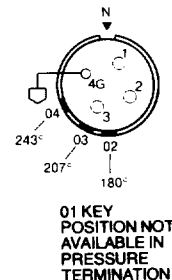
4	10	D
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### 4 CONTACTS

Mod I	Solder	12	Pin Socket	22P 22S	ZP-12-22P ZP-12-22S
Mod I	Pressure	12	Pin Socket	22PR 22SR	ZP-12-22PR ZP-12-22SR

4	10	D
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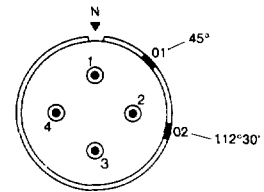
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware
  - Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.
- Note. Highlighted catalog number indicates insert readily available from stock (consult factory).

### 4 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	16	Pin Socket	28P 28S	ZP-16-28P ZP-16-28S
Mod III	Crimp	16	Pin Socket	628PN 628SN	☆ ☆

Qty.	Size (AWG)	Service Voltage Rating
4	8	D

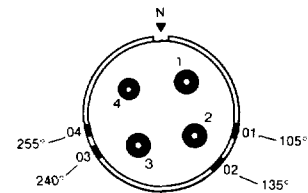


NOTE: Cannot be used with short cable adapter.

### 4 CONTACTS

Mod I	Solder	16	Pin Socket	22P 22S	ZP-16-22P ZP-16-22S
Mod I	Pressure	16	Pin Socket	22PR 22SR	ZP-16-22PR ZP-16-22SR
Mod II	Crimp	16	Pin Socket	322PN 322SN	ZP-16-322PN ZP-16-322SN
Mod III	Crimp	16	Pin Socket	622PN 622SN	☆ ☆

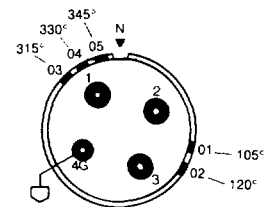
4	4	D
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### 4 CONTACTS

Mod I	Solder	16	Pin Socket	38P 38S	ZP-16-38P ZP-16-38S
Mod I	Pressure	16	Pin Socket	38PR 38SR	ZP-16-38PR ZP-16-38SR
Mod III	Crimp	16	Pin Socket	638PN 638SN	☆ ☆

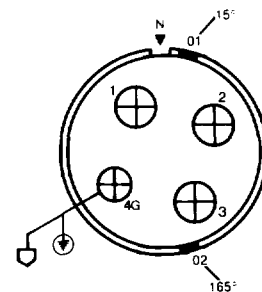
4	4	D
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### 4 CONTACTS

Mod I	Solder	C20	Pin Socket	40P 40S	ZP-C20-40P ZP-C20-40S
Mod I	Pressure	C20	Pin Socket	40PR 40SR	ZP-C20-40PR ZP-C20-40SR
Mod III	Crimp	C20	Pin Socket	640PN 640SN	☆ ☆

4	1/0	D
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#### Grounding Contact Termination Symbol

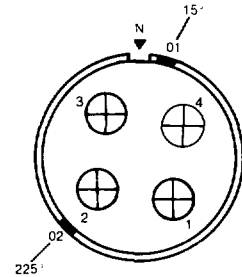
Termination Type	Symbol	Contact Symbols	Wire Size
Solder Well	⊕	○	18
Pressure	⊖	●	16
Crimp	⊙	⊙	12
		⊙	10
		⊙	8
		⊙	4
		⊙	1/0
		⊙	4/0
		⊙	350 MCM

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ⊕ Pre-assembled insert—Should be ordered mounted in barrel.
  - ⊙ Indicates configuration is UL listed when used with properly applied hardware.
  - ⊙ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory)

### 4 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C20	Pin Socket	42P 42S	ZP-C20-42P ZP-C20-42S
Mod I	Pressure	C20	Pin Socket	42PR 42SR	ZP-C20-42PR ZP-C20-42SR
Mod II	Crimp	C20	Pin Socket	342PN 342SN	ZP-C20-342PN ZP-C20-342SN
Mod III	Crimp	C20	Pin Socket	642PN 642SN	☆ ☆

Qty.	Size (AWG)	Service Voltage Rating
4	1/0	D

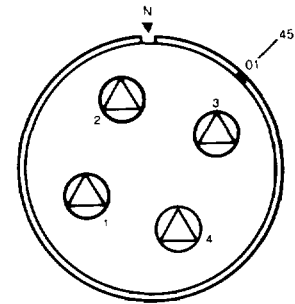


01 KEY POSITION NOT AVAILABLE IN PRESSURE TERMINATION

### 4 CONTACTS

Mod I	Solder	24	Pin Socket	83P 83S	ZP-24-83P ZP-24-83S
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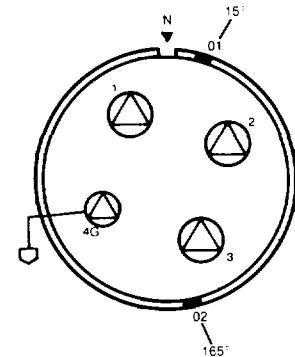
4	4/0	•D
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### 4 CONTACTS

Mod I	Solder	C24	Pin Socket	26P 26S	ZP-C24-26P ZP-C24-26S
Mod I	Pressure	C24	Pin Socket	26PR 26SR	ZP-C24-26PR ZP-C24-26SR

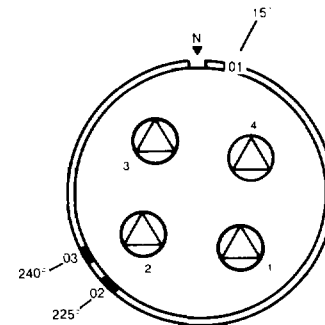
4	4/0	D
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### 4 CONTACTS

Mod I	Solder	C24	Pin Socket	38P 38S	ZP-C24-38P ZP-C24-38S
Mod I	Pressure	C24	Pin Socket	38PR 38SR	ZP-C24-38PR ZP-C24-38SR

4	4/0	D
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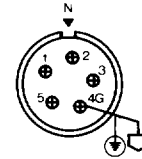
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	12	Pin Socket	53P 53S	ZP-12-53P ZP-12-53S
Mod III	Crimp	12	Pin Socket	653PN 653SN	☆ ☆

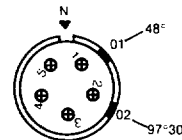
Qty.	Size (AWG)	Service Voltage Rating
5	12	D



### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	12	Pin Socket	24P 24S	ZP-12-24P ZP-12-24S
Mod III	Crimp	12	Pin Socket	624PN 624SN	☆ ☆

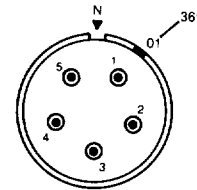
Qty.	Size (AWG)	Service Voltage Rating
5	12	D



### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	16	Pin Socket	16P 16S	ZP-16-16P ZP-16-16S
Mod II	Crimp	16	Pin Socket	316PN 316SN	ZP-16-316PN ZP-16-316SN
Mod III	Crimp	16	Pin Socket	616PN 616SN	☆ ☆

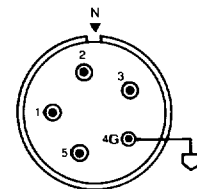
Qty.	Size (AWG)	Service Voltage Rating
5	8	D



### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	16	Pin Socket	75P 75S	ZP-16-75P ZP-16-75S

Qty.	Size (AWG)	Service Voltage Rating
5	8	D

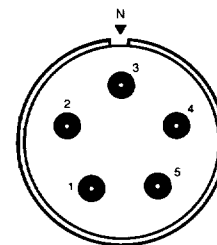


NOTE: Cannot be used with short cable adapter.

### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	20	Pin Socket	84P 84S	ZP-20-84P ZP-20-84S
Mod I	Pressure	20	Pin Socket	84PR 84SR	ZP-20-84PR ZP-20-84SR
Mod II	Crimp	20	Pin Socket	384PN 384SN	ZP-20-384PN ZP-20-384SN

Qty.	Size (AWG)	Service Voltage Rating
5	4	D



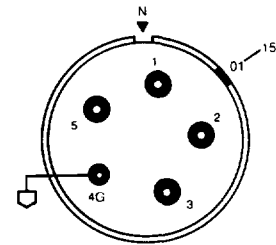
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.  
 ⚡ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ☆ Pre-assembled insert—Should be ordered mounted in barrel.  
 Ⓢ Indicates configuration is UL listed when used with properly applied hardware.  
 Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.  
 Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	20	Pin Socket	38P 38S	ZP-20-38P ZP-20-38S
Mod I	Pressure	20	Pin Socket	38PR 38SR	ZP-20-38PR ZP-20-38SR

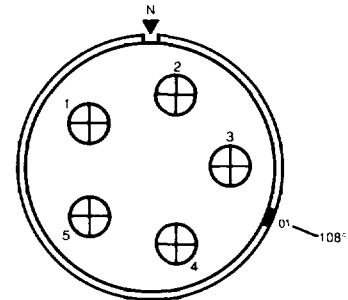
Qty.	Size (AWG)	Service Voltage Rating
5	4	D



### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C24	Pin Socket	79P 79S	ZP-C24-79P ZP-C24-79S
Mod I	Pressure	C24	Pin Socket	79PR 79SR	ZP-C24-79PR ZP-C24-79SR

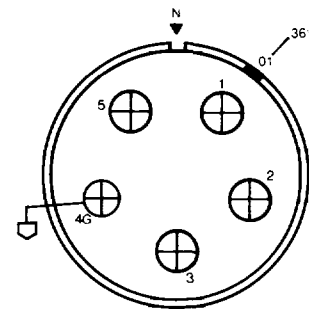
Qty.	Size (AWG)	Service Voltage Rating
5	1/0	E



### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C24	Pin Socket	49P 49S	ZP-C24-49P ZP-C24-49S
Mod I	Pressure	C24	Pin Socket	49PR 49SR	ZP-C24-49PR ZP-C24-49SR

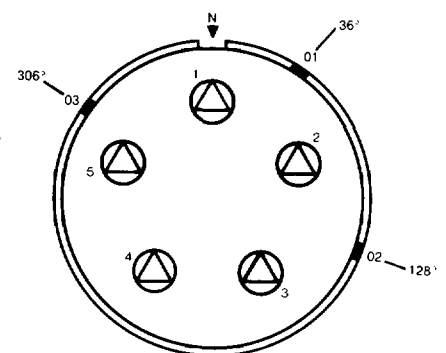
Qty.	Size (AWG)	Service Voltage Rating
5	1/0	E



### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C28	Pin Socket	20P 20S	ZP-C28-20P ZP-C28-20S
Mod I	Pressure	C28	Pin Socket	20PR 20SR	ZP-C28-20PR ZP-C28-20SR

Qty.	Size (AWG)	Service Voltage Rating
5	4/0	D



#### Grounding Contact Termination Symbol

Symbol	Termination Type
	Solder Well
	Pressure
	Crimp

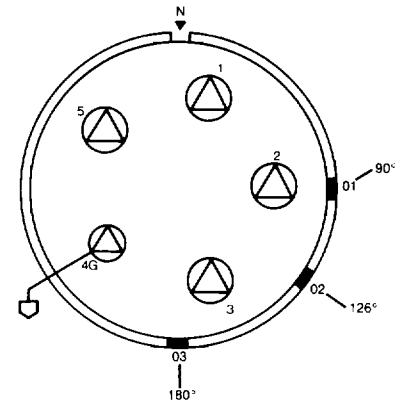
Contact Symbols	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size	Wire Size
	18	16	12	10	8	4	1/0	4/0	350 MCM		

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit
  - ⚡ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 5 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C28	Pin Socket	23P 23S	ZP-C28-23P ZP-C28-23S
Mod I	Pressure	C28	Pin Socket	23PR 23SR	ZP-C28-23PR ZP-C28-23SR

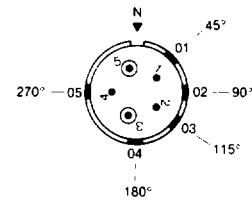
Qty.	Size (AWG)	Service Voltage Rating
5	4/0	D



### 5 CONTACTS

Mod II	Crimp	12	Pin Socket	326PN 326SN	ZP-12-326PN ZP-12-326SN
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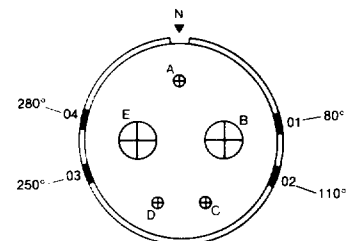
2	8	A
3	16	A



### 5 CONTACTS

Mod I	Solder	20	Pin Socket	49P 49S	ZP-20-49P ZP-20-49S
Mod III	Crimp	20	Pin Socket	649PN 649SN	☆ ☆

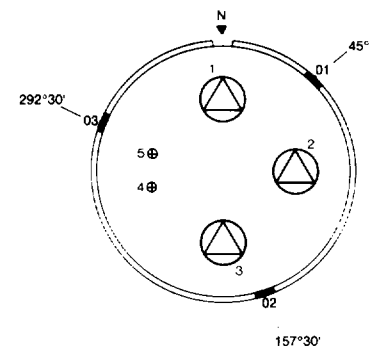
2	1/0	E
3	12	E



### 5 CONTACTS

Mod I	Solder	C24	Pin Socket	48P 48S	ZP-C24-48P ZP-C24-48S
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3	4/0	D
2	12	A



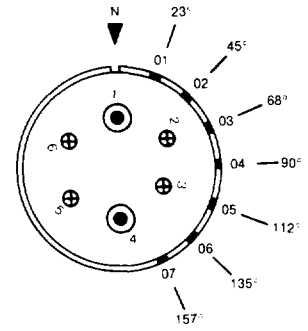
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 6 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod III	Crimp	20	Pin Socket	672PN 672SN	☆ ☆

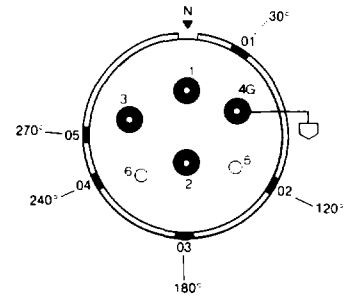
Qty.	Size (AWG)	Service Voltage Rating
2	8	E
4	12	E



### 6 CONTACTS

Mod I	Pressure	20	Pin Socket	43PR 43SR	ZP-20-43PR ZP-20-43SR
Mod III	Crimp	20	Pin Socket	643PN 643SN	☆ ☆

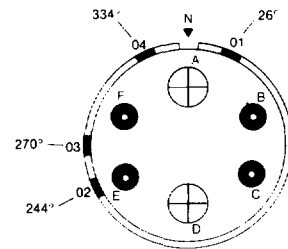
4	4	D
2	10	D



### 6 CONTACTS

Mod I	Solder	20	Pin Socket	46P 46S	ZP-20-46P ZP-20-46S
Mod III	Crimp	20	Pin Socket	646PN 646SN	☆ ☆

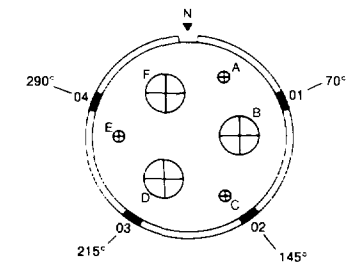
2	1/0	A
4	4	A



### 6 CONTACTS

Mod I	Solder	20	Pin Socket	48P 48S	ZP-20-48P ZP-20-48S
Mod III	Crimp	20	Pin Socket	648PN 648SN	☆ ☆

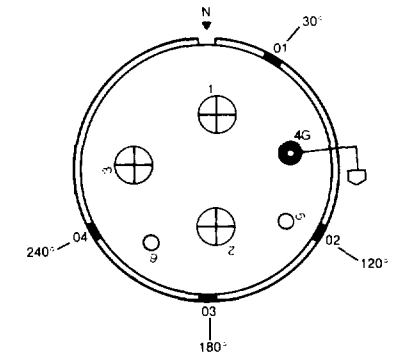
3	1/0	D
3	12	D



### 6 CONTACTS

Mod I	Pressure	C24	Pin Socket	50PR 50SR	ZP-C24-50PR ZP-C24-50SR
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3	1/0	D
2	10 Relay	D
1	4	D



#### Grounding Contact Termination Symbol

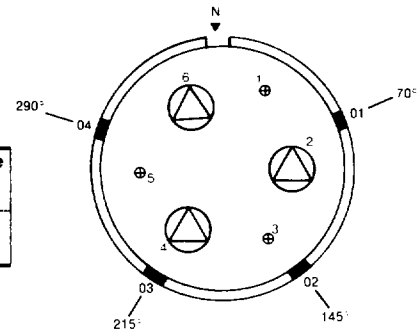
Solder Well	Pressure	Crimp

Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.  
 † Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ☆ Pre-assembled insert—Should be ordered mounted in barrel.  
 Ⓢ Indicates configuration is UL listed when used with properly applied hardware.  
 Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.  
 Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

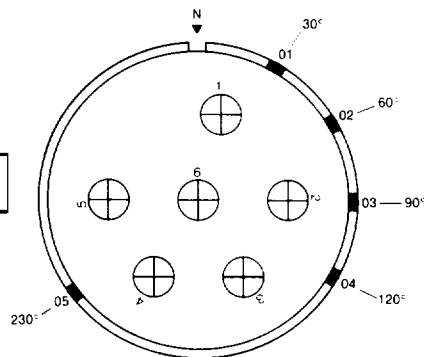
### 6 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number	Qty.	Size (AWG)	Service Voltage Rating
Mod I	Solder	C24	Pin Socket	72P	ZP-C24-72P	3	4/0	D
				72S	ZP-C24-72S	3	12	D



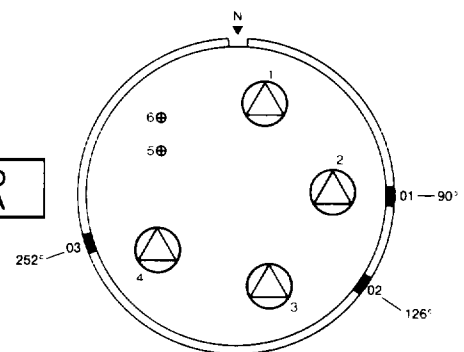
### 6 CONTACTS

Mod II	Crimp	C28	Pin Socket	327PN 327SN	ZP-C28-327PN ZP-C28-327SN	6	1/0	D
Mod III	Crimp	C28	Pin Socket	627PN 627SN	☆ ☆			



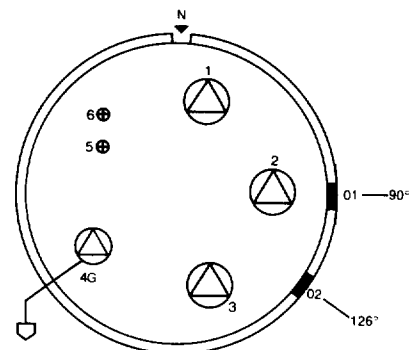
### 6 CONTACTS

Mod I	Solder	C28	Pin Socket	17P	ZP-C28-17P	4	4/0	D
				17S	ZP-C28-17S			



### 6 CONTACTS

Mod I	Solder	C28	Pin Socket	35P	ZP-C28-35P	4	4/0	D
				35S	ZP-C28-35S			



Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

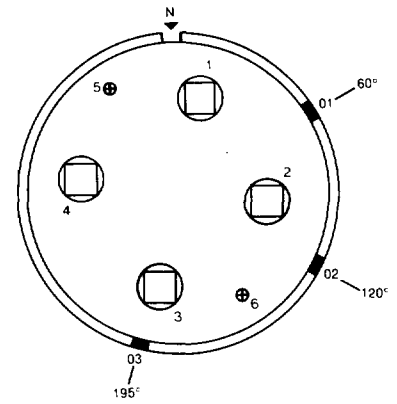
- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/2" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓜ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).



### 6 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C28	Pin Socket	18P 18S	ZP-C28-18P ZP-C28-18S

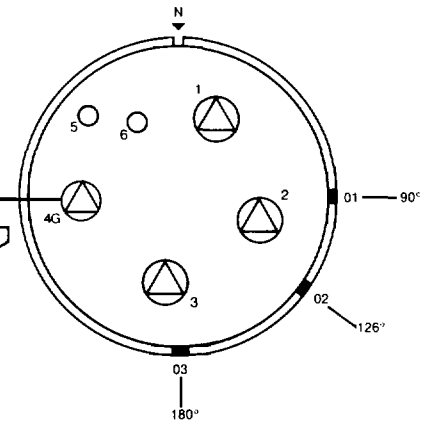
Qty.	Size (AWG)	Service Voltage Rating
4	350 MCM	D
2	12 Relay	E



### 6 CONTACTS

Mod I	Solder	C28	Pin Socket	42P 42S	ZP-C28-42P ZP-C28-42S
Mod I	Pressure	C28	Pin Socket	42PR 42SR	ZP-C28-42PR ZP-C28-42SR

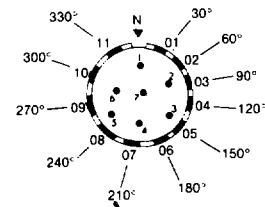
4	4/0	D
2	10 Relay	



### 7 CONTACTS

Mod III	Crimp	12	Pin Socket	648PN 648SN	☆ ☆
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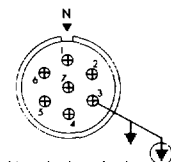
7	16	A
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### 7 CONTACTS

Mod II	Crimp	12	Pin Socket	310PN 310SN	ZP-12-310PN ZP-12-310SN
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7	12	•A
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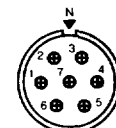


\*Ground terminal method same as corresponding line contacts

### 7 CONTACTS

Mod II	Crimp	12	Pin Socket	354PN 354SN	ZP-12-354PN ZP-12-354SN
Mod III	Crimp	12	Pin Socket	654PN 654SN	☆ ☆

7	12	•A
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#### Grounding Contact Termination Symbol

Symbol	Termination	Contact Symbols	Wire Size
	Solder Well		18
	Pressure		16
	Crimp		12
			10
			8
			4
			1/0
			4/0
			350 MCM

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.

♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.

⊕ Pre-assembled insert—Should be ordered mounted in barrel.

Ⓢ Indicates configuration is UL listed when used with properly applied hardware.

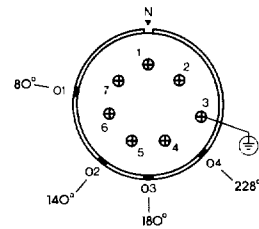
Ⓡ Indicates configuration is UL recognized when used with properly applied hardware

Note Highlighted catalog number indicates insert readily available from stock (consult factory).

### 7 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	16	Pin Socket	378PN 378SN	ZP-16-378PN ZP-16-378SN

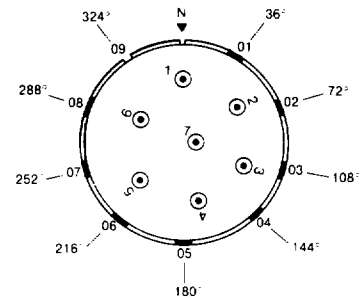
Qty.	Size (AWG)	Service Voltage Rating
7	12	D



### 7 CONTACTS

Mod III	Crimp	20	Pin Socket	659PN 659SN	☆ ☆
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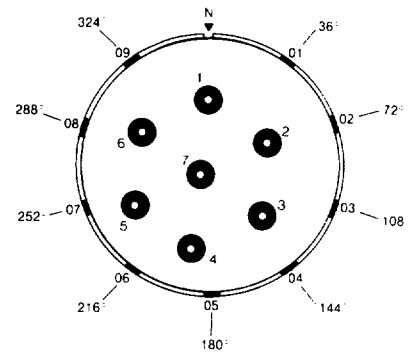
7	8	E
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### 7 CONTACTS

Mod III	Crimp	24	Pin Socket	658PN 658SN	☆ ☆
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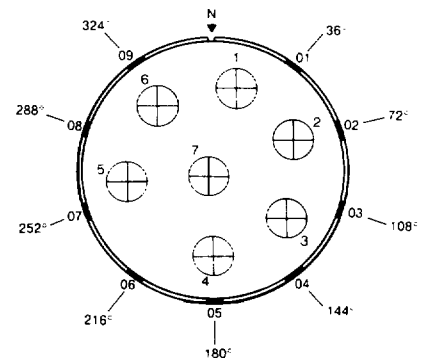
7	4	E
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### 7 CONTACTS

Mod I	Solder	C24	Pin Socket	59P 59S	ZP-C24-59P ZP-C24-59S
Mod III	Crimp	C24	Pin Socket	659PN 659SN	☆ ☆

7	1/0	D
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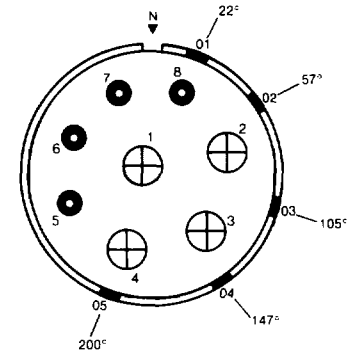
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit
  - ⚡ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 8 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	24	Pin Socket	55P 55S	ZP-24-55P ZP-24-55S
Mod I	Crimp	24	Pin Socket	655PN 655SN	☆ ☆

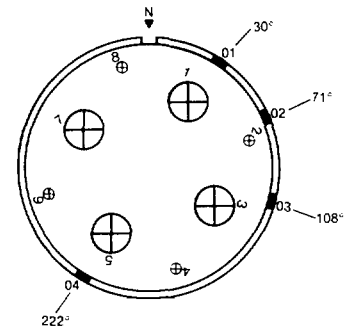
Qty.	Size (AWG)	Service Voltage Rating
4	1/0	D
4	4	D



### 8 CONTACTS

Mod II	Crimp	C24	Pin Socket	353PN 353SN	ZP-C24-353PN ZP-C24-353SN

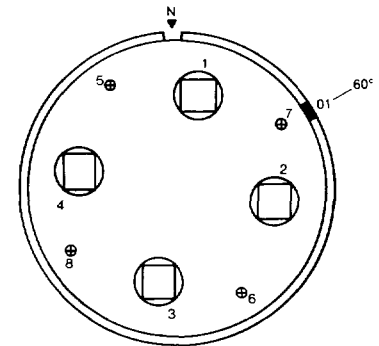
Qty.	Size (AWG)	Service Voltage Rating
4	1/0	B
4	12	A



### 8 CONTACTS

Mod I	Solder	C28	Pin Socket	21P 21S	ZP-C28-21P ZP-C28-21S

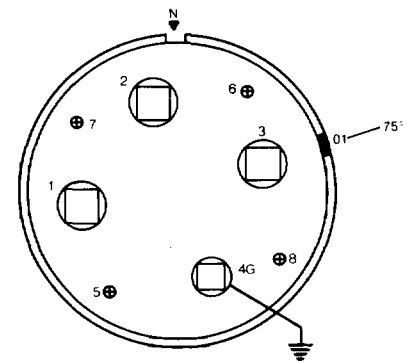
Qty.	Size (AWG)	Service Voltage Rating
4	350 MCM	D
4	12 Relay	E



### 8 CONTACTS

Mod I	Solder	C28	Pin Socket	43P 43S	ZP-C28-43P ZP-C28-43S

Qty.	Size (AWG)	Service Voltage Rating
4	350 MCM	D
4	12 Relay	E



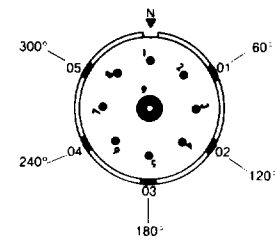
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
⏏	⏏	⊕											
Solder Well	Pressure	Crimp	○	●	⊙	⊕	⊗	⊕	⊗	⊕	⊗	⊕	⊗

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24  
 † Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ☆ Pre-assembled insert—Should be ordered mounted in barrel  
 ⊕ Indicates configuration is UL listed when used with properly applied hardware.  
 ⊗ Indicates configuration is UL recognized when used with properly applied hardware.  
 Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 9 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	16	Pin Socket	29P 29S	ZP-16-29P ZP-16-29S

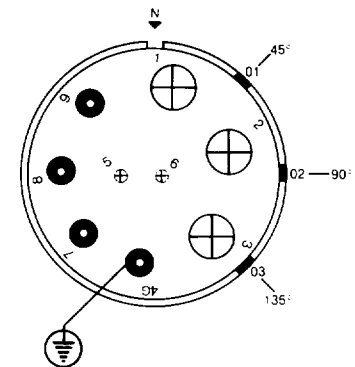
Qty.	Size (AWG)	Service Voltage Rating
1	4	D
8	16	D



### 9 CONTACTS

Mod III	Crimp	C24	Pin Socket	687PN 687SN	☆ ☆
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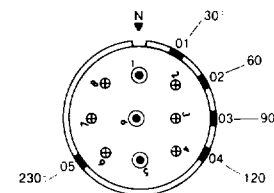
3	1/0	D
4	4	D
2	12	D



### 9 CONTACTS

Mod II	Crimp	16	Pin Socket	346PN 346SN	ZP-16-346PN ZP-16-346SN
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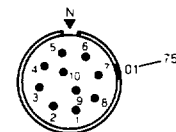
6	12	A
3	8	A



### 10 CONTACTS

Mod II	Crimp	12	Pin Socket	355PN 355SN	ZP-12-355PN ZP-12-355SN
Mod III	Crimp	12	Pin Socket	655PN 655SN	☆ ☆

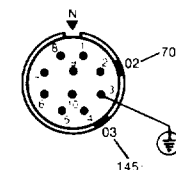
10	16	A
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### 10 CONTACTS

Mod II	Crimp	12	Pin Socket	334PN 334SN	ZP-12-334PN ZP-12-334SN
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10	16	A
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#### Grounding Contact Termination Symbol

Solder Well	Pressure	Crimp

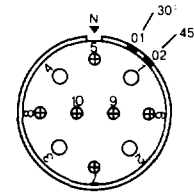
Contact Symbols	○	●	⦿	⊙	⊗	⊕	⊖	⊚	⊛
Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/2" before large contacts to provide time delay in control circuit
  - ⊕ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓜ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

10 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod III	Crimp	16	Pin Socket	681PN 681SN	☆ ☆

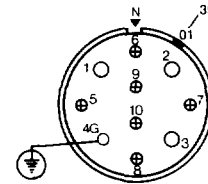
Qty.	Size (AWG)	Service Voltage Rating
4	10	D
6	12	D



10 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod III	Crimp	16	Pin Socket	676PN 676SN	☆ ☆

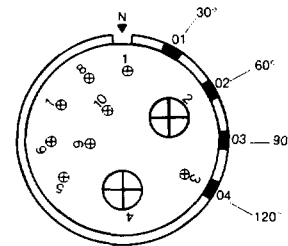
Qty.	Size (AWG)	Service Voltage Rating
4	10	D
6	12	D



10 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	20	Pin Socket	55P 55S	ZP-20-55P ZP-20-55S

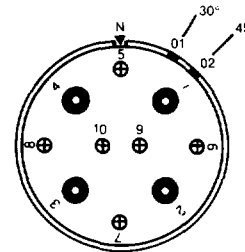
Qty.	Size (AWG)	Service Voltage Rating
2	1/0	D
8	12	D



10 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod III	Crimp	20	Pin Socket	680PN 680SN	☆ ☆

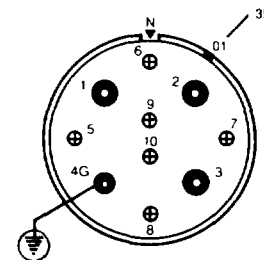
Qty.	Size (AWG)	Service Voltage Rating
4	4	D
6	12	D



10 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod III	Crimp	20	Pin Socket	685PN 685SN	☆ ☆

Qty.	Size (AWG)	Service Voltage Rating
4	4	D
6	12	D



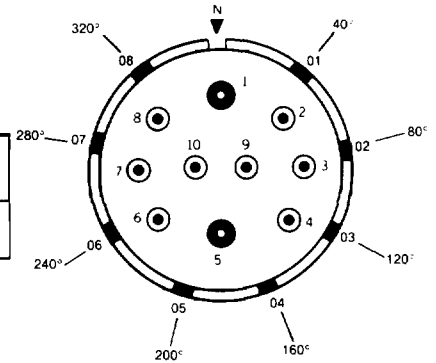
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.  
 ▲ Small contacts disengage 1/2" before large contacts to provide time delay in control circuit.  
 ⊕ Pre-assembled insert—Should be ordered mounted in barrel.  
 ⊙ Indicates configuration is UL listed when used with properly applied hardware.  
 ⊗ Indicates configuration is UL recognized when used with properly applied hardware.  
 Note. Highlighted catalog number indicates insert readily available from stock (consult factory).

### 10 CONTACTS

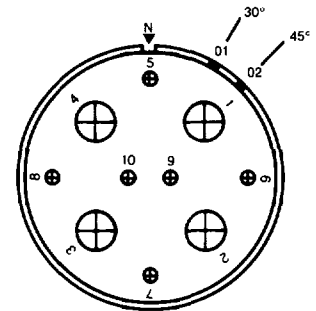
Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod III	Crimp	24	Pin Socket	673PN	☆
				673SN	☆

Qty.	Size (AWG)	Service Voltage Rating
2	4	D
8	8	



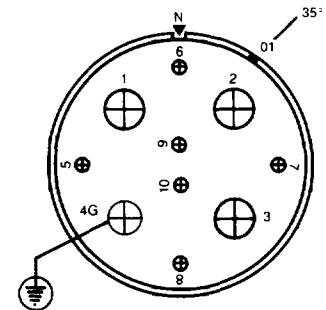
### 10 CONTACTS

Mod III	Crimp	C24	Pin Socket	675PN	☆	4	1/0	D
				675SN	☆			



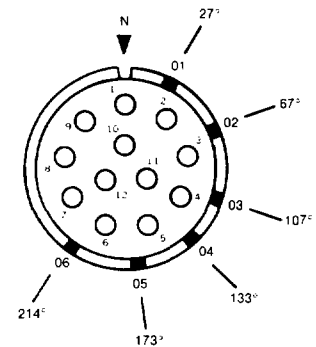
### 10 CONTACTS

Mod III	Crimp	C24	Pin Socket	680PN	☆	4	1/0	D
				680SN	☆			



### 12 CONTACTS

Mod II	Crimp	20	Pin Socket	375PN	ZP-20-375PN	12	10	D
				375SN	ZP-20-375SN			



#### Grounding Contact Termination Symbol

Solder Well	Pressure	Crimp

#### Contact Symbols

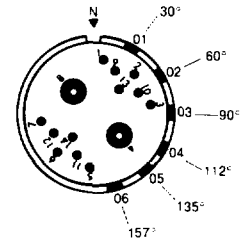
18	16	12	10	8	4	1/0	4/0	350 MCM

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓜ Indicates configuration is UL listed when used with properly applied hardware
  - Ⓢ Indicates configuration is UL recognized when used with properly applied hardware
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 14 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	16	Pin Socket	349PN 349SN	ZP-16-349PN ZP-16-349SN

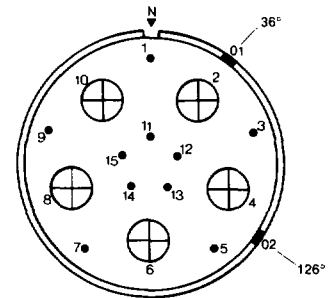
Qty.	Size (AWG)	Service Voltage Rating
2	4	D
12	16	A



### 15 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	24	Pin Socket	40P 40S	ZP-24-40P ZP-24-40S

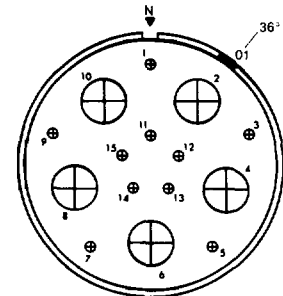
Qty.	Size (AWG)	Service Voltage Rating
5	1/0	D
10	16	D



### 15 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C24	Pin Socket	47P 47S	ZP-C24-47P ZP-C24-47S

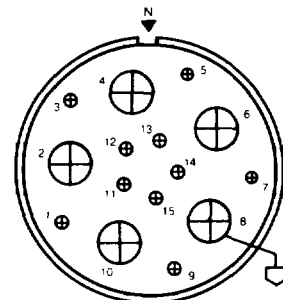
Qty.	Size (AWG)	Service Voltage Rating
5	1/0	D
10	12	A



### 15 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod I	Solder	C24	Pin Socket	81P 81S	ZP-C24-81P ZP-C24-81S

Qty.	Size (AWG)	Service Voltage Rating
5	1/0	D
10	12	A



#### Grounding Contact Termination Symbol

Symbol	Termination Type
⏏	Solder Well
⏏	Pressure
⏏	Crimp

#### Contact Symbols

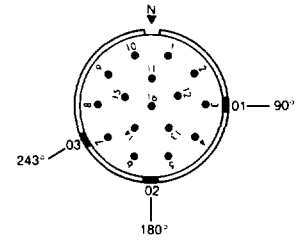
Symbol	Wire Size
◦	18
•	16
⊕	12
○	10
⊙	8
●	4
⊕	1/0
⊕	4/0
⊕	350 MCM

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ▲ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit
  - ⊕ Pre-assembled insert—Should be ordered mounted in barrel.
  - ⊕ Indicates configuration is UL listed when used with properly applied hardware
  - ⊕ Indicates configuration is UL recognized when used with properly applied hardware
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory)

### 16 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	16	Pin Socket	325PN 325SN	ZP-16-325PN ZP-16-325SN

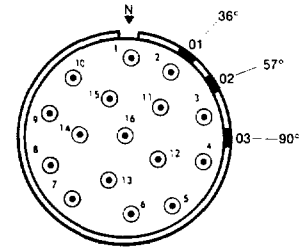
Qty.	Size (AWG)	Service Voltage Rating
16	16	D



### 16 CONTACTS

Mod II	Crimp	20	Pin Socket	358PN 358SN	ZP-20-358PN ZP-20-358SN
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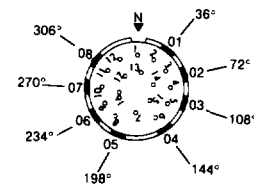
16	8	•A
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### 17 CONTACTS

Mod II	Crimp	12	Pin Socket	323PN 323SN	ZP-12-323PN ZP-12-323SN
Mod III	Crimp	12	Pin Socket	623PN 623SN	☆ ☆

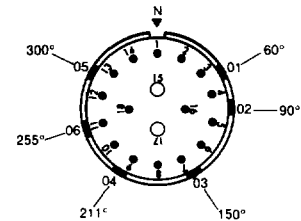
17	18	•A
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### 18 CONTACTS

Mod II	Crimp	16	Pin Socket	324PN 324SN	ZP-16-324PN ZP-16-324SN
Mod III	Crimp	16	Pin Socket	624PN 624SN	☆ ☆

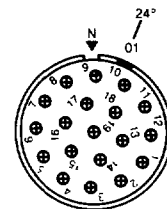
2	10	D
16	16	



### 19 CONTACTS

Mod II	Crimp	16	Pin Socket	377PN 377SN	ZP-16-377PN ZP-16-377SN
Mod III	Crimp	16	Pin Socket	677PN 677SN	☆ ☆

19	12	•A
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#### Grounding Contact Termination Symbol

Symbol	Termination Type	Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
	Solder Well											
	Pressure											
	Crimp											

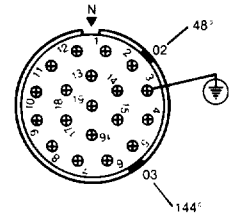
- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - Small contacts disengage 1/8" before large contacts to provide time delay in control circuit
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓝ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).



### 19 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	16	Pin Socket	312PN 312SN	ZP-16-312PN ZP-16-312SN

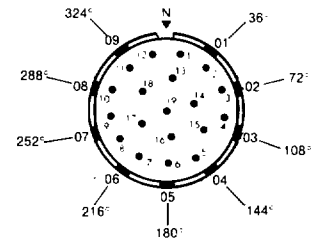
Qty.	Size (AWG)	Service Voltage Rating
19	12	•A



### 19 CONTACTS

Mod II	Crimp	16	Pin Socket	355PN 355SN	ZP-16-355PN ZP-16-355SN
Mod III	Crimp	16	Pin Socket	655PN 655SN	☆ ☆

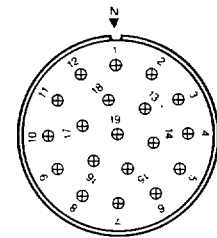
19	16	A
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### 19 CONTACTS

Mod III	Crimp	20	Pin Socket	676PN 676SN	☆ ☆
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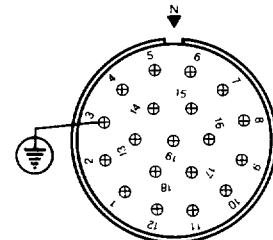
19	12	D
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### 19 CONTACTS

Mod III	Crimp	20	Pin Socket	688PN 688SN	☆ ☆
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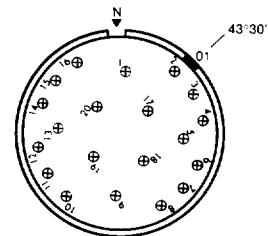
19	12	D
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### 20 CONTACTS

Mod I	Solder	20	Pin Socket	32P 32S	ZP-20-32P ZP-20-32S
Mod II	Crimp	20	Pin Socket	332PN 332SN	ZP-20-332PN ZP-20-332SN
Mod III	Crimp	20	Pin Socket	632PN 632SN	☆ ☆

20	12	• B Center • A Outer
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Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.

♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.

⊕ Pre-assembled insert—Should be ordered mounted in barrel

Ⓢ Indicates configuration is UL listed when used with properly applied hardware.

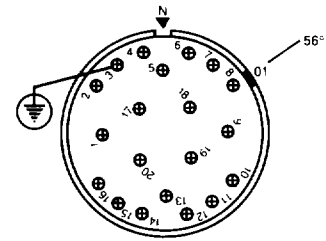
Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.

Note. Highlighted catalog number indicates insert readily available from stock (consult factory).

### 20 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	20	Pin Socket	387PN 387SN	ZP-20-387PN ZP-20-387SN

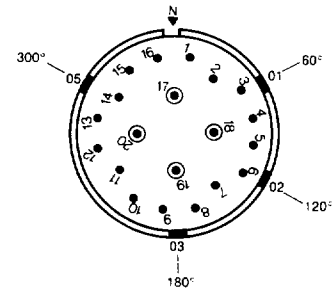
Qty.	Size (AWG)	Service Voltage Rating
20	12	B Center A Outer



### 20 CONTACTS

Mod II	Crimp	20	Pin Socket	334PN 334SN	ZP-20-334PN ZP-20-334SN
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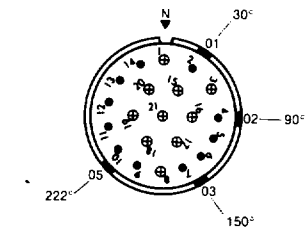
4	8	D
16	16	D



### 21 CONTACTS

Mod II	Crimp	16	Pin Socket	344PN 344SN	ZP-16-344PN ZP-16-344SN
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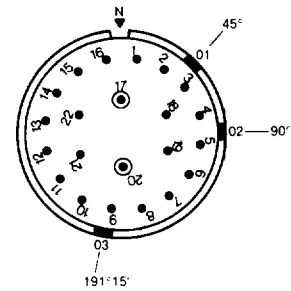
10	12	A
11	16	A



### 22 CONTACTS

Mod II	Crimp	20	Pin Socket	331PN 331SN	ZP-20-331PN ZP-20-331SN
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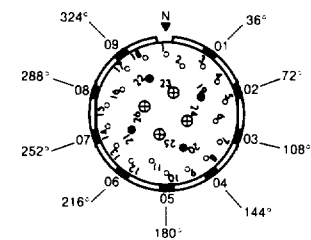
2	8	E
20	16	D



### 26 CONTACTS

Mod I	Solder	16	Pin Socket	37P 37S	ZP-16-37P ZP-16-37S
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4	12	A
4	16	A
18	18	A



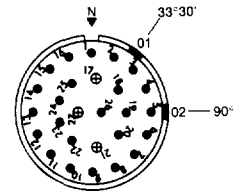
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ✱ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.
- Note. Highlighted catalog number indicates insert readily available from stock (consult factory).

### 27 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	16	Pin Socket	335PN 335SN	ZP-16-335PN ZP-16-335SN
Mod III	Crimp	16	Pin Socket	635PN 635SN	☆ ☆

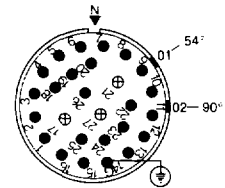
Qty.	Size (AWG)	Service Voltage Rating
3	12	A
24	16	A



### 27 CONTACTS

Mod III	Crimp	16	Pin Socket	673PN 673SN	☆ ☆
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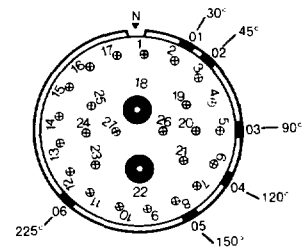
24	16	A
3	12	A



### 27 CONTACTS

Mod II	Crimp	20	Pin Socket	374PN 374SN	ZP-20-374PN ZP-20-374SN
Mod III	Crimp	20	Pin Socket	674PN 674SN	☆ ☆

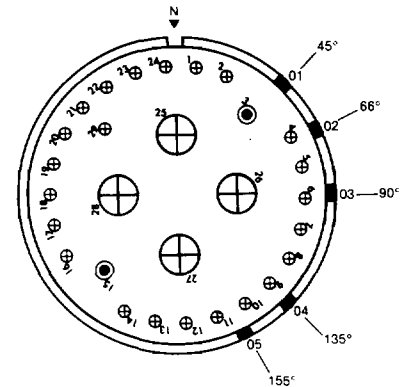
2	4	D
25	12	A



### 29 CONTACTS

Mod II	Crimp	C28	Pin Socket	328PN 328SN	ZP-C28-328PN ZP-C28-328SN
Mod III	Crimp	C28	Pin Socket	628PN 628SN	☆ ☆

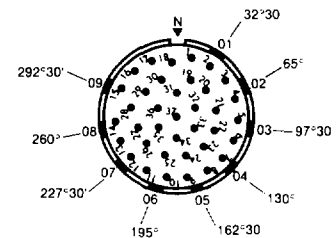
4	1/0	D
2	8	D
23	12	A



### 37 CONTACTS

Mod II	Crimp	16	Pin Socket	321PN 321SN	ZP-16-321PN ZP-16-321SN
Mod III	Crimp	16	Pin Socket	621PN 621SN	☆ ☆

37	16	A
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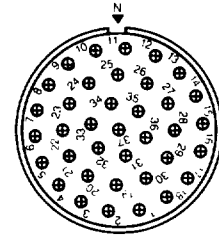
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ⊕ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 37 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	20	Pin Socket	386PN 386SN	ZP-20-386PN ZP-20-386SN
Mod III	Crimp	20	Pin Socket	686PN 686SN	☆ ☆

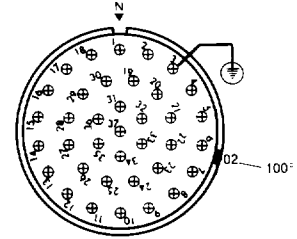
Qty.	Size (AWG)	Service Voltage Rating
37	12	•A



### 37 CONTACTS

Mod II	Crimp	20	Pin Socket	350PN 350SN	ZP-20-350PN ZP-20-350SN
Mod III	Crimp	20	Pin Socket	650PN 650SN	☆ ☆

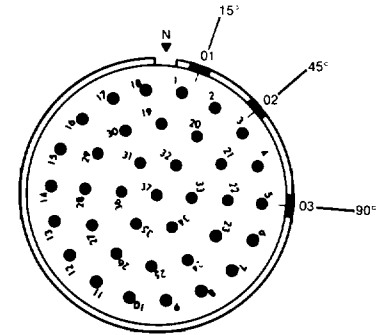
37	12	•A
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### 37 CONTACTS

Mod II	Crimp	24	Pin Socket	371PN 371SN	ZP-24-371PN ZP-24-371SN
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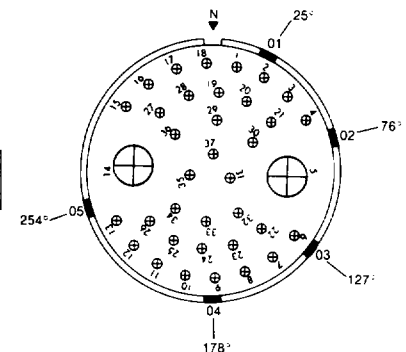
37	16	D
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### 37 CONTACTS

Mod I	Solder	C24	Pin Socket	36P 36S	ZP-C24-36P ZP-C24-36S
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2	1/0	D
35	12	A



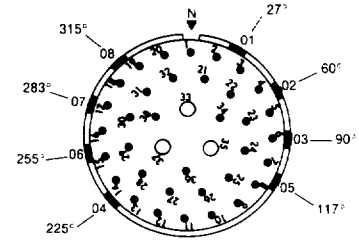
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel!
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓜ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 38 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	20	Pin Socket	323PN 323SN	ZP-20-323PN ZP-20-323SN
Mod III	Crimp	20	Pin Socket	623PN 623SN	☆ ☆

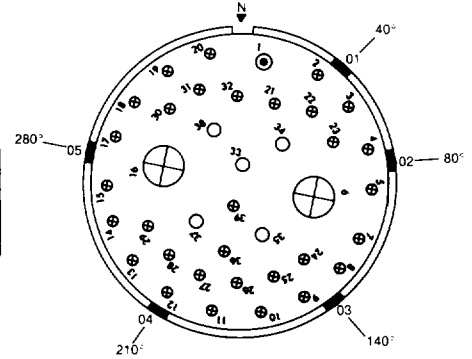
Qty.	Size (AWG)	Service Voltage Rating
3	10	A
35	16	A



### 39 CONTACTS

Mod I	Solder	C28	Pin Socket	12P 12S	ZP-C28-12P ZP-C28-12S
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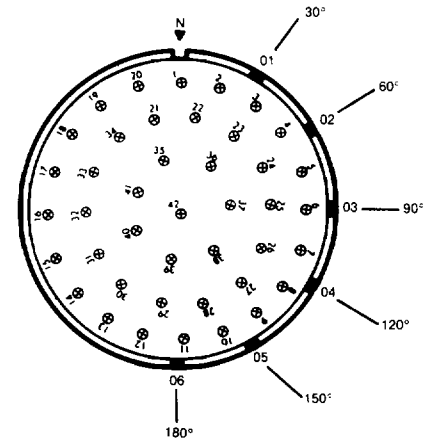
1	8	D
2	1/0	D
5	10	S
31	12	A



### 42 CONTACTS

Mod II	Crimp	28	Pin Socket	339PN 339SN	ZP-28-339PN ZP-28-339SN
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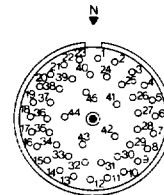
42	12	D
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### 46 CONTACTS

Mod II	Crimp	16	Pin Socket	371PN 371SN	ZP-16-371PN ZP-16-371SN
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45	18	A
1	8	A



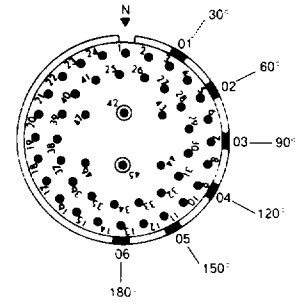
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.  
 ▲ Small contacts disengage 1/2" before large contacts to provide time delay in control circuit  
 † Pre-assembled insert—Should be ordered mounted in barrel.  
 Ⓢ Indicates configuration is UL listed when used with properly applied hardware.  
 Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.  
 Note: Highlighted catalog number indicates insert readily available from stock (consult factory)

### 47 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	20	Pin Socket	354PN 354SN	ZP-20-354PN ZP-20-354SN

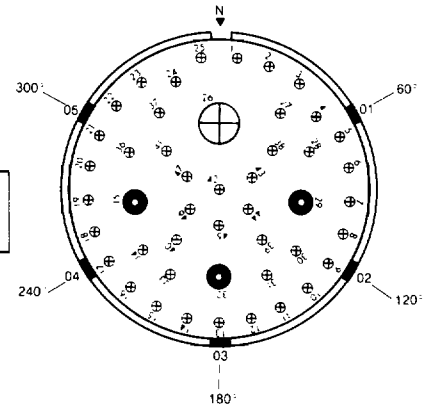
Qty.	Size (AWG)	Service Voltage Rating
2	8	D
45	16	A



### 47 CONTACTS

Mod I	Solder	C28	Pin Socket	15P 15S	ZP-C28-15P ZP-C28-15S
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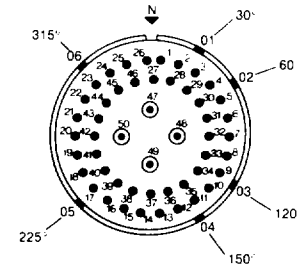
1	1/0	D
3	4	D
43	12	A



### 50 CONTACTS

Mod III	Crimp	20	Pin Socket	673PN 673SN	☆ ☆
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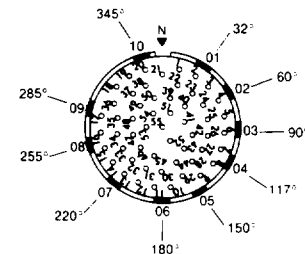
4	8	D
46	16	A



### 55 CONTACTS

Mod III	Crimp	16	Pin Socket	640PN 640SN	☆ ☆
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55	18	•Inst.
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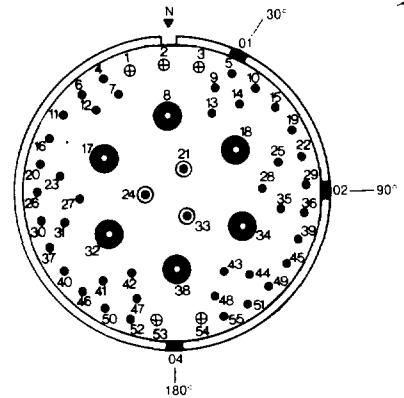
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓜ Indicates configuration is UL recognized when used with properly applied hardware.
- Note. Highlighted catalog number indicates insert readily available from stock (consult factory).

### 55 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	28	Pin Socket	324PN 324SN	ZP-28-324PN ZP-28-324SN

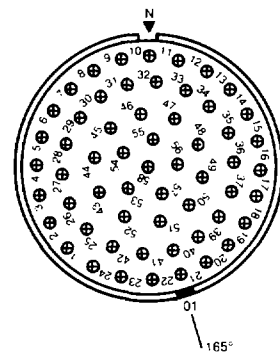
Qty.	Size (AWG)	Service Voltage Rating
3	8	D
6	4	•D
5	12	A
41	16	A



### 58 CONTACTS

Mod I	Solder	24	Pin Socket	84P 84S	ZP-24-84P ZP-24-84S
Mod II	Crimp	24	Pin Socket	384PN 384SN	ZP-24-384PN ZP-24-384SN

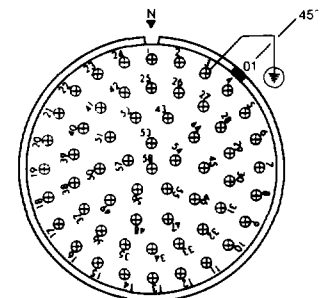
58	12	•A
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### 58 CONTACTS

Mod II	Crimp	24	Pin Socket	352PN 352SN	ZP-24-352PN ZP-24-352SN
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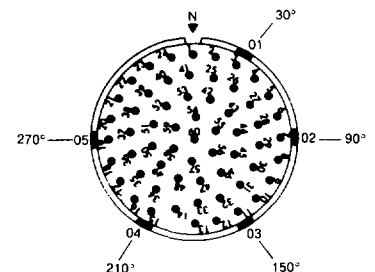
58	12	•A
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### 60 CONTACTS

Mod I	Solder	20	Pin Socket	35P 35S	ZP-20-35P ZP-20-35S
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60	16	•A
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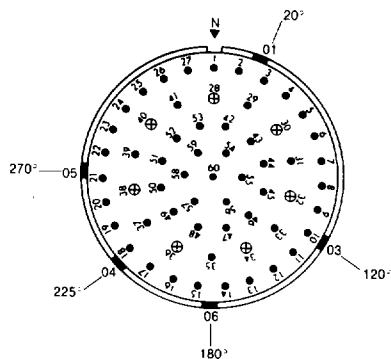
Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24
  - ♣ Small contacts disengage 1/2" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).

### 60 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	24	Pin Socket	331PN 331SN	ZP-24-331PN ZP-24-331SN

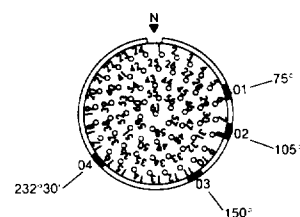
Qty.	Size (AWG)	Service Voltage Rating
7	12	A
53	16	A



### 61 CONTACTS

Mod II	Crimp	16	Pin Socket	333PN 333SN	ZP-16-333PN ZP-16-333SN
Mod III	Crimp	16	Pin Socket	633PN 633SN	☆ ☆

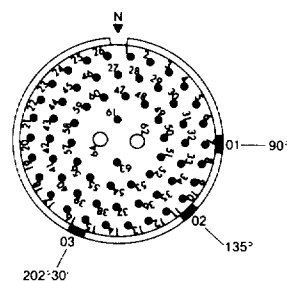
61	18	INST.
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### 64 CONTACTS

Mod II	Crimp	20	Pin Socket	329PN 329SN	ZP-20-329PN ZP-20-329SN
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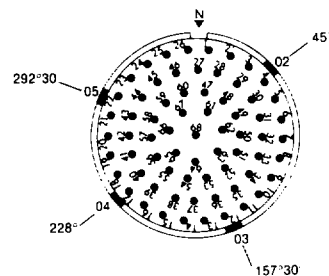
2	10	A
62	16	A



### 68 CONTACTS

Mod II	Crimp	20	Pin Socket	313PN 313SN	ZP-20-313PN ZP-20-313SN
Mod III	Crimp	20 <td>Pin Socket</td> <td>613PN 613SN</td> <td>☆ ☆</td>	Pin Socket	613PN 613SN	☆ ☆

68	16	A
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Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

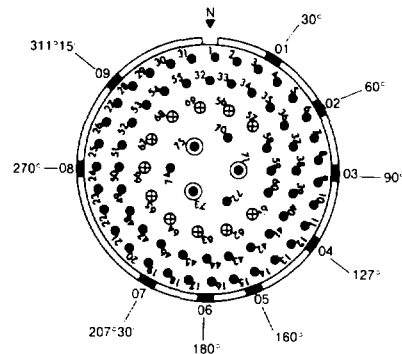
- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - Small contacts disengage 1/2" before large contacts to provide time delay in control circuit
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓢ Indicates configuration is UL listed when used with properly applied hardware
  - Ⓡ Indicates configuration is UL recognized when used with properly applied hardware
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory).



### 75 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	24	Pin Socket	354PN 354SN	ZP-24-354PN ZP-24-354SN

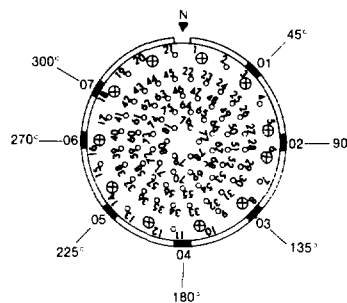
Qty.	Size (AWG)	Service Voltage Rating
3	8	A
11	12	•A
61	16	A



### 81 CONTACTS

Mod II	Crimp	20	Pin Socket	344PN 344SN	ZP-20-344PN ZP-20-344SN

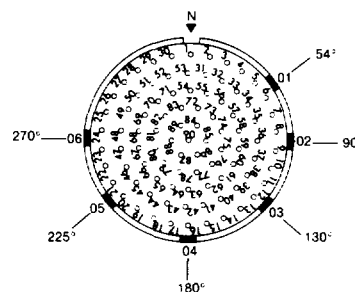
11	12	•A
70	18	A



### 90 CONTACTS

Mod II	Crimp	20	Pin Socket	345PN 345SN	ZP-20-345PN ZP-20-345SN

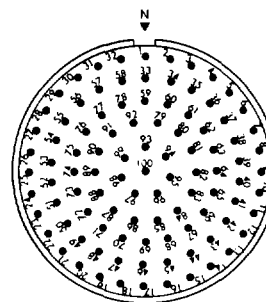
90	18	•A
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### 100 CONTACTS

Mod II	Crimp	24	Pin Socket	313PN 313SN	ZP-24-313PN ZP-24-313SN
Mod III	Crimp	24	Pin Socket	613PN 613SN	☆ ☆

100	16	•A
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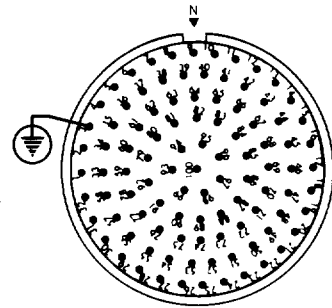
Grounding Contact Termination Symbol			Contact Symbols	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp										

- ◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24.
  - ♣ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.
  - ☆ Pre-assembled insert—Should be ordered mounted in barrel.
  - Ⓜ Indicates configuration is UL listed when used with properly applied hardware.
  - Ⓜ Indicates configuration is UL recognized when used with properly applied hardware.
- Note: Highlighted catalog number indicates insert readily available from stock (consult factory)

### 100 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	24	Pin Socket	385PN 385SN	ZP-24-385PN ZP-24-385SN

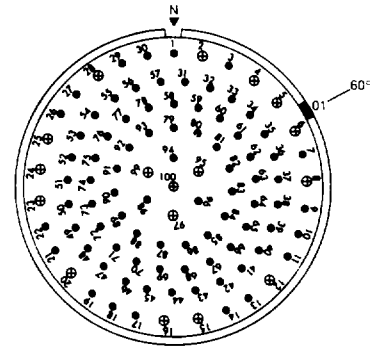
Qty.	Size (AWG)	Service Voltage Rating
100	16	A



### 100 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	28	Pin Socket	314PN 314SN	ZP-28-314PN ZP-28-314SN

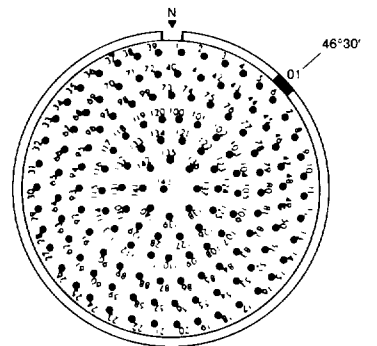
Qty.	Size (AWG)	Service Voltage Rating
17 83	12 16	A A



### 143 CONTACTS

Style	Wire Terminal Type	Shell Size	Insert Type	Dash Number	Catalog Number
Mod II	Crimp	28	Pin Socket	322PN 322SN	ZP-28-322PN ZP-28-322SN

Qty.	Size (AWG)	Service Voltage Rating
143	16	•A



Grounding Contact Termination Symbol			Contact Symbols	Wire Size	18	16	12	10	8	4	1/0	4/0	350 MCM
Solder Well	Pressure	Crimp											

◆ For non-circuit breaking service only—See Service Voltage Rating table on page 24  
 ⚡ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ⚙ Pre-assembled insert—Should be ordered mounted in barrel.  
 Ⓢ Indicates configuration is UL listed when used with properly applied hardware.  
 Ⓢ Indicates configuration is UL recognized when used with properly applied hardware.  
 Note. Highlighted catalog number indicates insert readily available from stock (consult factory)