

## LFE Analog Optical Meter Relays

### Series Analog Optical Meter-Relays

#### 195 Series Optical Meter-Relays

- Plug-In Control Module
- Long Life Lamp Operation
- Plastic Front and Base
- Proven Optical Setpoints
- On/Off or Alarm Control


**195**

#### 196 Series Optical Meter-Relays

- Modern Rectangular Appearance
- Plug-In Control Module
- Proven Optical Setpoints


**196**

The 195 Series and 196 Series Meter-Relays contain an exclusive light sensitive transistor switch that provides the ultimate in control simplicity and reliability. This switch controls the load relays. There are no pointer contacts or mechanical interference in the meter mechanism. The controllers are supplied with a plug-in control module that mounts directly on the rear of the Meter-Relay or may be remotely mounted with an accessory cable.

#### OPTICAL METER-RELAYS—195 & 196 SERIES SPECIFICATIONS

	DC Ranges		AC Ranges (Rectifier Type)	
	Current	Voltage	Current	Voltage
Accuracy:	±2%	±2%	±3%	±3%
Balance:	±1%	±1%	±1%	±1%
Repeatability:	±2%	±2%	±2%	±2%
Resistance Tolerance:	±20%	±5%	—	<10V ±20% ≥10V ±5%
Overload Capacity	1 Second	1000%	≤100V 1000%	150%
	Continuous	150%	>100V 200%	150%
Calibration Frequency:	N/A	N/A	60 Hz	60 Hz
Overshoot (maximum):	20%	20%	20%	20%
Response Time (maximum):	3 sec	3 sec	3 sec	3 sec
Supply Power:	120 VAC <sup>50</sup> / <sub>60</sub> Hz 7 VA MAX			
Load Relay Rating:	DPDT 5A @ 120 VAC Relative			

Effects of shock, vibration, humidity and temperature are equal to or better than ANSI C39.1-1981. Safety (dielectric test, leakage and other hazards): instruments are equal to or better than ANSI C39.5-1974.

The above tolerance limits apply to the standard ranges listed in this bulletin. Special instruments may vary from these limits. Rated circuit to ground voltage=800 RMS (1100 Peak).

\*Depth = Front of Panels to End of Terminals

#### DIMENSIONS

##### 196 Series Dimensions

Model	Height	Width	Depth*	Depth w/Module*
1963 (3½")	3.006	3.756	2.897	6.745
1964 (4½")	3.756	4.632	2.897	6.745

##### 195 Series Dimensions

Model	Height	Width	Depth*	Depth w/Module*
1953 (3½")	3.50	3.50	2.897	6.745
1954 (4½")	4.41	4.85	2.897	6.745

#### OPTIONS (WHERE APPLICABLE)

Setpoint Stop (Sgl or Dbl)

Screwdriver Adjust

Non-listed Ranges

Suppressed Ranges

Stabister Protection:

DC (Left or right)

DC (zero center)

AC

AC or DC Voltmeters w/cal. adjust pot

One-time eng. charge for "customer specials"

Double High or Double Low or Double Reversed

## LFE Analog Optical Meter Relays

### DC Ranges

On/Off Control, Single High Setpoint

Range	Part Number
<b>Microamperes</b>	
0-50	XX-10CY-CY00
50-0-50	XX-16CY-CY00
0-100	XX-10DR-DR00
0-200	XX-10EA-EA00
0-500	XX-10EM-EM00
<b>Milliamperes</b>	
0-1 to 0-800	(See Note)
0-1	XX-10FA-FA00
0-5	XX-10FX-FX00
0-10	XX-10GZ-GZ00
0-500	XX-10KM-KM00
<b>Amperes</b>	
0-1 to 0-50	(See Note)
0-5	XX-10LS-LS00
0-20	XX-10NG-NG00
0-50	XX-10NT-NT00
<b>Millivolts (Shunt Rated)</b>	
0-50	XX-11EC-EC00
0-100	XX-11GB-GB00
<b>Millivolts (For Transducer Applications)</b>	
0-50	XX-12HY-HY00
0-100	XX-12JR-JR00
<b>Volts 1000 Ohms/Volt</b>	
0-1 to 0-600	(See Note)
0-150	XX-12PZ-PZ00
0-300	XX-12RX-RX00
0-600	XX-12SJ-SJ00

DC Ammeters 50 mV Shunt-Rated  
On/Off Control, Single High Setpoint

Scale	Part Number
<b>Amperes</b>	
0-1	XX-11EC-LA00
0-2	XX-11EC-LE00
0-3	XX-11EC-LJ00
0-5	XX-11EC-LS00
0-7.5	XX-11EC-MF00
0-10	XX-11EC-MT00
0-15	XX-11EC-ND00
0-20	XX-11EC-NG00
0-30	XX-11EC-NL00
0-40	XX-11EC-NP00
0-50	XX-11EC-NT00
0-60	XX-11EC-NW00
0-75	XX-11EC-PB00
0-80	XX-11EC-PD00
0-100	XX-11EC-PK00
0-150	XX-11EC-PZ00
0-200	XX-11EC-RL00
0-250	XX-11EC-RS00
0-300	XX-11EC-RX00
0-400	XX-11EC-SC00
0-500	XX-11EC-SF00
0-600	XX-11EC-SJ00
0-800	XX-11EC-SN00
0-1000	XX-11EC-VA00
0-1200	XX-11EC-VB00
0-1500	XX-11EC-VC00
0-2000	XX-11EC-VE00

### AC Ranges

On/Off Control, Single High Setpoint

Range	Part Number
<b>Micromperes</b>	
0-500	XX-14EM-EM00
0-800	XX-14EW-EW00
<b>Milliamperes</b>	
0-1	XX-14FA-FA00
<b>Amperes Transformer Rated</b>	
0-5	XX-14LS-LS00
0-10	XX-14LS-MT00
0-15	XX-14LS-ND00
0-20	XX-14LS-NG00
0-25	XX-14LS-NJ00
0-30	XX-14LS-NL00
0-40	XX-14LS-NP00
0-50	XX-14LS-NT00
0-75	XX-14LS-PB00
0-100	XX-14LS-PK00
0-150	XX-14LS-PZ00
0-200	XX-14LS-RL00
0-250	XX-14LS-RS00
0-300	XX-14LS-RX00
0-400	XX-14LS-SC00
0-500	XX-14LS-SF00
0-600	XX-14LS-SJ00
0-800	XX-14LS-SN00
<b>Volts 1000 Ohms/Volt</b>	
0-10 to 0-300	(See Note)
0-150	XX-15PZ-PZ00

Note: Order by Description

DC Ammeters 100 mV Shunt-Rated  
On/Off Control, Single High Setpoint

Scale	Part Number
<b>Amperes</b>	
0-1	XX-11GB-LA00
0-2	XX-11GB-LE00
0-3	XX-11GB-LJ00
0-5	XX-11GB-LS00
0-7.5	XX-11GB-MF00
0-10	XX-11GB-MT00
0-15	XX-11GB-ND00
0-20	XX-11GB-NG00
0-30	XX-11GB-NL00
0-40	XX-11GB-NP00
0-50	XX-11GB-NT00
0-60	XX-11GB-NW00
0-75	XX-11GB-PB00
0-80	XX-11GB-PD00
0-100	XX-11GB-PK00
0-150	XX-11GB-PZ00
0-200	XX-11GB-RL00
0-250	XX-11GB-RS00
0-300	XX-11GB-RX00
0-400	XX-11GB-SC00
0-500	XX-11GB-SF00
0-600	XX-11GB-SJ00
0-800	XX-11GB-SN00
0-1000	XX-11GB-VA00
0-1200	XX-11GB-VB00
0-1500	XX-11GB-VC00
0-2000	XX-11GB-VE00

### ORDERING GUIDE

Model Number	Part Number Prefix
1953	Change XX to V3
1954	Change XX to V4
1963	Change XX to W3
1964	Change XX to W4

### 195 & 196 SERIES METER RELAY ACCESSORIES AND OPTIONS

#### Accessories/Parts

Description	Part Number
<b>Control Module (Factory Style #3)</b>	
High Setpoint	8889-0003
Low Setpoint	8889-2003
Double Setpoint	8889-3003
<b>Control Modules (Factory Style #2)</b>	
High Setpoint	8889-0001
Low Setpoint	8889-2001
Double Setpoints	8889-3001
<b>Remote Mounting Kit</b>	
Complete Kit	1125-426
Kit w/o cable	1125-425
<b>New Style Lamp/Holder Assembly</b>	
	1207-246
<b>Current Transformers (20 mA AC Secondary)</b>	
Primary Rating:	
5A	2062-0150

### 195 & 196 OPTIONAL SETPOINTS

Range	Part Number
<b>Single Low Setpoint</b>	
Same as Single	Same as Single High      Same as Single
High Setpoint	Setpoint Models Except      High Setpoint
Models	Change digit #3 from 1 to 2      Models
<b>Double Setpoint</b>	
Same as Single	Same as Single High
High Setpoint	Setpoint Models Except      Single High
Models	Change Digit #3 from 1 to 3      Setpoint