



July, 1987  
New Information  
Mailed to: E, D, C/41-400B

In FT-31 Flexitest Case<sup>①</sup>

# Type IRV Phase Directional Overcurrent Relay

## IRV Relay

Range (Amps)		ICS Unit (Amps)	Complete Relay Style Number						
Time Unit	Inst. Unit		Time Characteristics						
			Short	Long	Definite	Moderately Inverse	Inverse	Very Inverse	Extremely Inverse
			IRV-2	IRV-5	IRV-6	IRV-7	IRV-8	IRV-9	IRV-11
<b>120 VAC, 60 HZ, (48, 125 and 250 VDC Trip)</b>									
5-2.5	2-8	2-2.0	290B089A09	290B090A09	290B091A09	290B092A09	290B093A09	290B094A09	290B095A09
5-2.5	4-16	2-2.0	290B089A10	290B090A10	290B091A10	290B092A10	290B093A10	290B094A10	290B095A10
5-2.5	10-40	2-2.0	290B089A11	290B090A11	290B091A11	290B092A11	290B093A11	290B094A11	290B095A11
5-2.5	20-80	2-2.0	290B089A12	290B090A12	290B091A12	290B092A12	290B093A12	290B094A12	290B095A12
2-6	4-16	2-2.0	290B089A13	290B090A13	290B091A13	290B092A13	290B093A13	290B094A13	290B095A13
2-6	10-40	2-2.0	290B089A14	290B090A14	290B091A14	290B092A14	290B093A14	290B094A14	290B095A14
2-6	20-80	2-2.0	290B089A15	290B090A15	290B091A15	290B092A15	290B093A15	290B094A15	290B095A15
4-12	10-40	2-2.0	290B089A16	290B090A16	290B091A16	290B092A16	290B093A16	290B094A16	290B095A16
4-12	20-80	2-2.0	290B089A17	290B090A17	290B091A17	290B092A17	290B093A17	290B094A17	290B095A17
5-2.5	1-4	2-2.0	290B089A18	290B090A18	290B091A18	290B092A18	290B093A18	290B094A18	290B095A18
4-12	4-16	2-2.0	290B089A19	290B090A19	290B091A19	290B092A19	290B093A19	290B094A19	290B095A19
4-12	2-8	2-2.0	.....	.....	.....	290B092A20	.....	290B094A20	.....
2-6	2-8	2-2.0	.....	.....	.....	.....	.....	290B094A21	.....
4-12	40-160	2-2.0	.....	.....	290B091A20	.....	290B093A20	.....	.....
5-2.5	5-2	2-2.0	.....	.....	290B091A21	.....	.....	.....	.....
4-12	1-4	2-2.0	.....	.....	290B091A33	.....	.....	.....	.....
2-6	10-40	1.0	.....	.....	.....	290B092A33	.....	.....	.....
2-6	4-16	1.0	.....	.....	.....	.....	.....	290B094A33	.....
4-12	10-40	1.0	.....	.....	.....	.....	.....	290B094A34	.....
<b>120 VAC, 50 HZ, (48, 125 and 250 VDC Trip)</b>									
5-2.5	2-8	2-2.0	290B089A22	290B090A22	290B091A22	290B092A22	290B093A22	290B094A22	290B095A22
5-2.5	4-16	2-2.0	290B089A23	290B090A23	290B091A23	290B092A23	290B093A23	290B094A23	290B095A23
5-2.5	10-40	2-2.0	290B089A24	290B090A24	290B091A24	290B092A24	290B093A24	290B094A24	290B095A24
5-2.5	20-80	2-2.0	290B089A25	290B090A25	290B091A25	290B092A25	290B093A25	290B094A25	290B095A25
2-6	4-16	2-2.0	290B089A26	290B090A26	290B091A26	290B092A26	290B093A26	290B094A26	290B095A26
2-6	10-40	2-2.0	290B089A27	290B090A27	290B091A27	290B092A27	290B093A27	290B094A27	290B095A27
2-6	20-80	2-2.0	290B089A28	290B090A28	290B091A28	290B092A28	290B093A28	290B094A28	290B095A28
4-12	10-40	2-2.0	290B089A29	290B090A29	290B091A29	290B092A29	290B093A29	290B094A29	290B095A29
4-12	20-80	2-2.0	290B089A30	290B090A30	290B091A30	290B092A30	290B093A30	290B094A30	290B095A30
5-2.5	1-4	2-2.0	290B089A31	290B090A31	290B091A31	290B092A31	290B093A31	290B094A31	290B095A31
4-12	4-16	2-2.0	290B089A32	290B090A32	290B091A32	290B092A32	290B093A32	290B094A32	290B095A32
<b>208 VAC, 60 HZ, (48, 125 and 250 VDC Trip)</b>									
4-12	10-40	2-2.0	.....	.....	.....	670B207A09	.....	.....	.....
4-12	20-80	2-2.0	.....	.....	.....	670B207A10	670B207A21	.....	.....
2-6	10-40	2-2.0	.....	.....	.....	670B207A11	.....	670B207A29	.....
<b>120 VAC, 60 HZ, (12 and 24 VDC Trip)<sup>②</sup></b>									
5-2.5	2-8	2-2.0	292B038A09	292B039A09	292B040A09	292B041A09	292B042A09	292B043A09	292B044A09
5-2.5	4-16	2-2.0	292B038A10	292B039A10	292B040A10	292B041A10	292B042A10	292B043A10	292B044A10
5-2.5	10-40	2-2.0	292B038A11	292B039A11	292B040A11	292B041A11	292B042A11	292B043A11	292B044A11
5-2.5	20-80	2-2.0	292B038A12	292B039A12	292B040A12	292B041A12	292B042A12	292B043A12	292B044A12
2-6	4-16	2-2.0	292B038A13	292B039A13	292B040A13	292B041A13	292B042A13	292B043A13	292B044A13
2-6	10-40	2-2.0	292B038A14	292B039A14	292B040A14	292B041A14	292B042A14	292B043A14	292B044A14
2-6	20-80	2-2.0	292B038A15	292B039A15	292B040A15	292B041A15	292B042A15	292B043A15	292B044A15
4-12	10-40	2-2.0	292B038A16	292B039A16	292B040A16	292B041A16	292B042A16	292B043A16	292B044A16
4-12	20-80	2-2.0	292B038A17	292B039A17	292B040A17	292B041A17	292B042A17	292B043A17	292B044A17
5-2.5	1-4	2-2.0	292B038A18	292B039A18	292B040A18	292B041A18	292B042A18	292B043A18	292B044A18
4-12	4-16	2-2.0	292B038A19	292B039A19	292B040A19	292B041A19	292B042A19	292B043A19	292B044A19
2-6	4-16	2-2.0	.....	.....	.....	.....	292B042A35 <sup>③</sup>	.....	.....
<b>120 VAC, 50 HZ, (24 VDC Trip)</b>									
5-2.5	2-8	2-2.0	292B038A22	292B039A22	292B040A22	292B041A22	292B042A22	292B043A22	292B044A22
5-2.5	4-16	2-2.0	292B038A23	292B039A23	292B040A23	292B041A23	292B042A23	292B043A23	292B044A23
5-2.5	10-40	2-2.0	292B038A24	292B039A24	292B040A24	292B041A24	292B042A24	292B043A24	292B044A24
5-2.5	20-80	2-2.0	292B038A25	292B039A25	292B040A25	292B041A25	292B042A25	292B043A25	292B044A25
2-6	4-16	2-2.0	292B038A26	292B039A26	292B040A26	292B041A26	292B042A26	292B043A26	292B044A26
2-6	10-40	2-2.0	292B038A27	292B039A27	292B040A27	292B041A27	292B042A27	292B043A27	292B044A27
2-6	20-80	2-2.0	292B038A28	292B039A28	292B040A28	292B041A28	292B042A28	292B043A28	292B044A28
4-12	10-40	2-2.0	292B038A29	292B039A29	292B040A29	292B041A29	292B042A29	292B043A29	292B044A29
4-12	20-80	2-2.0	292B038A30	292B039A30	292B040A30	292B041A30	292B042A30	292B043A30	292B044A30
5-2.5	1-4	2-2.0	292B038A31	292B039A31	292B040A31	292B041A31	292B042A31	292B043A31	292B044A31
4-12	4-16	2-2.0	292B038A32	292B039A32	292B040A32	292B041A32	292B042A32	292B043A32	292B044A32

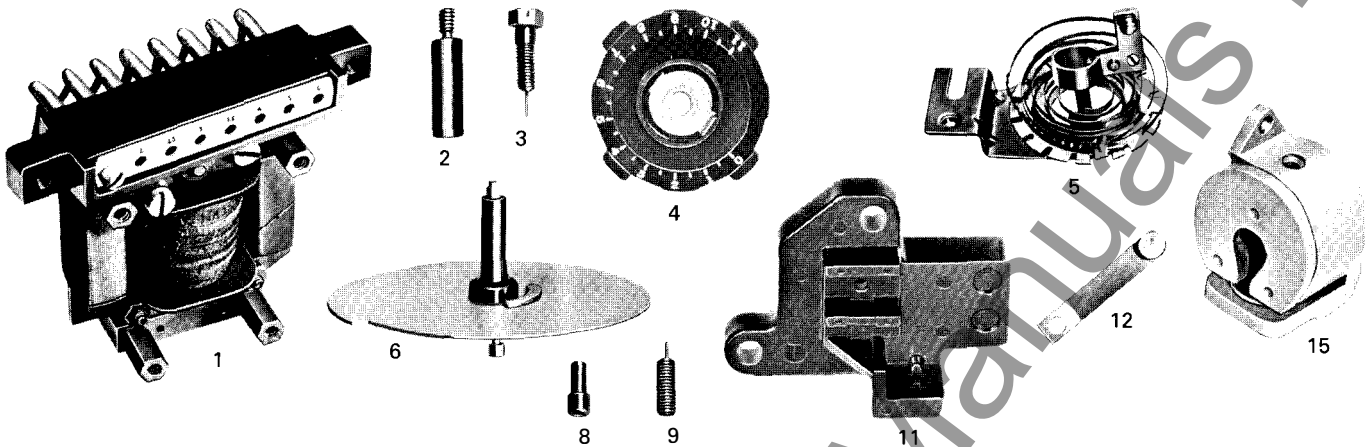
① For Flexitest case parts refer to RPD 41-076A1.  
② All IRV relays on this table are 24 VDC trip, except Style 292B042A35 which is 12 VDC trip.

### Ordering Information

- Give style number and name of part.
- Give the complete nameplate readings.
- State method of shipment desired.
- Send all orders or correspondence to nearest sales office of the company.



E Element



E Element

Ref. No.	Description of Part	Style Number
1	Electro magnet.....	See Table*
2	Insulated Tap Screw.....	1545 282 <sup>Ⓞ</sup>
3	Upper Bearing Screw.....	52D6291G03*
4	Dial Assembly.....	1878 801
5	Moving Contact, Spring and Adjuster Assembly.....	See Table*
6	Disc and Shaft Assembly.....	880A772G12
7Δ	Upper Bearing.....	289B392G01
8	Lower Bearing.....	184A440G01
9	Lower Bearing Screw.....	3499A37G09*
10Δ	Nut for Lower Bearing Screw.....	203 056
11	Insulated Block for Stationary Contact.....	33B3110H02
12	Stationary Contact.....	3489A63G09*
13Δ	Contact Plate.....	1732 759
14Δ	Nut to Mount Stationary Contact.....	1008 149
15	Permanent Magnet.....	See Table

Moving Contact, Spring and Adjuster Assembly

Relay Type	Style Number Single Trip
IRV-2	880A721G10
IRV-5	880A721G09
IRV-6	880A721G09
IRV-7	880A721G09
IRV-8	880A721G09
IRV-9	880A721G09
IRV-11	880A721G11

Note: Parts indented are included in the part under which they are indented.

Ⓞ Two (2) used.

Δ Not illustrated.

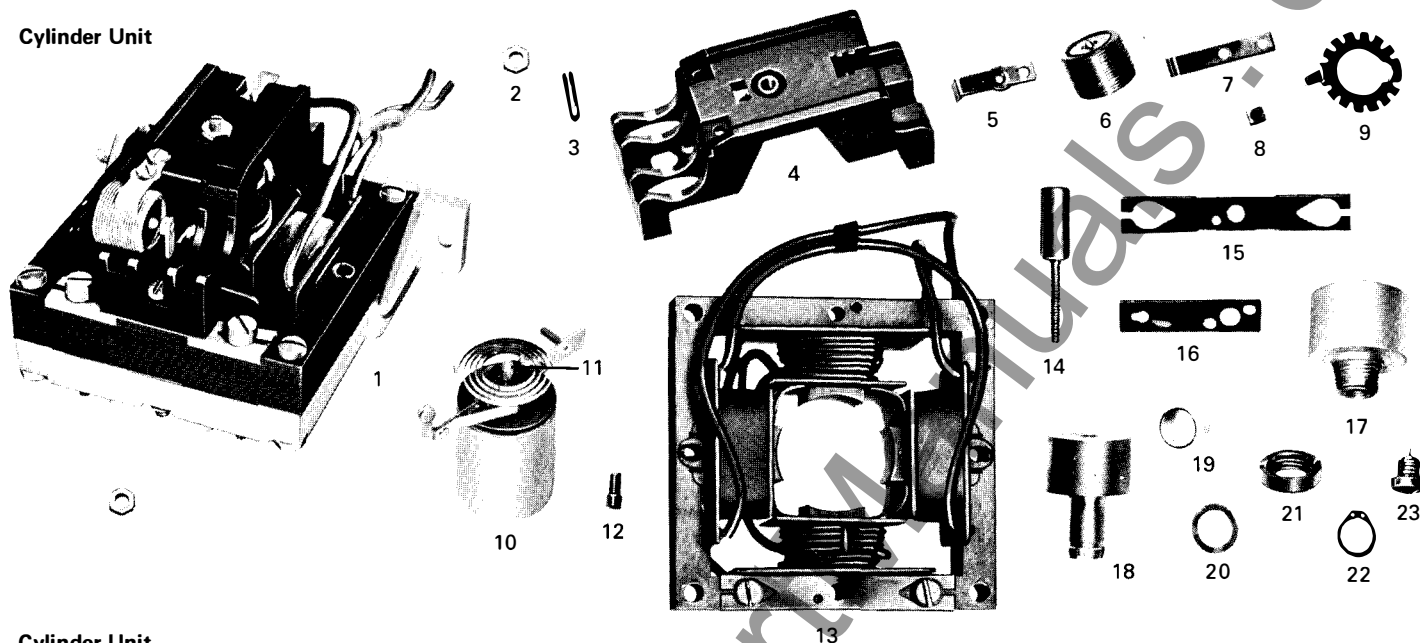
\* Recommended for stock.

Electromagnet and Permanent Magnet

Relay Type	Style Number			Permanent Magnet
	Range (Amps)			
	.5-2.5	2-6	4-12	
IRV-2	183A476G05	183A476G10	183A476G15	1732 780
IRV-5	183A476G06	183A476G11	183A476G16	1732 779
IRV-6	183A476G06	183A476G11	183A476G16	1732 779
IRV-7	183A476G07	183A476G12	183A476G17	1732 780
IRV-8	183A476G08	183A476G13	183A476G18	1732 777
IRV-9	183A476G08	183A476G13	183A476G18	1732 777
IRV-11	183A476G09	183A476G14	183A476G19	1732 777



Cylinder Unit



Cylinder Unit

Ref. No.	Description of Part	Style Number
1	Cylinder Unit Complete.....	See Table <sup>Ⓔ</sup>
2	Nut for Upper Bearing.....	203 056
3	Upper Bearing Screw.....	3499A37G11*
4	Bridge and Insert.....	60A1533G03
5	Pressure Spring to Lock Stationary Contact.....	1730 953 <sup>ⓐ</sup>
6	Stationary Contact Assembly (L.H. and R.H.).....	3491A82G09 <sup>ⓐ</sup> <sup>Ⓤ</sup> *
6	Stationary Contact Assembly (L.H. and R.H.).....	3491A82G11 <sup>ⓐ</sup> <sup>Ⓤ</sup> *
7	Clamp for Spring Adjuster.....	1730 954
8	Nut for Spring Adjuster Clamp Screw.....	1008 149
9	Spring Adjuster.....	1730 950
10	Moving Element with Contact and Torque Spring (Less Adjuster).....	See Table <sup>ⓐ</sup> *
11	Upper Bearing.....	289B392G01
12	Lower Bearing.....	289B393G02
13	Electromagnet.....	See Table*
14	Plug Screw.....	1730 095 <sup>ⓐ</sup> <sup>Ⓤ</sup>
15	Upper Plug Clip.....	1730 939 <sup>Ⓤ</sup>
16	Lower Plug Clip.....	1730 096 <sup>ⓐ</sup> <sup>Ⓤ</sup>
17	Core.....	1730 942
18	Core (Long).....	289B502H01 <sup>Ⓤ</sup>
19	Spacer.....	186A069H09 <sup>Ⓤ</sup>
20	Washer.....	837 754 <sup>Ⓤ</sup>
21	Core Nut.....	1730 945
22	Retaining Ring.....	31D5056H03 <sup>Ⓤ</sup>
23	Lower Bearing Screw.....	3499A37G10*

Note: Parts indented are included in the part under which they are indented.

<sup>ⓐ</sup> Two (2) used.

<sup>Ⓤ</sup> This assembly is factory adjusted, do not tamper with cemented sealed screw and nut on contact support arm.

<sup>Ⓔ</sup> The cylinder unit and transformer style numbers are stamped on their frames.

<sup>Ⓤ</sup> For 50 hertz only.

<sup>ⓐ</sup> For 60 hertz only.

<sup>Ⓤ</sup> For lower cylinder units only.

<sup>ⓐ</sup> For upper cylinder units only.

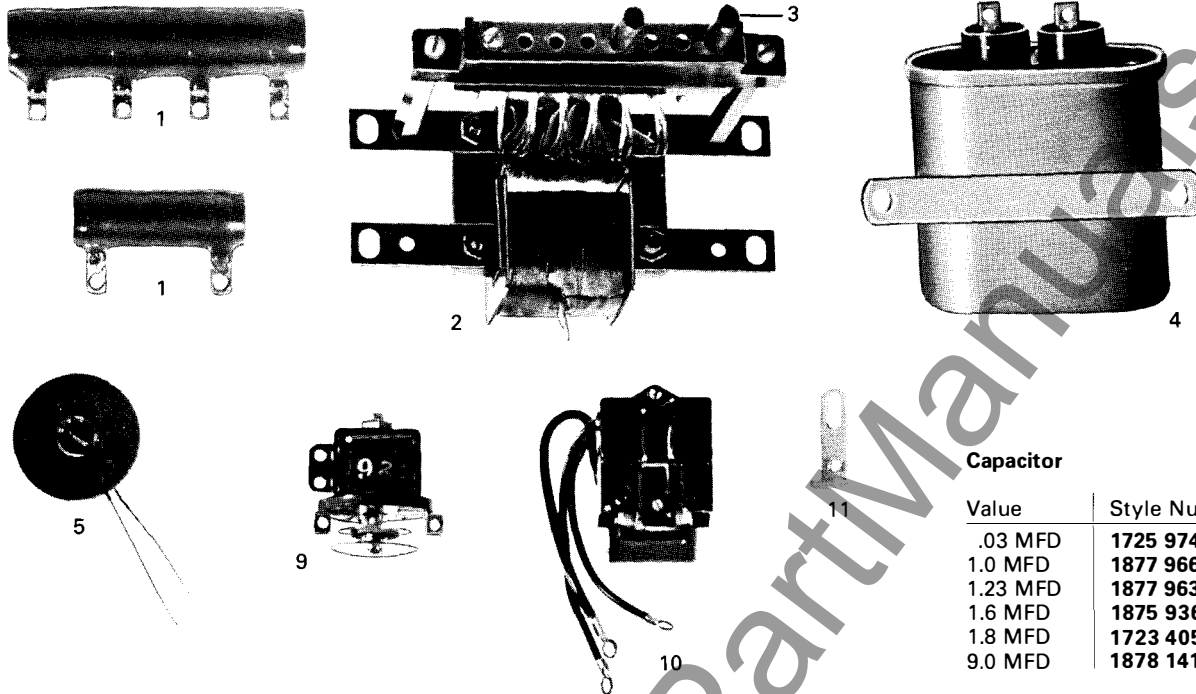
\* Recommended for stock.

Cylinder Unit<sup>Ⓔ</sup>

Complete Unit Style Number	Range (Amps)	Style Number of Part	
		Electromagnet	Moving Element
290B750G05 <sup>Ⓤ</sup>	2-8, 4-16, 10-40	289B172G09	184A930G11
290B750G06 <sup>Ⓤ</sup>	20-80	289B172G09	184A930G14
290B750G07 <sup>Ⓤ</sup> <sup>ⓐ</sup> <sup>Ⓤ</sup>	.5-2.5, 2-6	58C8336G23	184A930G30
290B750G08 <sup>Ⓤ</sup> <sup>ⓐ</sup> <sup>Ⓤ</sup>	4-12	58C8336G24	184A930G30
290B750G09 <sup>Ⓤ</sup> <sup>ⓐ</sup> <sup>Ⓤ</sup>	.5-2.5, 2-6	290B483G13	184A930G30
290B750G10 <sup>Ⓤ</sup> <sup>ⓐ</sup> <sup>Ⓤ</sup>	4-12	290B483G14	184A930G30



**Common Parts**



**IRV Common Parts**

Ref. No.	Description of Part	Style Number
1	Resistor .....	See Table*
2	Transformer with Tap Block .....	See Table*
3	Tap Screw .....	1545 282 <sup>ⓐ</sup>
4	Capacitor .....	See Table*
5	Varistor .....	183A122H02*
6Δ	Transformer .....	670B166G01 <sup>ⓑ</sup> *
7Δ	Rectifier .....	508C304H12*
8Δ	Rectifier Assembly .....	288B816G38*
9	Contactor Switch .....	3490A22G18 <sup>Ⓒ</sup> <sup>Ⓓ</sup> *
9	Contactor Switch .....	3490A30G12 <sup>Ⓔ</sup> <sup>ⓑ</sup> *
9	Contactor Switch .....	3490A30G13 <sup>Ⓕ</sup> <sup>Ⓓ</sup> *
10	ICS Unit .2-2 Amp, Single Trip, 'T' .....	3491A37G09 <sup>Ⓖ</sup> *
10	ICS Unit .2-2 Amp, Single Trip, '1' .....	3491A37G14 <sup>Ⓖ</sup> *
10	ICS Unit 1.0 Amp, Single Trip, 'T' .....	3491A37G35 <sup>Ⓖ</sup> *
10	ICS Unit 1.0 Amp, Single Trip, '1' .....	3491A36G32 <sup>Ⓖ</sup> *
11	Stationary Contact for ICS Unit .....	1732 868 <sup>Ⓕ</sup> *

Note: Parts indented are included in the part under which they are indented.  
<sup>Ⓒ</sup> For contactor switch and ICS unit parts refer to RPD 41-852A1.  
<sup>ⓑ</sup> Two (2) used.  
<sup>Ⓓ</sup> Used in IRV relays with 48, 125 and 250 VDC trip only.  
<sup>Ⓔ</sup> Used in IRV relays with 24 VDC trip only.  
<sup>Ⓕ</sup> Used in IRV relays with 12 VDC trip only.  
<sup>Ⓖ</sup> Used in IRV relays with 208 VAC rating only.  
<sup>Ⓖ</sup> The cylinder unit and transformer style numbers are stamped on their frames.  
<sup>Ⓕ</sup> For 50 Hertz only.  
<sup>Ⓖ</sup> For 60 Hertz only.  
<sup>Δ</sup> Not illustrated.  
 \* Recommended for stock.

**Capacitor**

Value	Style Number
.03 MFD	1725 974
1.0 MFD	1877 966 <sup>Ⓖ</sup>
1.23 MFD	1877 963 <sup>Ⓖ</sup>
1.6 MFD	1875 936 <sup>Ⓖ</sup>
1.8 MFD	1723 405 <sup>Ⓖ</sup>
9.0 MFD	1878 141

**Transformer <sup>Ⓔ</sup>**

Rating (Amps)	Style Number	
	60 HZ	50 HZ
5-2	407C186G12	.....
1-4	407C186G13	407C186G19
2-8	407C186G14	407C186G21
4-16	407C186G15	407C186G20
10-40	407C186G16	407C186G22
20-80	407C186G17	407C186G23
40-160	407C186G26	.....

**Resistor**

Value	Style Number
26.5 OHMS 3.5 Inch Fixed	04D1299H44 <sup>Ⓖ</sup>
100 OHMS 2 Inch Fixed	1207 238 <sup>Ⓖ</sup>
600 OHMS 2 Inch Fixed	1267 283 <sup>Ⓖ</sup>
750 OHMS 2 Inch Fixed	1267 285 <sup>Ⓖ</sup>
6500 OHMS 3.5 Inch Tapped	184A626H02 <sup>Ⓖ</sup>



March, 1986  
 Supersedes RPD 41-133A2 Pages 1-2  
 dated March, 1971  
 Mailed to: E, D, C/41-400B

In FT-42 Flexitest Case<sup>①</sup>

# Type IRQ Directional Overcurrent Negative Sequence Relay

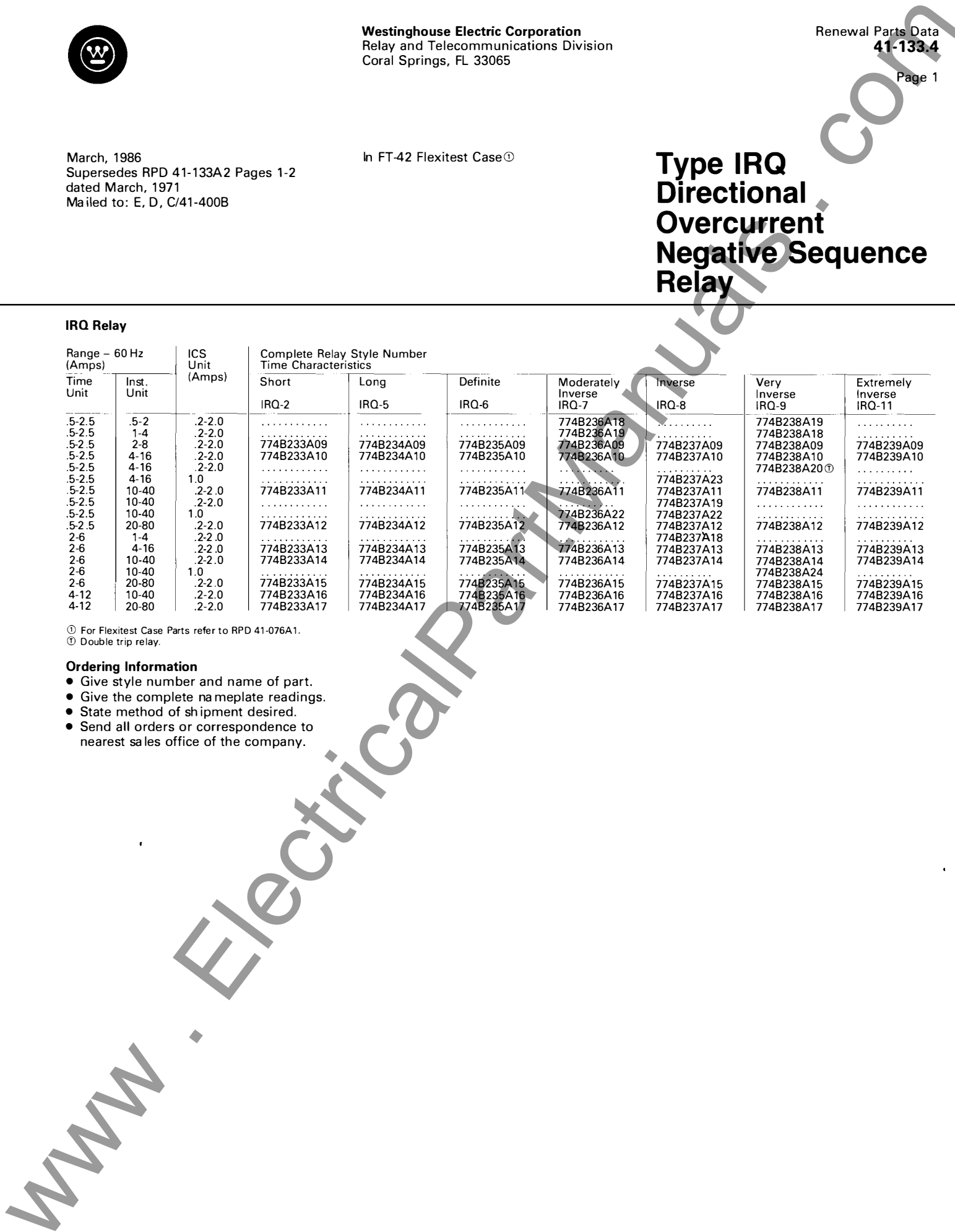
## IRQ Relay

Range - 60 Hz (Amps)		ICS Unit (Amps)	Complete Relay Style Number Time Characteristics						
Time Unit	Inst. Unit		Short IRQ-2	Long IRQ-5	Definite IRQ-6	Moderately Inverse IRQ-7	Inverse IRQ-8	Very Inverse IRQ-9	Extremely Inverse IRQ-11
5-2.5	5-2	2-2.0	.....	.....	.....	774B236A18	.....	774B238A19	.....
5-2.5	1-4	2-2.0	.....	.....	.....	774B236A19	.....	774B238A18	.....
5-2.5	2-8	2-2.0	774B233A09	774B234A09	774B235A09	774B236A09	774B237A09	774B238A09	774B239A09
5-2.5	4-16	2-2.0	774B233A10	774B234A10	774B235A10	774B236A10	774B237A10	774B238A10	774B239A10
5-2.5	4-16	2-2.0	.....	.....	.....	.....	.....	774B238A20 <sup>②</sup>	.....
5-2.5	4-16	1.0	.....	.....	.....	.....	774B237A23	.....	.....
5-2.5	10-40	2-2.0	774B233A11	774B234A11	774B235A11	774B236A11	774B237A11	774B238A11	774B239A11
5-2.5	10-40	2-2.0	.....	.....	.....	.....	774B237A19	.....	.....
5-2.5	10-40	1.0	.....	.....	.....	774B236A22	774B237A22	.....	.....
5-2.5	20-80	2-2.0	774B233A12	774B234A12	774B235A12	774B236A12	774B237A12	774B238A12	774B239A12
2-6	1-4	2-2.0	.....	.....	.....	.....	774B237A18	.....	.....
2-6	4-16	2-2.0	774B233A13	774B234A13	774B235A13	774B236A13	774B237A13	774B238A13	774B239A13
2-6	10-40	2-2.0	774B233A14	774B234A14	774B235A14	774B236A14	774B237A14	774B238A14	774B239A14
2-6	10-40	1.0	.....	.....	.....	.....	.....	774B238A24	.....
2-6	20-80	2-2.0	774B233A15	774B234A15	774B235A15	774B236A15	774B237A15	774B238A15	774B239A15
4-12	10-40	2-2.0	774B233A16	774B234A16	774B235A16	774B236A16	774B237A16	774B238A16	774B239A16
4-12	20-80	2-2.0	774B233A17	774B234A17	774B235A17	774B236A17	774B237A17	774B238A17	774B239A17

① For Flexitest Case Parts refer to RPD 41-076A1.  
 ② Double trip relay.

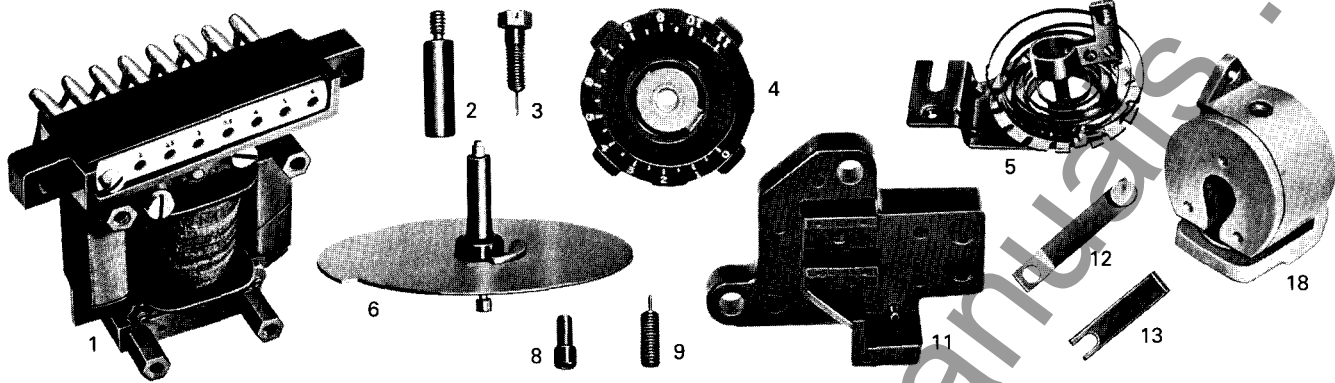
### Ordering Information

- Give style number and name of part.
- Give the complete nameplate readings.
- State method of shipment desired.
- Send all orders or correspondence to nearest sales office of the company.





"E" Element



"E" Element Parts

Ref. No.	Description of Part	Style Number
1	Electromagnet	See Table*
2	Insulated Tap Screw	1545282 <sup>ⓐ</sup>
3	Upper Bearing Screw	52D6291G03
4	Dial Assembly	1878801
5	Moving Contact, Spring and Adjuster Assembly	See Table*
6	Disc and Shaft Assembly	880A772G12
Δ7	Upper Bearing	1210530
8	Lower Bearing	184A440G01
9	Lower Bearing Screw	3499A37G09
Δ10	Nut for Lower Bearing Screw	203056
11	Insulated Block for Stationary Contact	33B3110H02
12	Stationary Contact for Single Trip Only	1732776*
12	Stationary Contact for Double Trip Only	52D6280G02 <sup>ⓐ</sup> *
13	Contact Plate - Single Trip	1732759
Δ14	Contact Plate - Double Trip	818794 <sup>ⓐ</sup>
Δ15	Spacer Washer for Double Trip Only	1878865 <sup>ⓐ</sup>
Δ16	Adjusting Screw for Stationary Contact Double Trip Only	718931 <sup>ⓐ</sup>
Δ17	Nut to Mount Stationary Contact	1008149
18	Permanent Magnet	See Table

Electromagnet and Permanent Magnet

Relay Type	Style Number Range (Amps)			Permanent Magnet
	.5-2.5	2-6	4-12	
IRQ-2	183A476G05	183A476G10	183A476G15	1732780
IRQ-5	183A476G06	183A476G11	183A476G16	1732777
IRQ-6	183A476G06	183A476G11	183A476G16	1732779
IRQ-7	183A476G07	183A476G12	183A476G17	1732780
IRQ-8	183A476G08	183A476G13	183A476G18	1732777
IRQ-9	183A476G08	183A476G13	183A476G18	1732777
IRQ-11	183A476G09	183A476G14	183A476G19	1732777

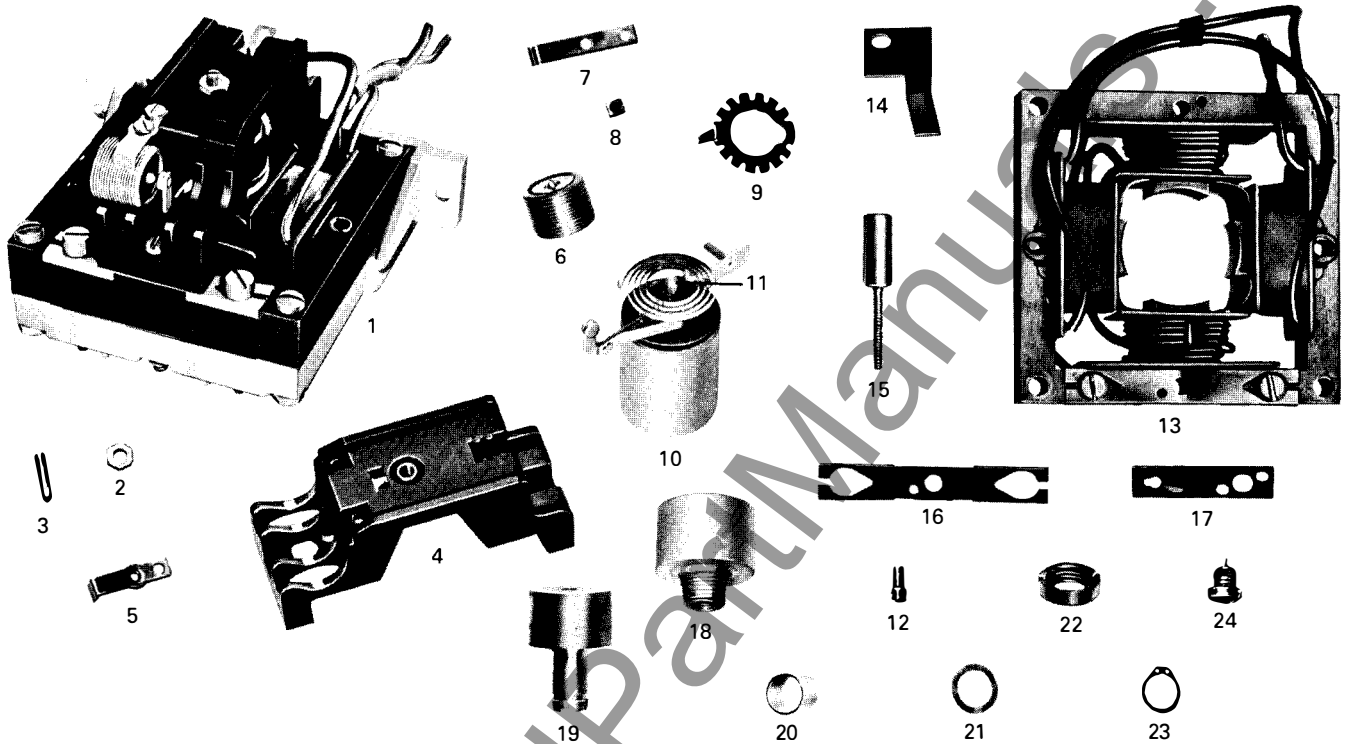
Moving Contact, Spring and Adjuster Assembly

Relay Type	Style Number	
	Single Trip	Double Trip
IRQ-2	880A721G10	.....
IRQ-5	880A721G09	.....
IRQ-6	880A721G09	.....
IRQ-7	880A721G09	.....
IRQ-8	880A721G09	.....
IRQ-9	880A721G09	880A721G14
IRQ-11	880A721G11	.....

NOTE: Parts indented are included in the part under which they are indented.  
<sup>ⓐ</sup> Two (2) used.  
<sup>Δ</sup> Not illustrated.  
 \* Recommended for stock.



Cylinder Unit



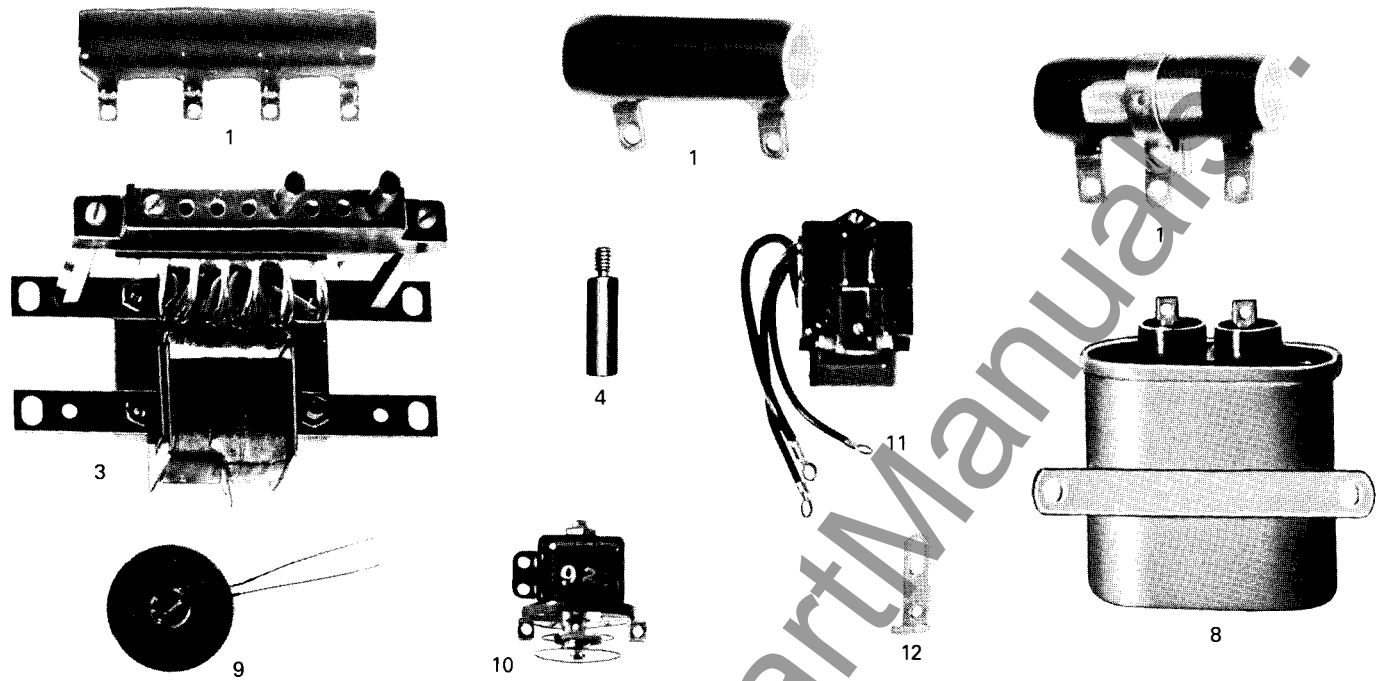
Cylinder Unit Parts

Ref. No.	Description of Part	Style Number
1	Cylinder Unit Complete	See Table <sup>Ⓔ</sup>
2	Nut for Upper Bearing Screw	203056
3	Upper Bearing Screw	3499A37G11
4	Bridge, Insert and Pin	183A660G01 <sup>Ⓔ</sup>
4	Bridge and Insert	60A1533G03 <sup>Ⓔ</sup>
5	Pressure Spring to Lock Stationary Contact	1730593
6	Stationary Contact Assembly (L.H.)	3491A82G09*
6	Stationary Contact Assembly (R.H.)	3491A82G09 <sup>Ⓔ</sup> *
7	Clamp for Spring Adjuster	1730954
8	Nut for Spring Adjuster Clamp Screw	1008149
9	Spring Adjuster	1730950
10	Moving Element with Contact and Torque Spring (Less Adjuster)	See Table <sup>Ⓔ</sup> *
11	Upper Bearing	289B392G01
12	Lower Bearing	289B393G02
13	Electromagnet	See Table*
14	Vane	183A218H01 <sup>Ⓔ</sup>
15	Plug Screw	1730095 <sup>Ⓔ</sup> <sup>Ⓔ</sup>
16	Upper Plug Clip	1730939 <sup>Ⓔ</sup>
17	Lower Plug Clip	1730096 <sup>Ⓔ</sup> <sup>Ⓔ</sup>
18	Core	1730942
19	Core (Long)	289B502H01 <sup>Ⓔ</sup>
20	Spacer	186A069H09 <sup>Ⓔ</sup>
21	Core Washer	837754 <sup>Ⓔ</sup>
22	Core Nut	1730945
23	Core Retainer Clip	31D5056H03 <sup>Ⓔ</sup>
24	Lower Bearing Screw	3499A37G10

Cylinder Unit E

Complete Unit Style Number	Range (Amps)	Style Number of Part	
		Electromagnet	Moving Element
183A582G09	.5-2, 1-4, 2-8, 4-16, 10-40	298B172G09	184A930G11
183A582G26	20-80	289B172G09	184A930G14
879A988G14 <sup>Ⓔ</sup>	.....	58C8336G14	184A930G12

NOTE: Parts indented are included in the part under which they are indented.  
<sup>Ⓔ</sup> Two (2) used. <sup>Ⓔ</sup> This is the directional (lower) cylinder unit in all IRQ relays.  
<sup>Ⓔ</sup> For upper cylinder unit only. <sup>Ⓔ</sup> For lower cylinder unit only.  
<sup>Ⓔ</sup> This assembly is factory adjusted, do not tamper with cemented sealed screw and nut on contact support arm.  
<sup>Ⓔ</sup> The style number of the cylinder unit is stamped on its frame.  
 \* Recommended for stock.



**IRQ Common Parts**

Ref. No.	Description of Part	Style Number
1	Resistor	See Table*
Δ2	Resistor Assembly	406C956G01*
3	Transformer	See Table*
4	Tap Screw	1545282③
Δ5	Mutual Reactor	6670D07G04*
Δ6	Reactor	24A4948G26*
Δ7	Auto-Transformer	290B179G11*
8	Capacitor 1 MFD	1877966*
9	Varistor	183A122H02*
10	Contacting Switch	3490A22G18②*
11	ICS Unit	See Table②*
12	Stationary Contact for ICS Unit	1732868②③*
Δ13	Stationary Contact for ICS Unit (For Double Trip Only)	183A860G02*

**Resistor**

Description	Style Number
25 Ohms 2 Inch Adj.	05D1327H43
50 Ohms 3.5 Inch Fixed	04D1299H55
67 Ohms 3.5 Inch Fixed	04D1299H60
6500 Ohms 3.5 Inch Tapped	184A626H02

**Transformer**

Rating (Amps)	Style Number
.5-2	407C186G12
1-4	407C186G13
2-8	407C186G14
4-16	407C186G15
10-40	407C186G16
20-80	407C186G17

**ICS Unit②**

Rating (Amps)	Target Markings	Style Number Single Trip	Double Trip
.2-2.0	T	3491A37G09	3491A37G10
.2-2.0	1	3491A37G14	.....
1.0	T	3491A37G35	.....
1.0	1	3491A37G32	.....

NOTE: Parts indented are included in the part under which they are indented.  
 ② For contactor switch and ICS unit parts refer to RPD 41-852A1.  
 ③ Two (2) used.  
 Δ Not Illustrated.  
 \* Recommended for stock.

Printed in USA





June, 1987  
New Information  
Mailed to: E, D, C/41-400B

In FT-31 Flexitest Case<sup>Ⓞ</sup>

# Type IRP Directional Overcurrent Ground Relay

## IRC Relay

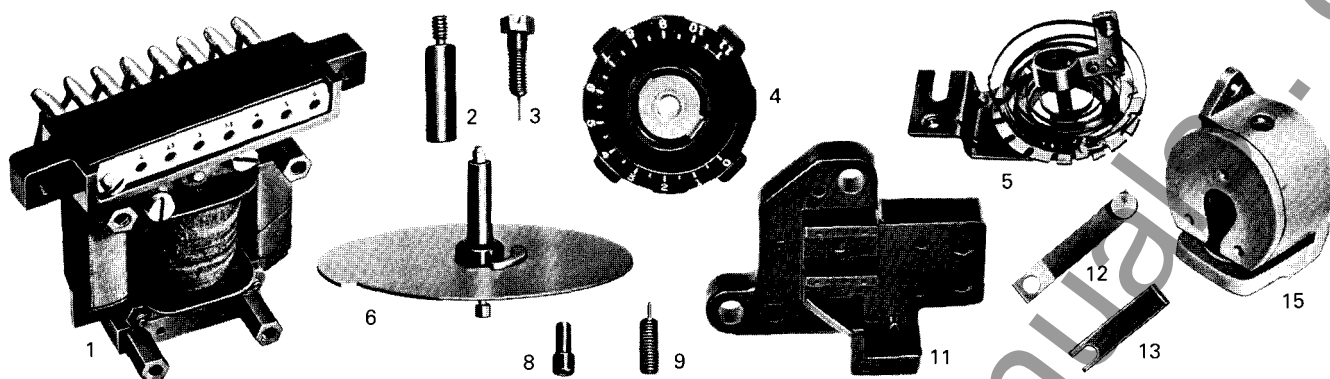
Range Time Unit	Amps Inst. Unit	ICS Unit (Amps)	Complete Relay Style Number						
			Time Characteristics						
			Short	Long	Definite	Moderately Inverse	Inverse	Very Inverse	Extremely Inverse
			IRP-2	IRP-5	IRP-6	IRP-7	IRP-8	IRP-9	IRP-11
<b>Frequency 60 Hertz</b>									
5-2.5	5-2	.2-2.0	.....	.....	.....	.....	.....	289B444A16	.....
5-2.5	1-4	.2-2.0	.....	.....	.....	.....	289B443A21	289B444A19	.....
5-2.5	2-8	.2-2.0	289B440A09	289B524A09	289B441A09	289B442A09	289B443A09	289B444A09	289B933A09
5-2.5	2-8	.2-2.0	.....	.....	.....	.....	.....	289B444A28 <sup>⑦</sup>	.....
5-2.5	4-16	.2-2.0	289B440A10	289B524A10	289B441A10	289B442A10	289B443A10	289B444A10	289B933A10
5-2.5	4-16	.2-2.0	.....	.....	.....	.....	289B443A28 <sup>Ⓞ</sup>	.....	.....
5-2.5	4-16	.2-2.0	.....	.....	.....	.....	289B443A29 <sup>⑦</sup>	.....	.....
5-2.5	10-40	.2-2.0	289B440A11	289B524A11	289B441A11	289B442A11	289B443A11	289B444A11	289B933A11
5-2.5	10-40	.2-2.0	.....	.....	.....	.....	.....	1963 232 <sup>Ⓢ</sup>	.....
5-2.5	10-40	1.0	.....	.....	.....	.....	.....	289B444A22	.....
5-2.5	20-80	.2-2.0	289B440A12	289B524A12	289B441A12	289B442A12	289B443A12	289B444A12	289B933A12
2-6	1-4	.2-2.0	.....	.....	.....	289B442A16	.....	.....	.....
2-6	4-16	.2-2.0	289B440A13	289B524A13	289B441A13	289B442A13	289B443A13	289B444A13	289B933A13
2-6	10-40	.2-2.0	289B440A14	289B524A14	289B441A14	289B442A14	289B443A14	289B444A14	289B933A14
2-6	10-40	1.0	.....	.....	.....	.....	289B443A23	.....	.....
2-6	10-40	.2-2.0	.....	.....	.....	.....	.....	.....	289B933A25 <sup>Ⓞ</sup>
2-6	20-80	.2-2.0	289B440A15	289B524A15	289B441A15	289B442A15	289B443A15	289B444A15	289B933A15
4-12	10-40	.2-2.0	289B440A17	289B524A17	289B441A17	289B442A17	289B443A17	289B444A17	289B933A17
4-12	20-80	.2-2.0	289B440A18	289B524A18	289B441A18	289B442A18	289B443A18	289B444A18	289B933A18
4-12	20-80	.2-2.0	.....	.....	.....	.....	289B443A30 <sup>Ⓞ</sup>	.....	.....

- For Flexitest case parts refer to RPD 41-076A1.
- ⑦ This IRP relay uses an ITH unit.
- Ⓞ Used in IRP-8 & IRP-9 relay styles 289B443A29 and 289B444A28 only.
- Ⓢ Used in IRP-8 relay style 289B443A28 only.
- Ⓞ Used in IRP-11 relay style 289B933A25 only.
- Ⓢ This IRP-9 relay is 50 Hz.

### Ordering Information

- Give style number and name of part.
- Give the complete nameplate readings.
- State method of shipment desired.
- Send all orders or correspondence to nearest sales office of the company.

E Element



E Element

Ref. No.	Description of Part	Style Number
1	Electromagnet .....	See Table*
2	Insulated Tap Screw.....	1545 282 <sup>Ⓢ</sup>
3	Upper Bearing Screw.....	52D6291G03*
4	Dial Assembly .....	1878 801
5	Moving Contact, Spring and Adjuster Assembly .....	See Table*
6	Disc and Shaft Assembly .....	880A772G12
7Δ	Upper Bearing .....	289A392G01
8	Lower Bearing .....	184A440G01
9	Lower Bearing Screw.....	3499A37G09*
10Δ	Nut for Lower Bearing Screw .....	203 056
11	Insulated Block for Stationary Contact.....	33B3110H02
12	Stationary Contact .....	3489A63G09*
13	Contact Plate .....	1732 759
14Δ	Nut to Mount Stationary Contact.....	1008 149
15	Permanent Magnet.....	See Table

NOTE: Parts indented are included in the part under which they are indented.

Ⓢ Two (2) used.

Δ Not illustrated.

\* Recommended for stock.

Electromagnet and Permanent Magnet

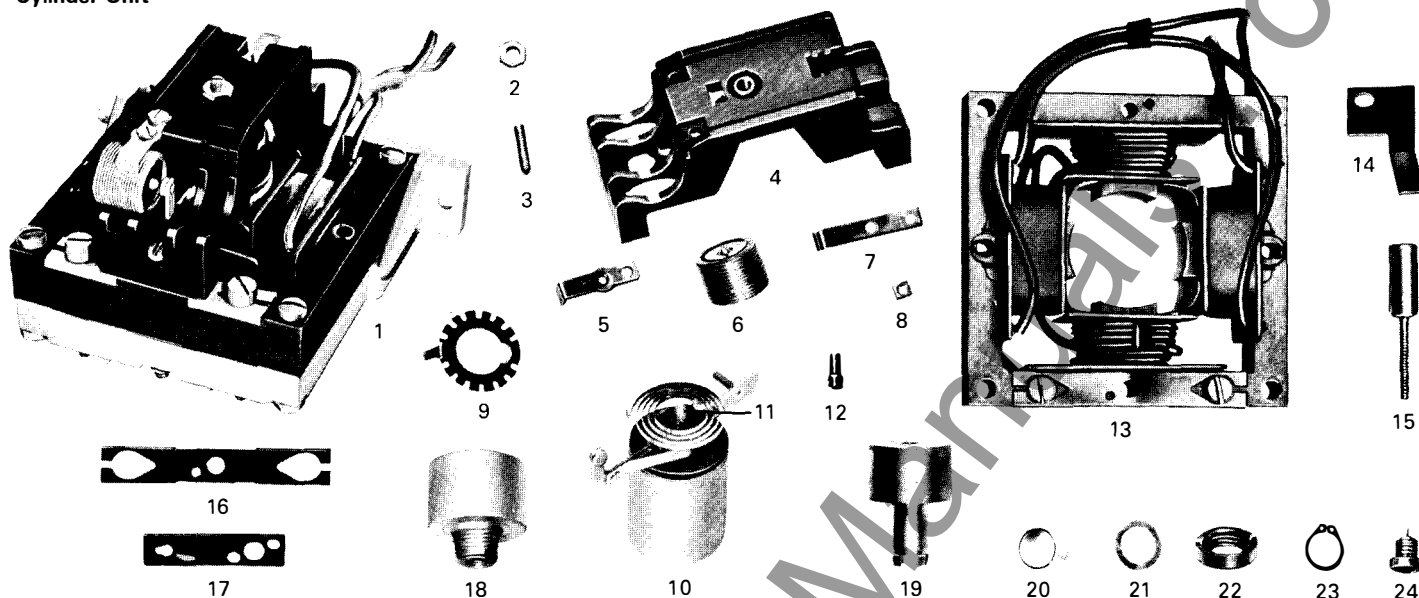
Relay Type	Style Number			Permanent Magnet
	Range (Amps)			
	5-2.5	2-6	4-12	
IRP-2	183A476G05	183A476G10	183A476G15	1732 779
IRP-5	183A476G06	183A476G11	183A476G16	1732 777
IRP-6	183A476G06	183A476G11	183A476G16	1732 779
IRP-7	183A476G07	183A476G12	183A476G17	1732 780
IRP-8	183A476G08	183A476G13	183A476G18	1732 777
IRP-9	183A476G08	183A476G13	183A476G18	1732 777
IRP-11	183A476G09	183A476G14	183A476G19	1732 777

Moving Contact, Spring and Adjuster Assembly

Relay Type	Style Number Single Trip
IRP-2	880A721G10
IRP-5	880A721G09
IRP-6	880A721G09
IRP-7	880A721G09
IRP-8	880A721G09
IRP-9	880A721G09
IRP-11	880A721G11



Cylinder Unit



Cylinder Unit

Ref. No.	Description of Part	Style Number
1	Cylinder Unit Complete .....	See Table <sup>Ⓔ</sup>
2	Nut for Upper Bearing Screw.....	203 056
3	Upper Bearing Screw .....	3499A37G11*
4	Bridge, Insert and Pin .....	183A660G01
	Bridge and Insert .....	60A1533G03 <sup>Ⓒ</sup>
5	Pressure Spring to Lock Stationary Contact .....	1730 953 <sup>Ⓒ</sup>
6	Stationary Contact Assembly (L.H.) .....	3491A82G09*
	Stationary Contact Assembly (R.H.) .....	3491A82G12 <sup>Ⓒ</sup> *
7	Clamp for Spring Adjuster .....	1730 954
8	Nut for Spring Adjuster Clamp Screw.....	1008 149
9	Spring Adjuster .....	1730 950
10	Moving Element with Contact and Torque Spring (Less Adjuster) .....	See Table <sup>Ⓓ</sup> *
11	Upper Bearing.....	289B392G01
12	Lower Bearing.....	289B393G02
13	Electromagnet.....	See Table*
14	Vane.....	183A218H01 <sup>Ⓔ</sup>
15	Plug Screw.....	1730 095 <sup>Ⓒ</sup> <sup>Ⓓ</sup>
16	Upper Plug Clip .....	1730 939 <sup>Ⓓ</sup>
17	Lower Plug Clip .....	1730 096●●
18	Core .....	1730 942
19	Core (Long) .....	289B502H01 <sup>Ⓔ</sup>
20	Spacer .....	186A069H09 <sup>Ⓓ</sup>
21	Washer .....	837 754 <sup>Ⓓ</sup>
22	Core Nut .....	1730 945
23	Retaining Ring .....	31D5056H03 <sup>Ⓓ</sup>
24	Lower Bearing Screw.....	3499A37G10*

NOTE: Parts indented are included in the part under which they are indented.

Cylinder Unit<sup>Ⓔ</sup>

Complete Unit Style Number	Range (Amps)	Style Number of Part	
		Electromagnet	Moving Element
183A582G09 <sup>Ⓒ</sup>	.5-2, 1-4, 2-8, 4-16, 10-40	289A172G09	184A930G11
879A988G12 <sup>Ⓒ</sup>	.5-2.5, 2-6	1875 059	184A930G12
879A988G13 <sup>Ⓒ</sup>	4-12	1875 060	184A930G12
183A582G26 <sup>Ⓒ</sup>	20-80	289A172G09	184A930G14

<sup>Ⓒ</sup> Two (2) used.

<sup>Ⓓ</sup> This is a overcurrent (upper) cylinder unit.

<sup>Ⓔ</sup> This is a directional (lower) cylinder unit.

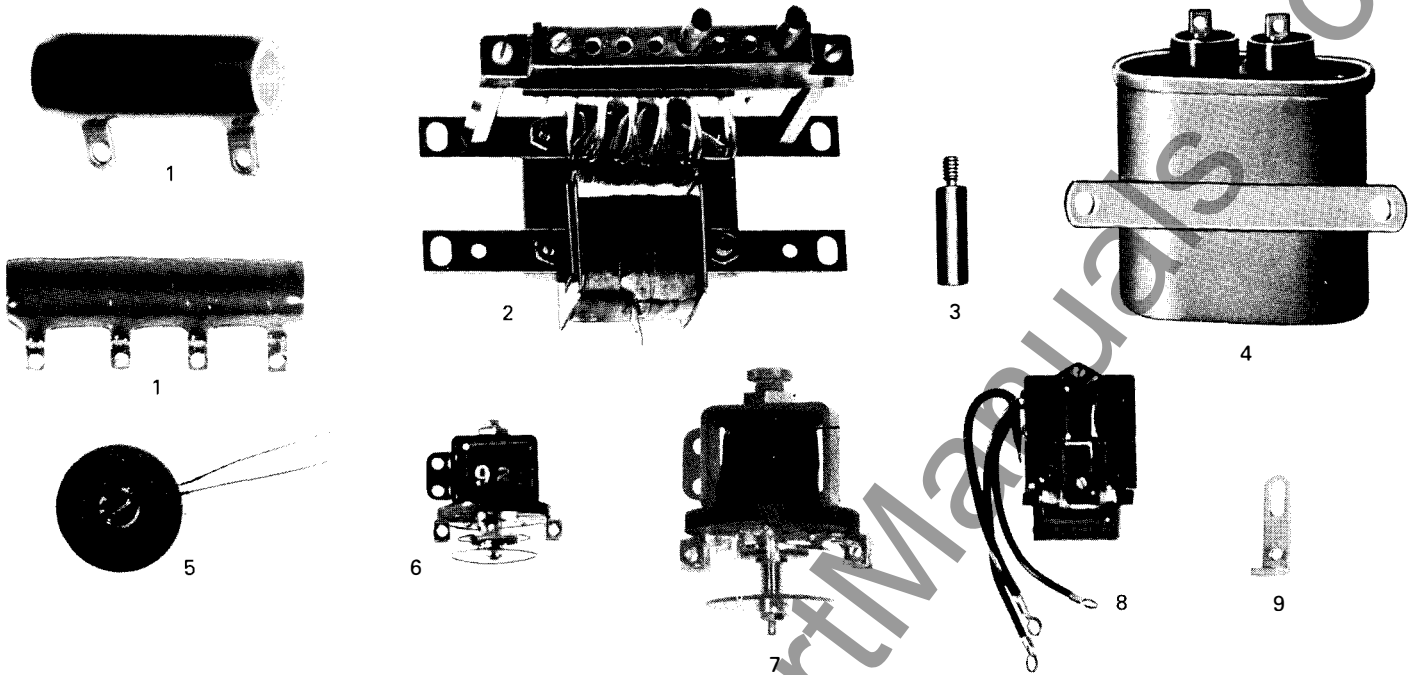
<sup>Ⓓ</sup> For lower cylinder units only.

● This assembly is factory adjusted, do not tamper with cemented sealed screw and nut on contact support arm.

<sup>Ⓓ</sup> The cylinder unit and transformer style numbers are stamped on their frames.

\* Recommended for stock.

Common Parts



IRP Common Parts

Ref. No.	Description of Part	Style Number
1	Resistor, 400 Ohms, 2 inch fixed	1202 587*
	Resistor, 6500 Ohms, 3.5 inch tapped	184A626H02*
2	Transformer	See Table <sup>Ⓔ</sup> *
3	Tap Screw	1545 282 <sup>Ⓓ</sup>
4	Capacitor, 1.0 MFD, 60 and 50 Hz	1877 966*
	Capacitor, 1.6 MFD, 60 Hz	1875 936*
	Capacitor, 2.0 MFD, 50 Hz	14C9400H13*
5	Varistor	183A122H02*
6	Contacting Switch .0176 Amp	3490A22G18 <sup>Ⓒ</sup> *
7	ITH Unit, .5-1 Amps	3491A23G18 <sup>Ⓔ</sup> Ⓒ*
	ITH Unit, 4-16 Amps	3490A24G14 <sup>Ⓔ</sup> Ⓒ*
	ITH Unit, 10-40 Amps	3490A24G15 <sup>Ⓔ</sup> Ⓒ*
	ITH Unit, 20-80 Amps	3490A24G16 <sup>Ⓔ</sup> Ⓒ*
8	ICS Unit, .2-2 Amp, Single Trip, 'T'	3491A37G09 <sup>Ⓒ</sup> *
	ICS Unit, .2-2 Amp, Single Trip, '1'	3491A37G14 <sup>Ⓒ</sup> *
	ICS Unit, 1.0 Amp, Single Trip, 'T'	3491A37G35 <sup>Ⓒ</sup> *
	ICS Unit, 1.0 Amp, Single Trip, '1'	3491A36G32 <sup>Ⓒ</sup> *
9	Stationary Contact for ICS Unit	1732 868 <sup>Ⓓ</sup>

Transformer<sup>Ⓔ</sup>

Rating (Amps)	Style Number	
	60 Hz	50 Hz
.5-2	407C186G12	.....
1-4	407C186G13	.....
2-8	407C186G14	.....
4-16	407C186G15	.....
10-40	407C186G16	407C186G22
20-80	407C186G17	.....

NOTE: Parts indented are included in the part under which they are indented.

<sup>Ⓒ</sup> For contactor switch, ITH and ICS unit parts refer to RPD 41-852A1.

<sup>Ⓓ</sup> Two (2) used.

<sup>Ⓔ</sup> Used in IRP-8 and IRP-9 relay styles 289B443A29 and 289B444A28 only.

<sup>Ⓕ</sup> Used in IRP-8 relay style 289B443A28 only.

<sup>Ⓖ</sup> Used in IRP-11 relay style 289B933A25 only.

<sup>Ⓗ</sup> Used in IRP-8 relay style 289B443A30 only.

<sup>Ⓖ</sup> The cylinder unit and transformer style numbers are stamped on their frames.

\* Recommended for stock.

Westinghouse Electric Corporation  
Relay and Telecommunications Division  
Coral Springs, FL 33065

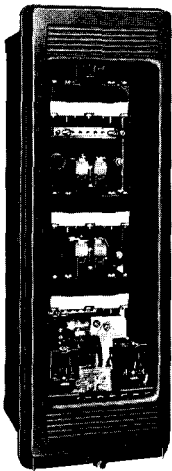
Printed in U.S.A.



June, 1986  
Supersedes RPD 41-133A1  
dated March, 1972  
Mailed to: E, D, C/41-400B

IRD-2, 5, 6, 7, 8, 9 In FT-41  
Flexitest Case ①  
IRD-61, 71, 81, 91 In FT-42  
Flexitest Case ①

# Type IRD Directional Overcurrent Ground Relay



IRD-9

## IRD-2

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
289B445A09	.5-2.5	2-8	60	.2-2.0
289B445A10	.5-2.5	4-16	60	.2-2.0
289B445A11	.5-2.5	10-40	60	.2-2.0
289B445A12	.5-2.5	20-80	60	.2-2.0
289B445A13	2-6	4-16	60	.2-2.0
289B445A14	2-6	10-40	60	.2-2.0
289B445A15	2-6	20-80	60	.2-2.0
289B445A16	2-6	2-8	60	.2-2.0
289B445A17	4-12	10-40	60	.2-2.0
289B445A18	4-12	20-80	60	.2-2.0
289B445A21	.5-2.5	2-8	50	.2-2.0
289B445A22	.5-2.5	4-16	50	.2-2.0
289B445A23	.5-2.5	10-40	50	.2-2.0
289B445A25	2-6	4-16	50	.2-2.0
289B445A26	2-6	10-40	50	.2-2.0
289B445A28	2-6	2-8	50	.2-2.0
289B445A29	4-12	10-40	50	.2-2.0

## IRD-5

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
289B525A09	.5-2.5	2-8	60	.2-2.0
289B525A10	.5-2.5	4-16	60	.2-2.0
289B525A11	.5-2.5	10-40	60	.2-2.0
289B525A12	.5-2.5	20-80	60	.2-2.0
289B525A13	2-6	4-16	60	.2-2.0
289B525A14	2-6	10-40	60	.2-2.0
289B525A15	2-6	20-80	60	.2-2.0
289B525A17	4-12	10-40	60	.2-2.0
289B525A18	4-12	20-80	60	.2-2.0
289B525A21	.5-2.5	2-8	50	.2-2.0
289B525A22	.5-2.5	4-16	50	.2-2.0
289B525A23	.5-2.5	10-40	50	.2-2.0
289B525A25	2-6	4-16	50	.2-2.0
289B525A26	2-6	10-40	50	.2-2.0
289B525A28	4-12	10-40	50	.2-2.0

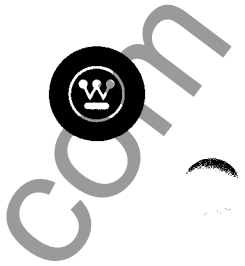
## IRD-6

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
289B446A09	.5-2.5	2-8	60	.2-2.0
289B446A10	.5-2.5	4-16	60	.2-2.0
289B446A11	.5-2.5	10-40	60	.2-2.0
289B446A12	.5-2.5	20-80	60	.2-2.0
289B446A13	2-6	4-16	60	.2-2.0
289B446A14	2-6	10-40	60	.2-2.0
289B446A15	2-6	20-80	60	.2-2.0
289B446A17	4-12	10-40	60	.2-2.0
289B446A18	4-12	20-80	60	.2-2.0
289B446A21	.5-2.5	2-8	50	.2-2.0
289B446A22	.5-2.5	4-16	50	.2-2.0
289B446A23	.5-2.5	10-40	50	.2-2.0
289B446A25	2-6	4-16	50	.2-2.0
289B446A26	2-6	10-40	50	.2-2.0
289B446A28	4-12	10-40	50	.2-2.0

● For Flexitest Case Parts refer to RPD 41-076A1.

### Ordering Information

- Give style number and name of part.
- Give the complete nameplate readings.
- State method of shipment desired.
- Send all orders or correspondence to nearest sales office of the company.



**IRD-7**

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
289B447A09	.5-2.5	2-8	60	.2-2.0
289B447A10	.5-2.5	4-16	60	.2-2.0
289B447A11	.5-2.5	10-40	60	.2-2.0
289B447A12	.5-2.5	20-80	60	.2-2.0
289B447A13	2-6	4-16	60	.2-2.0
289B447A14	2-6	10-40	60	.2-2.0
289B447A15	2-6	20-80	60	.2-2.0
289B447A16	4-12	2-8	60	.2-2.0
289B447A17	4-12	10-40	60	.2-2.0
289B447A18	4-12	20-80	60	.2-2.0
289B447A19	1-4	4-16	60	.2-2.0
289B447A20	1-4	10-40	60	.2-2.0
289B447A21	.5-2.5	2-8	50	.2-2.0
289B447A22	.5-2.5	4-16	50	.2-2.0
289B447A23	.5-2.5	10-40	50	.2-2.0
289B447A25	2-6	4-16	50	.2-2.0
289B447A26	2-6	10-40	50	.2-2.0
289B447A28	4-12	10-40	50	.2-2.0
289B447A30	1-4	20-80	60	.2-2.0
289B447A31	.5-2.5	10-40	60	1.0
289B447A32	.5-2.5	4-16	60	1.0
1491B68A09	.5-2.5	2-8	60	1.0

**IRD-8**

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)	ITH Unit (Amps)
289B448A09	.5-2.5	2-8	60	.2-2.0	.....
289B448A10	.5-2.5	4-16	60	.2-2.0	.....
289B448A11	.5-2.5	10-40	60	.2-2.0	.....
289B448A12	.5-2.5	20-80	60	.2-2.0	.....
289B448A13	2-6	4-16	60	.2-2.0	.....
289B448A14	2-6	10-40	60	.2-2.0	.....
289B448A15	2-6	20-80	60	.2-2.0	.....
289B448A17	4-12	10-40	60	.2-2.0	.....
289B448A18	4-12	20-80	60	.2-2.0	.....
289B448A19	.5-2.5	5-2	60	.2-2.0	.....
289B448A20	.5-2.5	1-4	60	.2-2.0	.....
289B448A21	.5-2.5	2-8	50	.2-2.0	.....
289B448A22	.5-2.5	4-16	50	.2-2.0	.....
289B448A23	.5-2.5	10-40	50	.2-2.0	.....
289B448A24	.5-2.5	20-80	50	.2-2.0	.....
289B448A25	2-6	4-16	50	.2-2.0	.....
289B448A26	2-6	10-40	50	.2-2.0	.....
289B448A27	2-6	20-80	50	.2-2.0	.....
289B448A28	4-12	10-40	50	.2-2.0	.....
289B448A29	4-12	20-80	50	.2-2.0	.....
289B448A30	2-6	10-40	60	.2-2.0	16-32
289B448A31	2-6	2-8	50	.2-2.0	.....
289B448A32	.5-2.5	1-4	50	.2-2.0	.....



IRD-9

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)	ITH Unit (Amps)
1962946	.5-2.5	1-4	60	.2-2.0	.....
1963170	.5-2.5	10-40	60	1.0	.....
1963357	.5-2.5	4-16	60	.2-2.0	.....
1963396	2-6	4-16	60	.2-2.0	.....
1963472	2-6	10-40	60	.2-2.0	.....
1963621	.5-2.5	4-16	60	1.0	.....
1963738	.5-2.5	10-40	60	.2-2.0	.....
289B449A09	.5-2.5	2-8	60	.2-2.0	.....
289B449A10	.5-2.5	4-16	60	.2-2.0	.....
289B449A11	.5-2.5	10-40	60	.2-2.0	.....
289B449A12	.5-2.5	20-80	60	.2-2.0	.....
289B449A13	2-6	4-16	60	.2-2.0	.....
289B449A14	2-6	10-40	60	.2-2.0	.....
289B449A15	2-6	20-80	60	.2-2.0	.....
289B449A16	1-4	4-16	60	.2-2.0	.....
289B449A17	4-12	10-40	60	.2-2.0	.....
289B449A18	4-12	20-80	60	.2-2.0	.....
289B449A19	.5-2.5	10-40	60	.2-2.0	4-8
289B449A20	.5-2.5	2-8	60	.2-2.0	2-4
289B449A21	.5-2.5	2-8	50	.2-2.0	.....
289B449A22	.5-2.5	4-16	50	.2-2.0	.....
289B449A23	.5-2.5	10-40	50	.2-2.0	.....
289B449A25	2-6	4-16	50	.2-2.0	.....
289B449A26	2-6	10-40	50	.2-2.0	.....
289B449A28	4-12	10-40	50	.2-2.0	.....
289B449A30	.5-2.5	10-40	60	.2-2.0	10-20
289B449A31	.5-2.5	4-16	60	.2-2.0	4-8
289B449A32	1-4	20-80	60	.2-2.0	.....
289B449A33	1-4	10-40	60	.2-2.0	.....
289B449A34	1-4	2-8	60	.2-2.0	.....
289B449A35	1-4	1-4	60	.2-2.0	.....
289B449A36	4-12	4-16	60	.2-2.0	.....
289B449A37	.5-2.5	2-8	60	.2-2.0	1-2
289B449A38	.5-2.5	4-16	60	.2-2.0	2-4
289B449A39	.5-2.5	1-4	60	.2-2.0	1-2
718B731A12	.5-2.5	2-8	60	.2-2.0	.....
718B731A13	1-4	10-40	50	.2-2.0	.....
718B731A15	2-6	20-80	60	.2-2.0	10-20
718B731A16	.5-2.5	20-80	60	.2-2.0	10-20
718B731A17	.5-2.5	.5-2	60	.2-2.0	.....
718B731A20	.5-2.5	10-40	60	.2-2.0	2-4



**IRD-11**

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
289B932A09	.5-2.5	2-8	60	.2-2.0
289B932A10	.5-2.5	4-16	60	.2-2.0
289B932A11	.5-2.5	10-40	60	.2-2.0
289B932A12	.5-2.5	20-80	60	.2-2.0
289B932A13	2-6	4-16	60	.2-2.0
289B932A14	2-6	10-40	60	.2-2.0
289B932A15	2-6	20-80	60	.2-2.0
289B932A17	4-12	10-40	60	.2-2.0
289B932A18	4-12	20-80	60	.2-2.0
289B932A21	.5-2.5	2-8	50	.2-2.0
289B932A22	.5-2.5	4-16	50	.2-2.0
289B932A23	.5-2.5	10-40	50	.2-2.0
289B932A24	.5-2.5	20-80	50	.2-2.0
289B932A25	2-6	4-16	50	.2-2.0
289B932A26	2-6	10-40	50	.2-2.0
289B932A27	2-6	20-80	50	.2-2.0
289B932A28	4-12	10-40	50	.2-2.0
289B932A29	4-12	20-80	50	.2-2.0

**IRD-61**

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
292B714A29	.5-2.5	4-16	60	.2-2.0
292B714A30	.5-2.5	2-8	60	.2-2.0
292B714A31	.5-2.5	10-40	60	.2-2.0
292B714A33	.5-2.5	1-4	60	.2-2.0
671B365A25	.5-2.5	10-40	60	.2-2.0

**IRD-71**

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
292B714A16	.5-2.5	2-8	60	.2-2.0
292B714A17	.5-2.5	20-80	60	.2-2.0
292B714A18	4-12	10-40	60	.2-2.0
292B714A19	.5-2.5	4-16	60	.2-2.0
292B714A32	.5-2.5	10-40	60	.2-2.0
671B365A33	.5-2.5	10-40	60	.2-2.0
671B365A34	.5-2.5	4-16	60	.2-2.0
671B365A35	.5-2.5	2-8	60	.2-2.0

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**IRD-81**

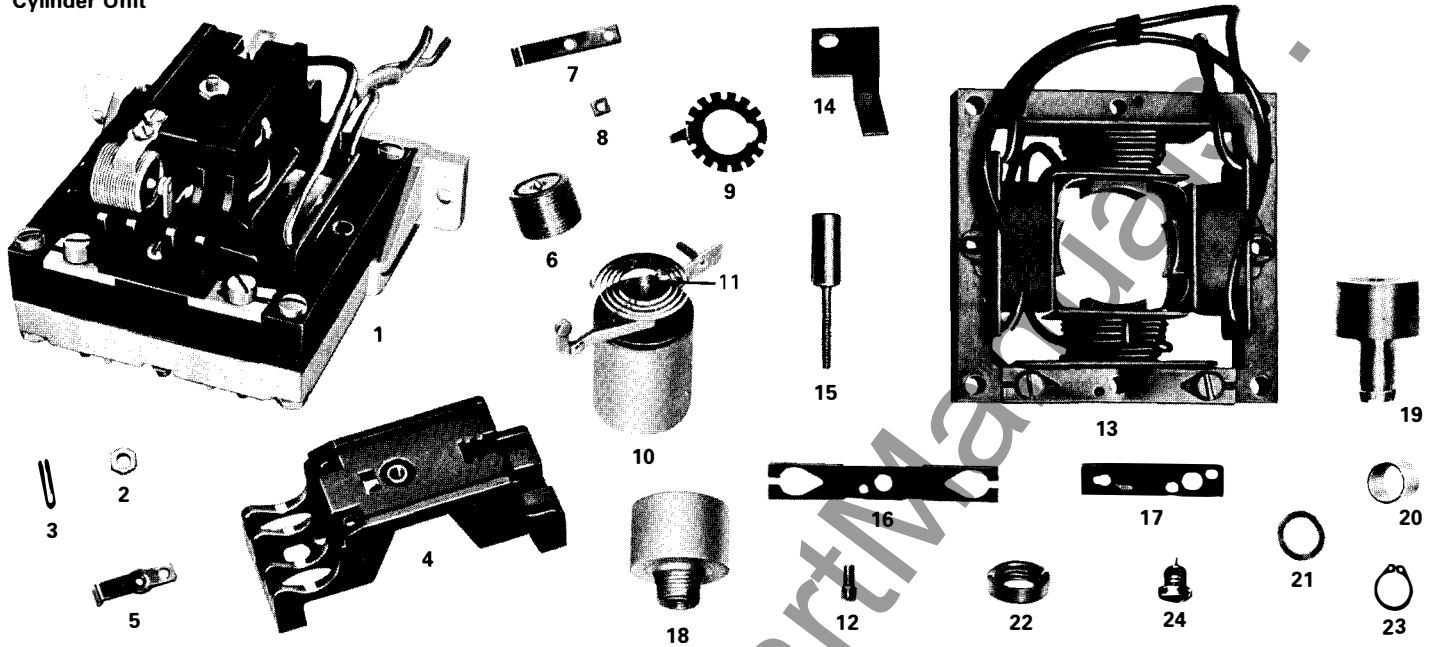
Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
1963297	.5-2.5	10-40	60	.2-2.0
1963350	2-6	20-80	60	.2-2.0
1963443	.5-2.5	4-16	60	.2-2.0
1963569	.5-2.5	2-8	60	.2-2.0
1963571	2-6	10-40	60	.2-2.0
1963623	2-6	4-16	60	.2-2.0
292B714A09	.5-2.5	10-40	60	.2-2.0
292B714A10	.5-2.5	4-16	60	.2-2.0
292B714A11	4-12	10-40	60	.2-2.0
292B714A12	2-6	10-40	60	.2-2.0
292B714A13	.5-2.5	2-8	60	.2-2.0
292B714A14	2-6	4-16	60	.2-2.0
292B714A15	2-6	20-80	60	.2-2.0
671B365A09	.5-2.5	1-4	60	.2-2.0
671B365A13	.5-2.5	20-80	60	.2-2.0

**IRD-91**

Complete Relay Style Number	Time Unit (Amps)	Inst. Unit (Amps)	Frequency (HZ)	ICS Unit (Amps)
1963278	.5-2.5	1-4	60	.2-2.0
1963584	.5-2.5	10-40	60	.2-2.0
1963619	2-6	10-40	60	.2-2.0
292B714A21	.5-2.5	4-16	60	.2-2.0
292B714A22	.5-2.5	10-40	60	.2-2.0
292B714A23	1-4	2-8	60	.2-2.0
292B714A24	.5-2.5	20-80	60	.2-2.0
292B714A25	2-6	20-80	60	.2-2.0
292B714A26	2-6	10-40	60	.2-2.0
292B714A27	.5-2.5	2-8	60	.2-2.0
671B366A10	.5-2.5	1-4	60	.2-2.0
671B366A11	.5-2.5	4-16	60	.2-2.0
671B366A17	2-6	4-16	60	.2-2.0
671B366A19	2-6	20-80	60	.2-2.0
671B366A20	.5-2.5	20-80	60	.2-2.0
671B366A25	1-4	10-40	60	.2-2.0
774B550A21	2-6	4-16	60	.2-2.0
774B550A22	.5-2.5	.5-2	60	.2-2.0
774B550A23	.5-2.5	1-4	60	.2-2.0



Cylinder Unit



Cylinder Unit

Ref. No.	Description of Part	Style Number
1	Cylinder Unit Complete	See Table <sup>Ⓐ</sup>
2	Nut for Upper Bearing Screw	203056
3	Upper Bearing Screw	3499A37G11
4	Bridge, Insert and Pin (Top Unit IRD-2, 5, 6, 7, 8, 9, 11)	183A660G01
4	Bridge, Insert and Pin (Top Unit IRD-61, 71, 81, 91)	183A660G02
4	Bridge and Insert	60A1533G03
5	Pressure Spring to Lock Stationary Contact	1730953
6	Stationary Contact Assembly	3491A82G09 <sup>Ⓒ</sup> *
6	Stationary Contact Assembly	3499A37G12 <sup>Ⓒ</sup> *
7	Clamp for Spring Adjuster	1730954
8	Nut for Spring Adjuster Clamp Screw	1008149
9	Spring Adjuster	1730950
10	Moving Element with Contact and Torque Spring (Less Adjuster)	See Table <sup>Ⓐ</sup> *
11	Upper Bearing	289B392G01
12	Lower Bearing	289B393G02
13	Electromagnet	See Table*
14	Vane	183A218H01 <sup>Ⓓ</sup>
14	Vane	183A304H01 <sup>Ⓔ</sup>
15	Plug Screw	1730095 <sup>Ⓓ</sup>
16	Upper Plug Clip	1730939
17	Lower Plug Clip	1730096
18	Core	1730942
19	Core (Long)	289B502H01 <sup>Ⓓ</sup>
20	Spacer	186A069H09 <sup>Ⓓ</sup>
21	Core Washer	837754 <sup>Ⓓ</sup>
22	Core Nut	1730945 <sup>Ⓓ</sup>
23	Core Retainer Clip	31D5056H03 <sup>Ⓓ</sup>
24	Lower Bearing Screw	3499A37G10

Cylinder Unit<sup>Ⓒ</sup>

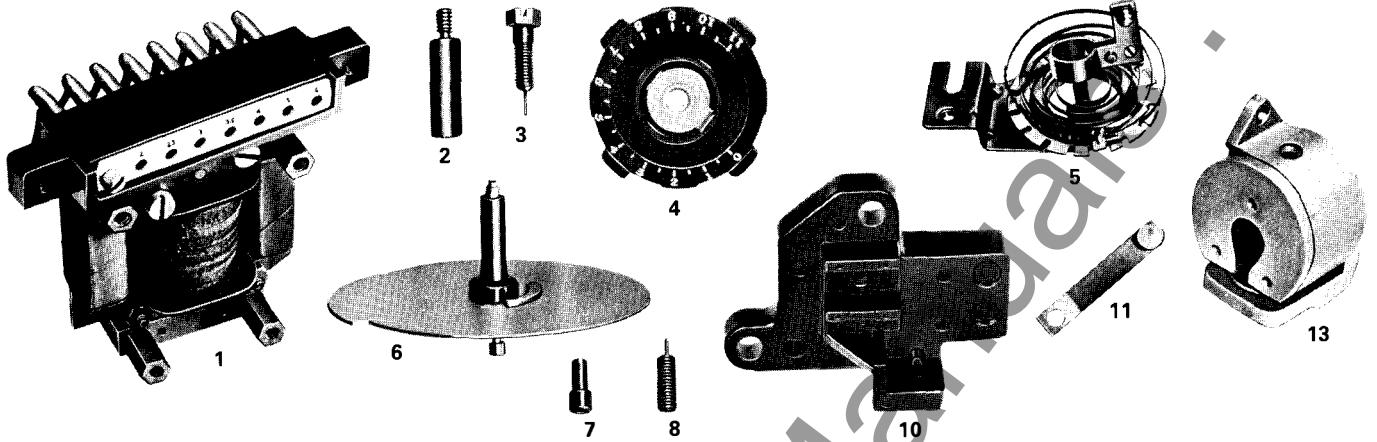
Complete Unit Style Number	Inst. Unit (Amps)	Time Unit (Amps)	Style Number of Part	
			Electro-magnet	Moving Element <sup>Ⓐ</sup>
183A582G09 <sup>Ⓒ</sup>	1-4, 2-8, 4-16, 10-40	.5-2.5, 1-4, 2-6	289B172G09	184A930G11
183A582G26 <sup>Ⓒ</sup>	20-80	4-12	289B172G09	184A930G14
183A582G10 <sup>Ⓒ</sup>	2-8, 4-16, 10-40, 20-80	.5-2.5, 1-4, 2-6	1875057	184A930G12
183A582G11 <sup>Ⓒ</sup>	10-40, 20-80	4-12	1875058	184A930G12
879A988G12 <sup>Ⓒ</sup>	2-8, 4-16, 10-40, 20-80	.5-2.5, 1-4, 2-6	1875059	184A930G12
879A988G13 <sup>Ⓒ</sup>	1-4, 2-8 4-16, 10-40	4-12	1875059	184A930G12
290B750G18 <sup>Ⓒ</sup>	1-4, 2-8, 4-16, 10-40, 20-80	.5-2.5, 1-4, 2-6, 4-12	289B172G09	184A930G14
606B838G20 <sup>Ⓒ</sup>	1-4, 2-8, 4-16, 10-40, 20-80	.5-2.5 1-4, 2-6 4-12	290B483G10	184A930G14

NOTE: Parts indented are included in the part under which they are indented.

- Ⓓ Two (2) used.
- Ⓒ Bottom cylinder unit only.
- Ⓔ Middle cylinder unit only.
- Ⓓ Top and middle cylinder units only.
- Ⓒ Left hand contact used in all top, middle and bottom units, except for S#606B838G20, which is the right hand contact.
- Ⓓ Right hand contact used in all middle and bottom units, except for S#606B838G20 which is the left hand contact.
- Ⓐ This assembly is factory adjusted, do not tamper with cemented sealed screw and nut on contact support arm.
- Ⓒ The style number of the cylinder unit is stamped on its frame.
- Ⓒ Top unit for IRD-2, 5, 6, 7, 8, 9, 11.
- Ⓒ Middle unit for IRD-2, 5, 6, 7, 8, 9, 11.
- Ⓒ Bottom unit for IRD-2, 5, 6, 7, 8, 9, 11.
- Top unit for IRD-61, 71, 81, 91 only.
- Ⓒ Bottom unit for IRD-61, 71, 81, 91 only.
- \* Recommended for stock.



"E" Element



E-Element

Ref. No.	Description of Part	Style Number
1	Electromagnet	See Table*
2	Insulated Tap Screw	1545282 <sup>ⓐ</sup>
3	Upper Bearing Screw	52D6291G03
4	Dial Assembly	1878801
5	Moving Contact, Spring, and Adjuster Assembly	See Table*
6	Disc and Shaft Assembly	880A772G12
7	Lower Bearing	184A440G01
8	Lower Bearing Screw	3499A37G09
9Δ	Nut For Lower Bearing Screw	203056
10	Insulated Block for Stationary Contact	33B3110H02
11	Stationary Contact	1732776*
12Δ	Nut to Mount Stationary Contact	1008149
13	Permanent Magnet	See Table

Moving Contact, Spring and Adjuster Assembly

Relay Type	Style Number Single Trip
IRD-2	880A721G10
IRD-5, 6, 7, 8, 9	880A721G09
IRD-11	880A721G11
IRD-61, 71, 81, 91	880A721G09

Permanent Magnet

Relay Type	Style Number
IRD-2,6	1732779
IRD-5, 8, 9, 11	1732777
IRD-7	1732780
IRD-61	1732779
IRD-71	1732780
IRD-81, 91	1732777

NOTE: Parts indented are included in the part under which they are indented.

ⓐ Two (2) used.

Δ Not illustrated.

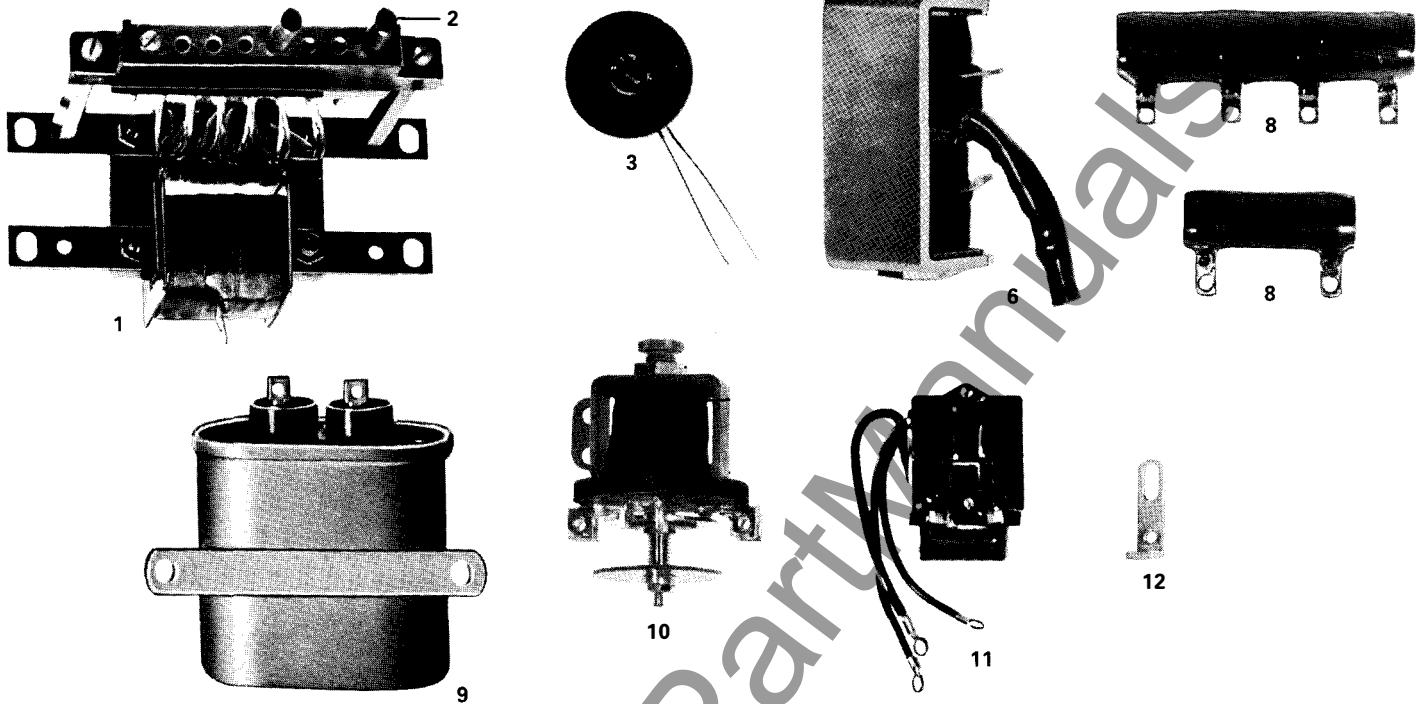
\* Recommended for stock.

Electromagnet

Relay Type	Style Number of Part Range (Amps)			
	.5-2.5	1-4	2-6	4-12
IRD-2	183A476G05		183A476G10	183A476G15
IRD-5, 6	183A476G06		183A476G11	183A476G16
IRD-7	183A476G07	183A476G29	183A476G12	183A476G17
IRD-8, 9	183A476G08	183A476G28	183A476G13	183A476G18
IRD-11	183A476G09		183A476G14	183A476G19
IRD-61	183A476G06		183A476G11	183A476G16
IRD-71	183A476G07	183A476G29	183A476G12	183A476G17
IRD-81, 91	183A476G08	183A476G28	183A476G13	183A476G18



IRD Common Parts



IRD Common Parts

Ref. No.	Description of Part	Style Number
1	Transformer	See Table*
2	Tap Screw for Transformer	1545282 <sup>③</sup>
3	Varistor	183A122H02 <sup>⑥*</sup>
4Δ	Compensator	407C120G20 <sup>⑥*</sup>
5Δ	Reactor	24A4948G31 <sup>⑥*</sup>
6	Inductor	289B112G03*
7Δ	Telephone Relay	541D514H24 <sup>①*</sup>
8	Resistor	See Table*
9	Capacitor	See Table*
10	ITH Unit	See Table <sup>①*</sup>
11	ICS Unit	See Table <sup>③*</sup>
12	Stationary Contact for ICS Unit	1732868 <sup>③*</sup>

NOTE: Parts indented are included in the part under which they are indented.

- ③ Two (2) used.
- IRD-61, 71, 81, 91 only.
- ① When used.
- \* Recommended for stock.
- Δ Not illustrated.

Transformer

Rating (Amps)	Style Number of Part	
	60 Hertz	50 Hertz
1-4	407C186G13	407C186G19
2-8	407C186G14	407C186G20
4-16	407C186G15	407C186G21
10-40	407C186G16	407C186G22
20-80	407C186G17	407C186G23

ICS Unit<sup>②</sup>

Rating (Amps)	Target Markings	Style Number Single Trip
2-2.0	T	3491A37G09
2-2.0	I	3491A37G14
1.0	T	3491A37G35
1.0	1	3491A36G32

Resistor

Description	Style Number
400 Ohms 2 Inch Fixed	1202587
500 Ohms 3.5 Inch Fixed	1336158
300/2700/6500 Ohms 3.5 Inch Tapped	184A626H02

Capacitor

Description	Style Number
1.0 MFD	1877966
1.6 MFD	1875936
2.0 MFD	14C9400H13
4.0 MFD	1723407

ITH Unit<sup>②</sup>

Rating (Amps)	Style Number
1-2	3491A23G10 <sup>②</sup>
2-4	3491A23G11
10-20	3491A23G28
16-32	3491A23G20

② For ICS and ITH unit parts refer to RPD 41-852A1.

Printed in USA



April, 1987  
New Information  
Mailed to: E, D, C/41-400B

In FT-31 Flexitest Case<sup>ⓐ</sup>

# Type IRC Directional Overcurrent Ground Relay

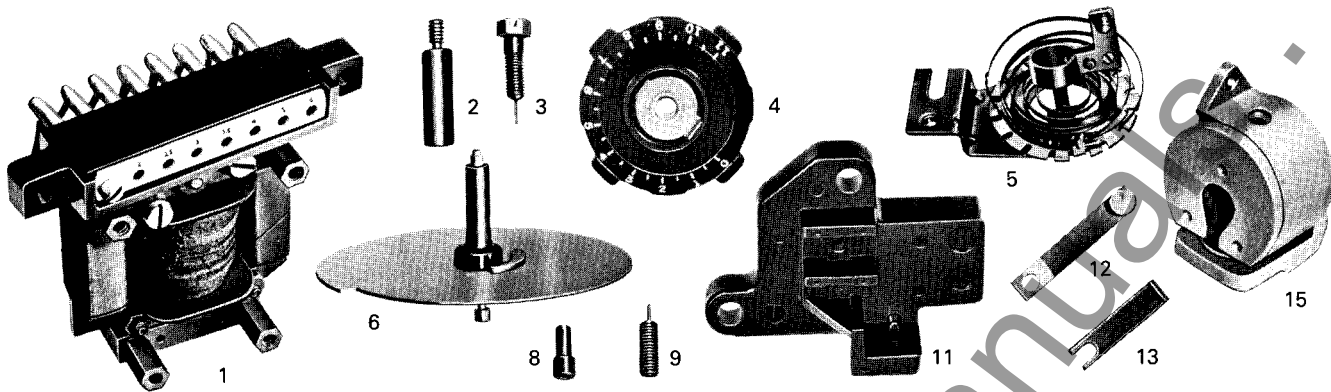
## IRC Relay

Range (Amps)		ICS Unit (Amps)	Complete Relay Style Number								
Time Unit	Inst. Unit		Time Characteristics		Definite	Moderately Inverse	Inverse	Very Inverse	Extremely Inverse		
		Short	Long	IRC-2						IRC-5	IRC-6
<b>Frequency 60 Hertz</b>											
.5-2.5	2-8	.2-2.0	<b>289B435A09</b>	<b>289B523A09</b>	<b>289B436A09</b>	<b>289B437A09</b>	<b>289B438A09</b>	<b>289B439A09</b>	<b>289B931A09</b>		
.5-2.5	4-16	.2-2.0	<b>289B435A10</b>	<b>289B523A10</b>	<b>289B436A10</b>	<b>289B437A10</b>	<b>289B438A10</b>	<b>289B439A10</b>	<b>289B931A10</b>		
.5-2.5	4-16	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A25<sup>ⓑ</sup></b>	.....		
.5-2.5	10-40	.2-2.0	<b>289B435A11</b>	<b>289B523A11</b>	<b>289B436A11</b>	<b>289B437A11</b>	<b>289B438A11</b>	<b>289B439A11</b>	<b>289B931A11</b>		
.5-2.5	10-40	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A26<sup>ⓑ</sup></b>	.....		
.5-2.5	20-80	.2-2.0	<b>289B435A12</b>	<b>289B523A12</b>	<b>289B436A12</b>	<b>289B437A12</b>	<b>289B438A12</b>	<b>289B439A12</b>	<b>289B931A12</b>		
2-6	4-16	.2-2.0	<b>289B435A13</b>	<b>289B523A13</b>	<b>289B436A13</b>	<b>289B437A13</b>	<b>289B438A13</b>	<b>289B439A13</b>	<b>289B931A13</b>		
2-6	10-40	.2-2.0	<b>289B435A14</b>	<b>289B523A14</b>	<b>289B436A14</b>	<b>289B437A14</b>	<b>289B438A14</b>	<b>289B439A14</b>	<b>289B931A14</b>		
2-6	20-80	.2-2.0	<b>289B435A15</b>	<b>289B523A15</b>	<b>289B436A15</b>	<b>289B437A15</b>	<b>289B438A15</b>	<b>289B439A15</b>	<b>289B931A15</b>		
4-12	10-40	.2-2.0	<b>289B435A17</b>	<b>289B523A17</b>	<b>289B436A17</b>	<b>289B437A17</b>	<b>289B438A17</b>	<b>289B439A17</b>	<b>289B931A17</b>		
4-12	20-80	.2-2.0	<b>289B435A18</b>	<b>289B523A18</b>	<b>289B436A18</b>	<b>289B437A18</b>	<b>289B438A18</b>	<b>289B439A18</b>	<b>289B931A18</b>		
<b>Frequency 50 Hertz</b>											
.5-2.5	2-8	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A28</b>	.....		
.5-2.5	4-16	.2-2.0	.....	.....	.....	.....	<b>289B438A22</b>	<b>289B439A29</b>	.....		
.5-2.5	10-40	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A30</b>	.....		
.5-2.5	20-80	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A31</b>	.....		
2-6	4-16	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A32</b>	.....		
2-6	10-40	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A33</b>	.....		
2-6	20-80	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A34</b>	.....		
4-12	10-40	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A35</b>	.....		
4-12	20-80	.2-2.0	.....	.....	.....	.....	.....	<b>289B439A36</b>	.....		

<sup>ⓐ</sup> For Flexitest Case Parts refer to RPD 41-076A1.  
<sup>ⓑ</sup> This IRC relay uses an ITH unit.

### Ordering Information

- Give style number and name of part.
- Give the complete nameplate readings.
- State method of shipment desired.
- Send all orders or correspondence to nearest sales office of the company.



**E Element**

Ref. No.	Description of Part	Style Number	Moving Contact, Spring and Adjuster Assembly	
			Relay Type	Style Number Single Trip
1	Electromagnet .....	See Table*		
2	Insulated Tap Screw .....	1545 282 <sup>ⓐ</sup>	IRC-2	880A721G10
3	Upper Bearing Screw .....	52D6291G03*	IRC-5	880A721G09
4	Dial Assembly .....	1878 801	IRC-6	880A721G09
5	Moving Contact, Spring and Adjuster Assembly .....	See Table*	IRC-7	880A721G09
6	Disc and Shaft Assembly .....	880A772G12	IRC-8	880A721G09
7Δ	Upper Bearing .....	289B392G01	IRC-9	880A721G09
8	Lower Bearing .....	184A440G01	IRC-11	880A721G11
9	Lower Bearing Screw .....	3499A37G09*		
10Δ	Nut for Lower Bearing Screw .....	203 056		
11	Insulated Block for Stationary Contact .....	33B3110H02		
12	Stationary Contact .....	3489A63G09*		
13	Contact Plate .....	1732 759		
14Δ	Nut to Mount Stationary Contact .....	1008 149		
15	Permanent Magnet .....	See Table		

Note: Parts indented are included in the part under which they are indented.

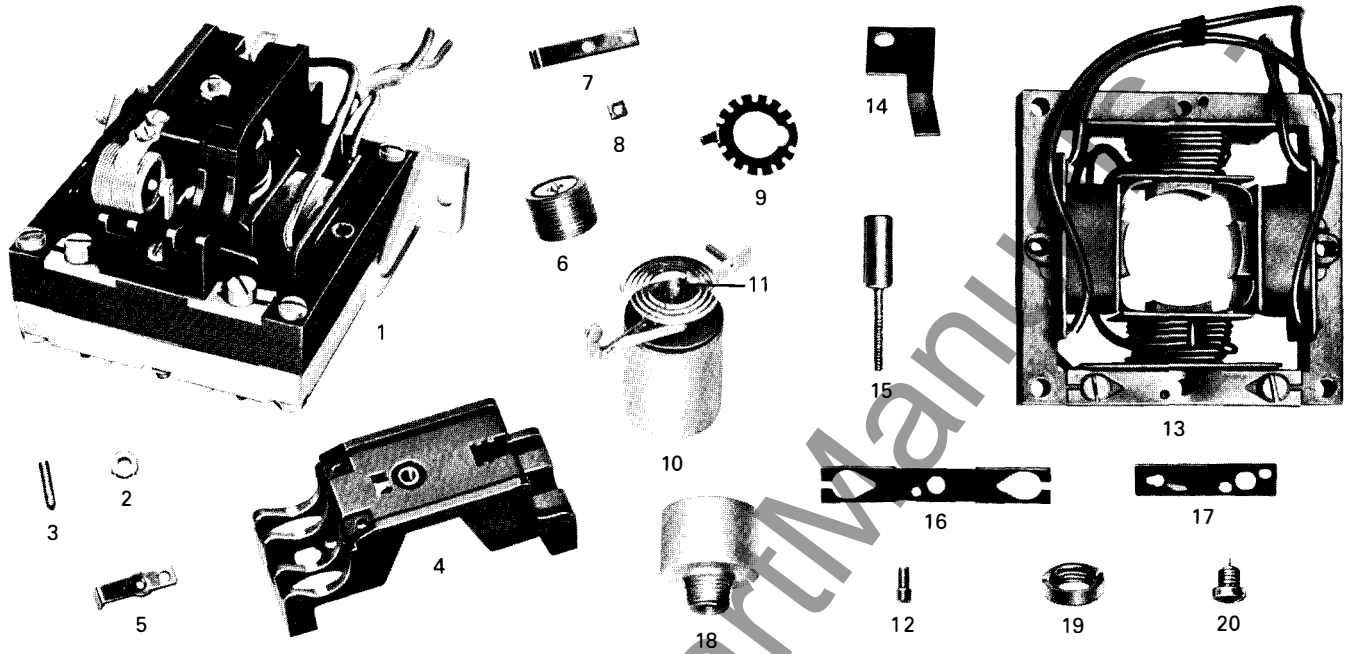
ⓐ Two (2) used.

Δ Not illustrated.

\* Recommended for stock.

**Electromagnet and Permanent Magnet**

Relay Type	Style Number			Permanent Magnet
	Range (Amps)			
	.5-2.5	2-6	4-12	
IRC-2	183A476G05	183A476G10	183A476G15	1732 780
IRC-5	183A476G06	183A476G11	183A476G16	1732 777
IRC-6	183A476G06	183A476G11	183A476G16	1732 779
IRC-7	183A476G07	183A476G12	183A476G17	1732 780
IRC-8	183A476G08	183A476G13	183A476G18	1732 777
IRC-9	183A476G08	183A476G13	183A476G18	1732 777
IRC-11	183A476G09	183A476G14	183A476G19	1732 777



**Cylinder Unit**

Ref. No.	Description of Part	Style Number
1	Cylinder Unit Complete	See Table <sup>Ⓔ</sup>
2	Nut for Upper Bearing Screw	203 056
3	Upper Bearing Screw	3499A37G11*
4	Bridge, Insert and Pin	183A660G01
	Bridge and Insert	60A1533G03 <sup>Ⓔ</sup>
5	Pressure Spring to Lock Stationary Contact	1730 953 <sup>ⓐ</sup>
6	Stationary Contact Assembly (L.H.)	3491A82G09*
	Stationary Contact Assembly (R.H.)	3491A82G12 <sup>Ⓔ</sup> *
7	Clamp for Spring Adjuster	1730 954
8	Nut for Spring Adjuster Clamp Screw	1008 149
9	Spring Adjuster	1730 950
10	Moving Element with Contact and Torque Spring (Less Adjuster)	See Table <sup>Ⓔ</sup> *
11	Upper Bearing	289B392G01
12	Lower Bearing	289B393G02
13	Electromagnet	See Table*
14	Vane	183A304H01 <sup>Ⓔ</sup>
15	Plug Screw	1730 095 <sup>ⓐ</sup> <sup>Ⓔ</sup>
16	Upper Plug Clip	1730 939 <sup>Ⓔ</sup>
17	Lower Plug Clip	1730 096 <sup>ⓐ</sup> <sup>Ⓔ</sup>
18	Core	1730 942
19	Core Nut	1730 945
20	Lower Bearing Screw	3499A37G10*

Note: Parts indented are included in the part under which they are indented.

<sup>ⓐ</sup> Two (2) used.

<sup>Ⓔ</sup> This is an overcurrent (upper) cylinder unit.

<sup>ⓑ</sup> This is a directional (lower) cylinder unit.

<sup>Ⓒ</sup> For lower cylinder units only.

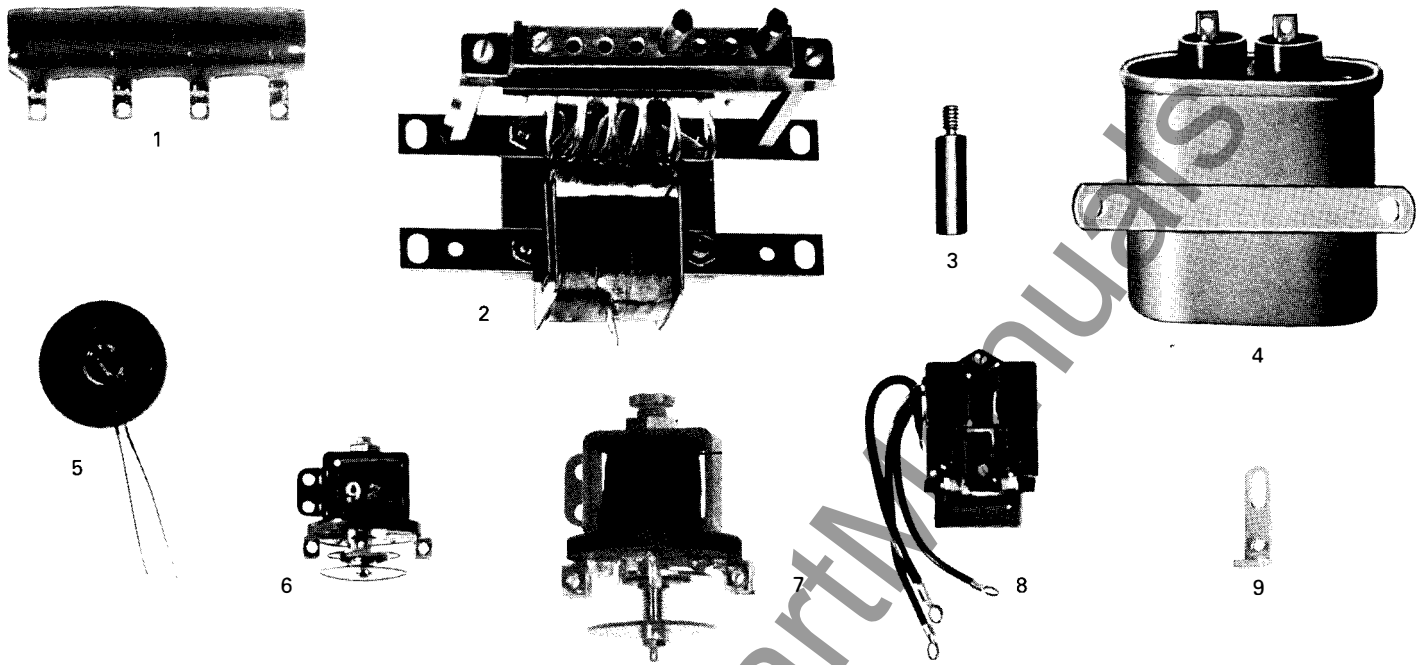
<sup>Ⓓ</sup> This assembly is factory adjusted, do not tamper with cemented sealed screw and nut on contact support arm.

<sup>Ⓔ</sup> The cylinder unit and transformer style numbers are stamped on their frames.

\* Recommended for stock.

**Cylinder Unit<sup>Ⓔ</sup>**

Complete Unit Style Number	Range (Amps)	Style Number of Part	
		Electromagnet	Moving Element
183A582G09 <sup>Ⓔ</sup>	2-8, 4-16, 10-40	289B172G09	184A930G11
183A582G10 <sup>Ⓔ</sup>	.5-2.5, 2-6	1875 057	184A930G12
183A582G11 <sup>Ⓔ</sup>	4-12	1875 058	184A930G12
183A582G26 <sup>Ⓔ</sup>	20-80	289B172G09	184A930G14



**IRC Common Parts**

Ref. No.	Description of Part	Style Number
1	Resistor 6500 Ohms 3.5 Inch Tapped .....	<b>184A626H02*</b>
2	Transformer .....	<b>See Table*</b>
3	Tap Screw .....	<b>1545 282<sup>③</sup></b>
4	Capacitor 1.0 MFD, 60 Hz .....	<b>1877 966*</b>
	Capacitor 1.6 MFD, 50 Hz .....	<b>1875 936*</b>
5	Varistor .....	<b>183A122H02*</b>
6	Contacting Switch .0176 Amp .....	<b>3490A22G18<sup>②</sup> *</b>
7	ITH Unit 4-8 Amp .....	<b>3491A23G12<sup>②</sup> *</b>
	ITH Unit 10-20 Amp .....	<b>3491A23G28<sup>②</sup> *</b>
8	ICS Unit .2-2 Amp, Single Trip, 'T' .....	<b>3491A37G09<sup>②</sup> *</b>
	ICS Unit .2-2 Amp, Single Trip, '1' .....	<b>3491A37G14<sup>②</sup> *</b>
9	Stationary Contact for ICS Unit .....	<b>1732 868<sup>③</sup> *</b>

**Transformer<sup>ⓔ</sup>**

Rating (Amps)	Style Number	
	60 Hz	50 Hz
2-8	<b>407C186G14</b>	<b>407C186G21</b>
4-16	<b>407C186G15</b>	<b>407C186G20</b>
10-40	<b>407C186G16</b>	<b>407C186G22</b>
20-80	<b>407C186G17</b>	<b>407C186G23</b>

Note: Parts indented are included in the part under which they are indented.

② For contactor switch, ITH and ICS unit parts refer to RPD 41-852A1.

③ Two (2) used.

ⓔ Used in IRC-9 relay style 289B439A25 only.

ⓕ Used in IRC-9 relay style 289B439A26 only.

ⓖ The cylinder unit and transformer style numbers are stamped on their frames.

\* Recommended for stock.

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