

WESCHLER INSTRUMENTS

Crompton Meter Relays

- Monitors and Controls Any Variable Which Can be Converted Into an AC or DC Signal
- Rugged Shock and Vibration Resistant Design
- Indicator, Relays and Power Unit in One Housing
- Control Function Continues if the Indicator Becomes Damaged
- Stable Electronic Switching Circuit Does Not Use Lamps, Photocells, Inductors or Capacitors
- Taut Band, Fluid Damped Indicator
- Isolate Input Signal
- LED Relay State Indicators

Series 239 and 077 meter relays combine a highly accurate indicator with High and Low set point relays. The relays can operate alarm and control devices when the monitored signal value moves outside the chosen set point limits shown by adjustable re index pointers. A single compact case houses the unit which requires only the input signal and power supply thus saving space and installation time.



External Power Supply

An External AC or DC supply is required for operation of all Meter Relays and must be specified at the time of ordering.

AC – Standard Unit will accept 120V or 240V, 60 Hz (Selectable internally at factory)

DC – 12V, 24V, 48V and 125V DC

Note: External Supplies derived from rectified AC must be externally filtered to minimize Ripple Content.

Scales:

Standard Scales may be selected from the 1, 1.5, 2, 3, 4, 5, 6, 8, 10 and multiples of 10 or 100 in standard face type. Any caption using standard face type may be specified. Center zero scales are standard where the end value is listed in the above series.

Relay State Indicators:

Red LED relay state indicators are fitted in dial as standard at no extra charge.

Ordering Information:

Due to the Versatility of this product it is difficult to list the complete part numbers for all the various functions. Please provide the basic catalog number listed above, along with input, scale, frequency, external power supply, and any options (see table below) you may require. We will then generate a complete part number.

SPECIFICATIONS

Input Signal Ratings

Frequency Monitoring: 45/65 Hz or 55/65 Hz

DC Voltage: 10 mV to 800V, 10 ohm/v

DC Current: 1 uA to 15A, 20 mV drop

AC Voltage: 10V to 600V 10K ohm/v

AC Current: 1A to 15A, 5A CT Operation

Thermocouples: Standard Outputs Min. 10 mV Span

RTD Operation: 10 Ohm Copper, 100 Ohm Platinum

Overloads: 1.2 x continuous, up to 200V or 100 mA
10 x for 10 seconds

Damping Time: 1 Second

Operating Time: 250 m/sec to 10 sec adjustable

Relay Operation: SPDT contact on each setpoint

Contact Rating: 5A, 250V, 1000W non-inductive

WESCHLER INSTRUMENTS

Crompton Meter Relays

239 SERIES ORDERING INFORMATION

239-302A	2 Output Relays, 2 Set Points, High/Low Control
239-301A	1 Output Relay, 1 Set Point, High Control Only
239-307A	1 Output Relay, 1 Set Point, Low Control Only
239-300A	1 Output Relay, 2 Set Points, High/Low Control
239-30TA	2 Output Relays, 2 Set Points, High/Low Control, Thermocouple Applications Fitted with Cold Junction Compensation Circuitry
239-30RA	2 Output Relays, 2 Set Points as 239-30TA but for RTD Applications
239-304A	2 Output Relays, 2 Set Points, High Relay Downscale Energized, Low Relay Upscale Energized
239-305A	2 Output Relays, 2 Set Points, both Relays Downscale Energized

Note: Specify Calibration Information (See below Ordering Information)

077 SERIES ORDERING INFORMATION

077-302A	2 Output Relays, 2 Set Points, High/Low Control
077-301A	1 Output Relay, 1 Set Point, High Control Only
077-307A	1 Output Relay, 1 Set Point, Low Control Only
077-300A	1 Output Relay, 2 Set Points, High/Low Level Control
077-30TA	2 Output Relays, 2 Set Points, High/Low Control, Thermocouple Applications (Specify Type), Fitted with Cold Junction Compensation Circuitry
077-30RA	2 Output Relays, 2 Set Points, as 077-30TA, but for R.T.D. Applications (Specify 10 ohm Copper or 100 ohm Platinum)
077-303A	2 Output Relays, 2 Set Points, both Relays Upscale Energized
077-304A	2 Output Relays, 2 Set Points, High Relay, Downscale Energized, Low Relay Upscale Energized
077-305A	2 Output Relays, 2 Set Points, both Relays Downscale Energized

Note: Specify Calibration Information (See below Ordering Information)

OPTIONAL EXTRAS

Description	Code
4-20 mADC Suppressed Zero Input	HG
5 AAC input - A 5A/10A internal CT is fitted permitting connection to the secondary of any of an external instrument transformer	LS
Latching on both relays (specify reset operation)	Consult
Mirror Dial	Consult
Thumb Screw Set Point Adjuster(s)	FK
Expanded Scale	
Off-Set Zero Scale	
Time Proportional Control-Models 239-30T and 239-30RA	TP
Extended Operating Temperature Range (-25 to +60°C)	ET
12V, 24V, 48V External Power	MU, BD, BE
125 VDC External Power	BI
Retrofit Mounting Plate Allows Model 239 to be mounted in place of Model 237 using same holes	RP
Double Pole, Double throw relays have 0.3 to 20 Second Adjustable Time Delay as Standard	
Other options and special features available upon request	



239 ▲



077 ▲

WESCHLER INSTRUMENTS

Beede Analog Meter Relays

MR4—Versatile Relay in Rugged Housing for Hostile Environments

- Display: Analog Pointer Style
- Case Size: Available in 3- or 4-Inch Case
- Optical, Noncontacting Setpoints
- Solid-State Optics—Completely Immune to Ambient Light
- Long-Life, Solid-state, Infrared LED Light Source
- Setpoint Control Knobs Designed for Rough Handling
- Optional, Remote Mounted Relays
- Available with High-Impact Resistant, Noryl Resin Cover or Clear Lexan
- Single or Dual Setpoints
- Wide Variety of Relay Logic Available



MR4 ▲

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: MR4-23-07-0/5 AAC-B-04-FS(0-150 AC Amperes)

Model Table A	Range/Scale Table B	Options Table C
Table A	Model	Style
3-Inch	MR4-13-07	Centurion
	MR4-23-07	Centurion
	MR4-13-13	QA-Lexan
	MR4-23-13	QA-Lexan
4-Inch	MR4-14-07	Centurion
	MR4-24-07	Centurion
	MR4-14-13	QA-Lexan
	MR4-24-13	QA-Lexan
	MR4-14-05	Motor Load
	MR4-24-05	Motor Load
Table B	Standard Ranges	
AC Milliamp	0-50 mAAC, 0-100 mAAC, 0-500 mAAC	
AC Amperes	0-1 AAC, 0-2.5 AAC, 0-5 AAC	
AC Volts	0-150 VAC, 0-300 VAC, 0-600 VAC	
Frequency	45-55 Hz, 46-65 Hz, 55-65 Hz	
AC Motor Load**	Adjustable from 0.5 AAC to 7.5 AAC	
Table C (Options)	Single Setpoint	Double Setpoint
Power, 12 VDC to 24 VDC	A-01	A-01
Power, 11 VAC to 30 VAC	A-06	A-06
Relay Logic, High-High	—	B-02
Relay Logic, Low-Low	B-04	B-04
Relay Logic, Delayed	B-05	B-05
Relay, Dual Setpoint DPDT		C-21
Relay, Delayed Latch*	H-10	H-12
Alarm Lights*	D-01	D-03
Manual Reset Switch*	D-04	D-05
Setpoints, Screwdrive Adjust*	F-01	F-01
Terminal Safety Cover	F-07	F-07
Dustproof & Splashproof Resistant	F-10	F-10

* Per Setpoint

** MR2 Style, 4-Inch Only

S Standard (Input Range and Scale are the Same)

FS Factory Scaling (custom-specify scaling)

SPECIFICATIONS

Display	Analog pointer style
Power	115/230 VAC @ 47 Hz-63 Hz, 12V-24 VDC optional
Accuracy	±2% of full scale
Coincidence	±1% of operating span
Operating Temperature	-20°F-165°F
Relays	5A @ 115V-230 VAC, gold-plated contacts Single setpoint 1 DPDT Dual setpoint 2 SPDT
Failsafe Logic Mode	Standard
Size	
Centurion Type (Noryl Resin)	
3-inch	3.13" H x 3.24" W x 5.245" D
4-inch	4.21" H x 5.03" W x 5.245" D
QA Type (Clear Lexan)	
3-inch	2.90" H x 3.73" W x 5.58" D
4-Inch	4.07" H x 5.19" W x 5.58" D
AC Milliamp	0-50, 0-100, 0-500
AC Volts (Rectified)	0-150, 300 or 600
AC Motor Load Current	0.5A-7.5A
AC Current	0-1, 0-5, 0-10
Frequency	55 to 65 Hz

WESCHLER INSTRUMENTS

Simpson Analog Meter Relays

- Commercially Sealed Moisture and Dust Proof
- Single and Dual Set Points
- Calibration not Affected by Steel Panel Mounting
- Rugged Metal Case for Rigorous Environments
- Wide Variety of Control, Alarm and Limit Use
- Relays Can Be Set for Manual or Automatic Reset

Rugged Seal

The 33 Series instruments offer a wide variety of applications in control, alarm and limit use. Photo conductor sensing eliminates all interference with the indicating meter. These relays incorporate an amplifier input which drives a rugged high torque pivot and jewel or taut-band meter.

Metal cased construction withstands rigorous environmental conditions. The metal cover with a drawn steel rear case gives complete magnetic isolations. In addition, each meter is moisture, dust, and dirt proof and recommended for use in wash down areas.



▲ 33 Series

ANALOG METERS

SPECIFICATIONS

Calibration Accuracy:	±2% of Full Scale (except ±3% for ACA)
Control Point(s) Adjustment:	Single: 0-100% of arc Double, Low limit 0-95% of arc. High limit 5-100% of arc. Adjustable within 4° of each other
Switching:	Within 1% of indication
Differential:	"ON", "Off" difference is within 0.5% of FS
Frequency Response:	50-1000 Hz
Relay Contacts:	5 amps, 115 VAC
Operation Temperature:	5° to 55°C
Overload (1 second)	10 Times Full Scale Rating
Overload (Continuous)	1.5 Times Full Scale Rating
Power:	108-132 VAC, 50-400 Hz

SPECIFICATIONS

Range	Scale	Model 3323 3½" SSP Cat. #	Model 3323 3½" DSP Cat. #	Model 3324 4½" SSP Cat. #	Model 3324 4½" DSP Cat. #
DC Millivoltmeters					
0-50	0-50	21663	21623	21670	21630
DC Volts					
0-1	0-1	21664	21624	21671	21631
0-50	0-50	21665	21625	21672	21632
DC Milliammeters					
0-1	0-1	21661	21621	21668	21628
AC Voltmeters					
0-10	0-10	21675	21635	21679	21639
0-150	0-150	21676	21636	21680	21640
0-300	0-300	21681	21641	21682	21642
AC Ammeters					
0-5	0-5	21673	21633	21677	21637

WESCHLER INSTRUMENTS

LFE/Triplett 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

196 Series Optical Meter-Relays

- Modern Rectangular Appearance
- Plug-In Control Module
- Proven Optical Setpoints
- Limit Lights & Manual Reset Switches Optional (Model 1967)

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.



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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 ⁵⁰ / ₆₀ Hz 7 VA MAX			
Load Relay Rating:	DPDT 5A @ 120 VAC Relative (Model 1967-SPDT only)			

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

WESCHLER INSTRUMENTS

LFE/Triplett Analog Optical Meter Relays

DC Ranges

On/Off Control, Single High Setpoint

Range	Part Number
Microamperes	
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
Milliamperes	
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
Amperes	
0-1 to 0-50	(See Note)
0-5	XX-10LS-LS00
0-20	XX-10NG-NG00
0-50	XX-10NT-NT00
Millivolts (Shunt Rated)	
0-50	XX-11EC-EC00
0-100	XX-11GB-GB00
Millivolts (For Transducer Applications)	
0-50	XX-12HY-HY00
0-100	XX-12JR-JR00
Volts 1000 Ohms/Volt	
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
Amperes	
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
Micromperes	
0-500	XX-14EM-EM00
0-800	XX-14EW-EW00
Milliamperes	
0-1	XX-14FA-FA00
Amperes Transformer Rated	
0-5	XX-14LA-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
Volts 1000 Ohms/Volt	
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
Amperes	
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
Control Module (Factory Style #3)	
High Setpoint	8889-0003
Low Setpoint	8889-2003
Double Setpoint	8889-3003
Control Modules (Factory Style #2)	
High Setpoint	8889-0001
Low Setpoint	8889-2001
Double Setpoints	8889-3001
Remote Mounting Kit	
Complete Kit	1125-426
Kit w/o cable	1125-425
New Style Lamp/Holder Assembly	
	1207-246
Current Transformers (20 mA AC Secondary)	
Primary Rating:	
5A	2062-0150

195 & 196 OPTIONAL SETPOINTS

Range	Part Number
Single Low Setpoint	
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
Double Setpoint	
Same as Single	Same as Single High
High Setpoint	Setpoint Models Except Single High
Models	Change Digit #3 from 1 to 3 Setpoint
Manual Reset Pushbutton and Alarm Lights	
4 1/2 inch Model	Digit 1 & 2 changes Single Setpoint
196 ONLY 1964	from W4 to W7
Changes to 1967	Double Setpoint