

Sifam Tinsley Smartlook Series Panel-Mounted Meters



PK-250-240-LALA

Smartlook series analog panel meters accurately measure and display a wide range of electrical and electronic parameters. These moving iron and moving coil panel meters are available in two sizes – 2.5-inch and 3.5-inch. They are housed in molded polycarbonate cases and feature a high-torque pivot and jewel movement, and their rugged design makes them suitable for demanding environmental applications.

Moving coil meters feature center-cored, self-shielding moving coil movements using pivots, hairspring and spring jewels. Variations in movement are limited by design. All

DC voltmeters are 1000 Ω/V except in mV ranges.

Moving iron meters feature a clapper-type repulsion design utilizing a pivot, hairspring and jewel movement. The bottom jewel is oil-filled to provide damping, while the top spring is for resilience. All voltmeters are manufactured with an internal voltage dropper resistor.

The frequency meter uses a 90 $\mu A/4 K\Omega$ movement driven by an EMC hard frequency conversion circuit.

Standard dials are matte white with black-printed scales and a spear black pointer balanced within 1% of scale length and feature a highly repeatable flattened scale shape, ensuring consistently accurate measurements.

Features

- Available in two ANSI standard case sizes – 2.5-inch and 3.5-inch
- Surface mounting
- Withstands high levels of shock, vibration, dirt and humidity
- Dust and water jet protected NEMA 4 / IP55 from the front using included panel gasket
- AC meters provide true RMS measurement
- Near-linear scale
- Glass-filled polycarbonate housing (UL 94 V-0)
- Complies with EN/IEC 61010-1 and meets IEC 414 Dielectric Test
- Complies with international standards EN/IEC 60051 and ANSI-C39.1

Applications

- Switchgear
- Distribution systems
- Control panels
- Generator sets
- Energy management
- Building management
- Utility power management
- Process control
- Motor monitoring



Smartlook Series Meters

Models available:

• AC Voltmeter	• DC Voltmeter
• AC Ammeter	• DC Ammeter
• Frequency meter	

**Drop-in replacement to
Yokogawa Biglook series**

Available in 2.5" and 3.5" case sizes

Sifam Tinsley Smartlook Series Panel-Mounted Meters



Sifam Tinsley Smartlook Series Panel-Mounted Meters General Specifications

Electrical	
Maximum Terminal Voltage to Ground	850 V peak
Dielectric Withstand Test	2600 V for 1 minute (IEC 414)
Scale and Pointer	
Pointer	Spear type, 90° deflection
Scale Characteristics	
Scale Division	Coarse / fine
Scale Length	2.5-in models: 1.99 in [50.61 mm] 3.5-in models: 2.55 in [64.76 mm]
Mechanical	
Case	Black molded polycarbonate, flame retardant and drip-proof as per UL 94 V-0
Front Window	Polycarbonate (transparent)
Position of Use	Vertical $\pm 5\%$
Mounting	Round 3-hole Mounting studs (4-40 UNC) on panel $\leq 10\text{mm}$ [0.39 in] thick Torque 4 lb•in [0.4 N•m]
Cutout Size	2.16 in [5.49 cm] for 2.5-in meter / 2.71 in [6.88 cm] for 3.5-in meter
Connections	
Terminals	10-32 UNF, washer 10-32 UNF (recommended lug M5 ring type) Terminal torque 13 lb•in [1.5 N•m]
Environmental	
Climatic Suitability	Climate category II as per IEC 60051 (climatic class 3 according to VDE/VDI 3540)
Operating Temperature	0 to 40 °C [32 to 104 °F]
Storage Temperature	-20 to +55 °C [-4 to +131 °F]
Humidity	25% to 80% nominal range of use (Max 80% for temperatures up to 31 °C [87.8 °F] decreasing linearly to 50% at 40 °C [104 °F])
Installation Location	Indoor
NEMA Rating	NEMA 4 (IP55) with included gasket
Maximum Altitude	2000 m [6561.68 ft]
Shock Resistance	15 g for pulse duration of 11ms
Vibration Resistance	ANSI C39.1 cl. 5. 13
External Magnetic Field	Max 0.5 mT (0.4 kA/m)
Applicable Standards	
Terminal Bolts/Leads	DIN 46200 / 46282
Safety Requirements and Protective Measures	IEC 529, EN/IEC 61010-1
Performance Specifications For Direct Acting Indicating	IS 1248 ANSI C39.1 1981 EN/IEC 60051-1
UL Compatibility	UL 94 V-0
Agency Approvals	UL Recognized File E471457, cCSAus File 263805, CE To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Note: DC shunt rated meters calibrated for 0.035 Ω 2-way lead resistance. Recommend maximum 5.5 ft 14 AWG stranded uncoated copper wire (Class B stranding). Resistance may vary depending on wire gauge, material, and stranding class.

Safety precautions

- 1) Instruments with damaged window or glass must be disconnected from the mains.
- 2) Adequate safety clearance must be maintained to control panel fasteners and to sheet metal housing if non-insulated connector wires are used.
- 3) Instruments are to be used in a grounded panel.

Sifam Tinsley Smartlook Series Panel-Mounted True RMS AC Ammeters

**PK-250-240-LALA****PK-250-340-LSTM**

Sifam Tinsley Smartlook Series Panel-Mounted True RMS AC Ammeters Selection Guide

Part Number	Price	Size (in [mm])	Rating (AC)	Display Scale	Input Type	Frequency Rating	Accuracy	Overload Rating	Fuse	Burden	Movement Type	Drawing					
<u>PK-250-240-LALA</u>	\$31.50	2.5 [63.5]	1 A	0-1 A AC	Self- contained	50/60 Hz	±1.5% at 10 to 100% of full scale deflection	1.2x for 2 hours, 10x for 5 seconds	1 A UL/CSA approved fuse with voltage rating no less than voltage of current being measured	0.5 VA	Pivot and jewel (moving iron)	<u>PDF</u>					
<u>PK-250-340-LALA</u>	\$35.00	3.5 [88.9]	1 A	0-1 A AC					<u>PDF</u>								
<u>PK-250-240-LSLS</u>	\$31.50	2.5 [63.5]	5 A	0-5 A AC					5 A UL/CSA approved fuse with voltage rating no less than voltage of current being measured			<u>PDF</u>					
<u>PK-250-340-LSLS</u>	\$35.00	3.5 [88.9]	5 A	0-5 A AC					<u>PDF</u>								
<u>PK-250-240-MTMT</u>	\$31.50	2.5 [63.5]	10 A	0-10 A AC					10 A UL/CSA approved fuse with voltage rating no less than voltage of current being measured			<u>PDF</u>					
<u>PK-250-340-MTMT</u>	\$35.00	3.5 [88.9]	10 A	0-10 A AC					<u>PDF</u>								
<u>PK-250-240-LSNT</u>	\$31.50	2.5 [63.5]	5 A	0-50 A AC	Transformer rated				50/60 Hz			±1.5% at 10 to 100% of full scale deflection	1.2x for 2 hours, 10x for 5 seconds	CT circuits should not be fused	0.5 VA	Pivot and jewel (moving iron)	<u>PDF</u>
<u>PK-250-340-LSNT</u>	\$35.00	3.5 [88.9]	5 A	0-50 A AC													<u>PDF</u>
<u>PK-250-240-LSPK</u>	\$31.50	2.5 [63.5]	5 A	0-100 A AC													<u>PDF</u>
<u>PK-250-340-LSPK</u>	\$35.00	3.5 [88.9]	5 A	0-100 A AC													<u>PDF</u>
<u>PK-250-240-LSRL</u>	\$31.50	2.5 [63.5]	5 A	0-200 A AC													<u>PDF</u>
<u>PK-250-340-LSRL</u>	\$35.00	3.5 [88.9]	5 A	0-200 A AC													<u>PDF</u>
<u>PK-250-240-LSSC</u>	\$31.50	2.5 [63.5]	5 A	0-400 A AC													<u>PDF</u>
<u>PK-250-340-LSSC</u>	\$35.00	3.5 [88.9]	5 A	0-400 A AC													<u>PDF</u>
<u>PK-250-240-LSSN</u>	\$31.50	2.5 [63.5]	5 A	0-800 A AC													<u>PDF</u>
<u>PK-250-340-LSSN</u>	\$35.00	3.5 [88.9]	5 A	0-800 A AC													<u>PDF</u>
<u>PK-250-240-LSTE</u>	\$31.50	2.5 [63.5]	5 A	0-1600 A AC													<u>PDF</u>
<u>PK-250-340-LSTE</u>	\$35.00	3.5 [88.9]	5 A	0-1600 A AC													<u>PDF</u>
<u>PK-250-340-LSTM</u>	\$35.00	3.5 [88.9]	5 A	0-2000 A AC													<u>PDF</u>

Sifam Tinsley Smartlook Series Panel-Mounted True RMS AC Voltmeters

**PK-250-244-PZPZ****PK-250-344-PZUL**

Sifam Tinsley Smartlook Series Panel-Mounted True RMS AC Voltmeters Selection Guide

Part Number	Price	Size (in [mm])	Rating (VAC)	Display Scale	Input Type	Frequency Rating	Accuracy	Overload Rating	Fuse	Burden	Movement Type	Drawing
<u>PK-250-244-PZPZ</u>	\$31.50	2.5 [63.5]	150	0-150 VAC	Self-contained	50/60 Hz	±1.5% at 10 to 100% of full scale deflection	1.2x for 2 hours, 2x for 5 seconds	Direct connection: UL/CSA approved 1 A fast-acting fuse with breaking capacity of 35 A or greater, voltage no less than highest circuit voltage connected to meter. PT connection: Fuse Potential Transformer (PT) to NEC / CEC requirements	4.5 VA	Pivot and jewel (moving iron)	<u>PDF</u>
<u>PK-250-344-PZPZ</u>	\$35.00	3.5 [88.9]										<u>PDF</u>
<u>PK-250-244-RXRX</u>	\$31.50	2.5 [63.5]	300	0-300 VAC	Self-contained							<u>PDF</u>
<u>PK-250-344-RXRX</u>	\$35.00	3.5 [88.9]										<u>PDF</u>
<u>PK-250-244-PZRX</u>	\$31.50	2.5 [63.5]	150	0-300 VAC	Transformer rated							<u>PDF</u>
<u>PK-250-344-PZRX</u>	\$35.00	3.5 [88.9]										<u>PDF</u>
<u>PK-250-244-SJSJ</u>	\$31.50	2.5 [63.5]	600	0-600 VAC	Self-contained							<u>PDF</u>
<u>PK-250-344-SJSJ</u>	\$35.00	3.5 [88.9]										<u>PDF</u>
<u>PK-250-244-PZSJ</u>	\$31.50	2.5 [63.5]	150	0-600 VAC	Transformer rated							<u>PDF</u>
<u>PK-250-344-PZSJ</u>	\$35.00	3.5 [88.9]										<u>PDF</u>
<u>PK-250-344-PZUL</u>	\$35.00	2.5 [63.5]	150	0-5250 VAC	Transformer rated							<u>PDF</u>

Sifam Tinsley Smartlook Series Panel-Mounted Frequency Meters

**PK-254-250-AJAJ****PK-254-250-ANAN**

Sifam Tinsley Smartlook Series Panel-Mounted Frequency Meters Selection Guide

Sifam Tinsley Smartlook Series Panel-Mounted Frequency Meters Selection Guide												
Part Number	Price	Size (in [mm])	Rating	Display Scale	Center Scale	Input Type	Accuracy	Voltage Input Range	Fuse	Burden	Movement Type	Drawing
<u>PK-254-250-AJAJ</u>	\$31.50	2.5 [63.5]	120 VAC	45-65 Hz	55 Hz	Self- contained and transformer rated	±0.5% of end scale value	±15%	Direct connection: UL/CSA approved 1 A fast-acting fuse with breaking capacity of 35 A or greater, voltage no less than highest circuit voltage connected to meter. PT connection: Fuse Potential Transformer (PT) to NEC/ CEC requirements.	4 VA	Pivot and jewel (self- contained)	PDF
<u>PK-254-350-AJAJ</u>	\$35.00	3.5 [88.9]										PDF
<u>PK-254-250-ANAN</u>	\$31.50	2.5 [63.5]		55-65 Hz	60 Hz							PDF
<u>PK-254-350-ANAN</u>	\$35.00	3.5 [88.9]										PDF

Sifam Tinsley Smartlook Series Panel-Mounted DC Ammeters

**PK-250-200-HFHF****PK-250-324-ECSS**

Sifam Tinsley Smartlook Series Panel-Mounted DC Ammeters Selection Guide

Part Number	Price	Size (in [mm])	Rating	Display Scale	Input Type	Accuracy	Overload Rating	Fuse	Sensitivity	Calibrated 2-Way Shunt Lead	Movement Type	Drawing
PK-250-200-HFHF	\$31.50	2.5 [63.5]	0-20 mA DC	0-20 mA DC	Self- contained	±1.5% of full scale	1.2x for 2 hours, 10x for 5 seconds	0.032A UL/CSA approved fuse with voltage rating no less than voltage of current being measured	N/A	N/A	Pivot and jewel (moving coil)	PDF
PK-250-300-HFHF	\$35.00	3.5 [88.9]										PDF
PK-250-200-HEHE	\$31.50	2.5 [63.5]	4-20 mA DC	4-20 mA DC								PDF
PK-250-300-HEHE	\$35.00	3.5 [88.9]										PDF
PK-250-200-LALA	\$31.50	2.5 [63.5]	0-1 A DC	0-1 A DC				1 A UL/CSA approved fuse with voltage rating no less than voltage of current being measured				PDF
PK-250-200-LSLS	\$31.50	2.5 [63.5]	0-5 A DC	0-5 A DC				5 A UL/CSA approved fuse with voltage rating no less than voltage of current being measured				PDF
PK-250-300-LSLS	\$35.00	3.5 [88.9]										PDF
PK-250-200-MTMT	\$31.50	2.5 [63.5]	0-10 A DC	0-10 A DC				10 A UL/CSA approved fuse with voltage rating no less than voltage of current being measured				PDF
PK-250-300-MTMT	\$35.00	3.5 [88.9]										PDF
PK-250-224-ECNG	\$31.50	2.5 [63.5]	50 mV DC (shunt- rated)	0-20 A DC	Shunt rated	±1.5% of full scale	1.2x for 2 hours, 10x for 5 seconds	N/A	0.16 kΩ/V	0.035 Ω		PDF
PK-250-324-ECNG	\$35.00	3.5 [88.9]										PDF
PK-250-224-ECNT	\$31.50	2.5 [63.5]	50 mV DC (shunt- rated)	0-50 A DC								PDF
PK-250-324-ECNT	\$35.00	3.5 [88.9]										PDF
PK-250-224-ECPZ	\$31.50	2.5 [63.5]	50 mV DC (shunt- rated)	0-150 A DC								PDF
PK-250-324-ECPZ	\$35.00	3.5 [88.9]										PDF
PK-250-224-ECRL	\$31.50	2.5 [63.5]	50 mV DC (shunt- rated)	0-200 A DC								PDF
PK-250-324-ECRL	\$35.00	3.5 [88.9]										PDF
PK-250-224-ECSC	\$31.50	2.5 [63.5]	50mV DC (shunt- rated)	0-400 A DC								PDF
PK-250-324-ECSC	\$35.00	3.5 [88.9]									PDF	
PK-250-224-ECSF	\$31.50	2.5 [63.5]	50 mV DC (shunt- rated)	0-500 A DC							PDF	
PK-250-324-ECSF	\$35.00	3.5 [88.9]									PDF	
PK-250-224-ECSS	\$31.50	2.5 [63.5]	50 mV DC (shunt- rated)	0-1000 A DC							PDF	
PK-250-324-ECSS	\$35.00	3.5 [88.9]									PDF	

Note 1: 2-way lead resistance. Recommend maximum 5.5 ft 14 AWG stranded uncoated copper wire (Class B stranding). Resistance may vary depending on wire gauge, material, and stranding class.

Sifam Tinsley Smartlook Series Panel-Mounted DC Voltmeters

**PK-250-220-NDND****PK-250-320-SJSJ**

Sifam Tinsley Smartlook Series Panel-Mounted DC Voltmeters Selection Guide

Part Number	Price	Size (in [mm])	Rating (VDC)	Display Scale	Input Type	Accuracy	Overload Rating	Fuse	Sensitivity	Movement Type	Drawing
<u>PK-250-220-NDND</u>	\$31.50	2.5 [63.5]	15	0-15 V DC	Self- contained	$\pm 1.5\%$ of full scale	1.2x for 2 hours, 2x for 5 seconds	UL/CSA approved 1 A fast-acting fuse with breaking capacity of 35 A or greater, voltage no less than highest circuit voltage connected to meter.	1k Ω/V	Pivot and jewel (moving coil)	<u>PDF</u>
<u>PK-250-320-NDND</u>	\$35.00	3.5 [88.9]									<u>PDF</u>
<u>PK-250-220-NTNT</u>	\$31.50	2.5 [63.5]	50	0-50 V DC							<u>PDF</u>
<u>PK-250-320-NTNT</u>	\$35.00	3.5 [88.9]									<u>PDF</u>
<u>PK-250-220-PBPB</u>	\$31.50	2.5 [63.5]	75	0-75 V DC							<u>PDF</u>
<u>PK-250-320-PBPB</u>	\$35.00	3.5 [88.9]									<u>PDF</u>
<u>PK-250-220-PZPZ</u>	\$31.50	2.5 [63.5]	150	0-150 V DC							<u>PDF</u>
<u>PK-250-320-PZPZ</u>	\$35.00	3.5 [88.9]									<u>PDF</u>
<u>PK-250-220-SCSC</u>	\$31.50	2.5 [63.5]	400	0-400 V DC							<u>PDF</u>
<u>PK-250-320-SCSC</u>	\$35.00	3.5 [88.9]									<u>PDF</u>
<u>PK-250-220-SJSJ</u>	\$31.50	2.5 [63.5]	600	0-600 V DC							<u>PDF</u>
<u>PK-250-320-SJSJ</u>	\$35.00	3.5 [88.9]									<u>PDF</u>

Sifam Tinsley Smartlook Series Panel-Mounted Meters Accessories



SPAR-SA00-0900

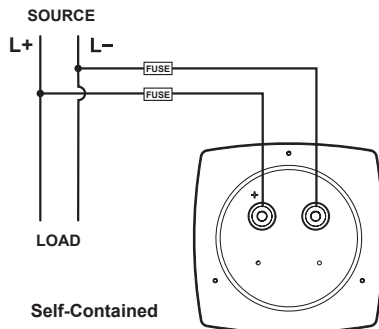
Sifam Tinsley Smartlook Series Panel-Mounted Meters Accessories Selection Guide			
Part Number	Price	Description	Drawing
<u>SPAR-SA00-0899</u>	\$5.00	Gasket, replacement. For use with Smartlook series 2.5-inch analog panel meters.	PDF
<u>SPAR-SA00-0900</u>	\$5.00	Gasket, replacement. For use with Smartlook series 3.5-inch analog panel meters.	PDF

Sifam Tinsley Smartlook Series Panel-Mounted Meters Wiring Diagrams



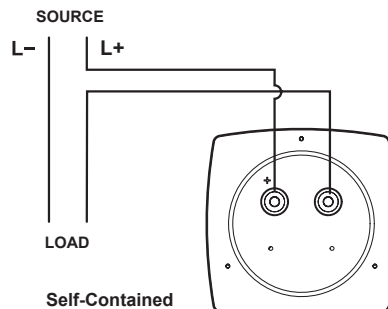
DC Voltmeter

PK-250-220-(NDND, NTNT, PBPB, PZPZ, SCSC, SJSJ)
PK-250-320-(NDND, NTNT, PBPB, PZPZ, SCSC, SJSJ)



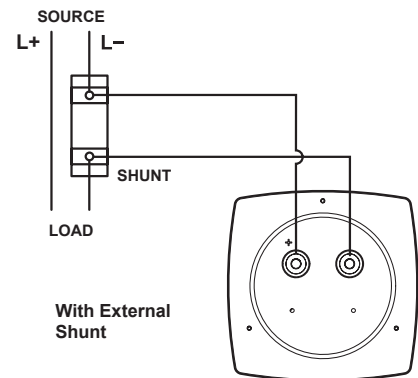
DC Ammeter

PK-250-200-(HFHF, HEHE, LALA, LSLS, MTMT)
PK-250-300-(HFHF, HEHE, LSLS, MTMT)



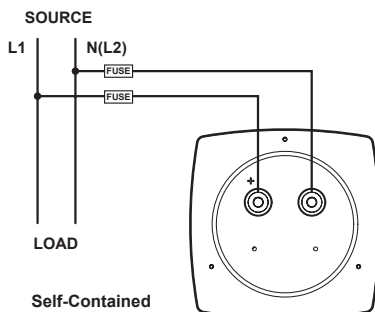
DC Ammeter

PK-250-224-(ECNG, ECNT, ECPZ, ECRL, ECSC, ECSF, ECSS)
PK-250-324-(ECNG, ECNT, ECPZ, ECRL, ECSC, ECSF, ECSS)



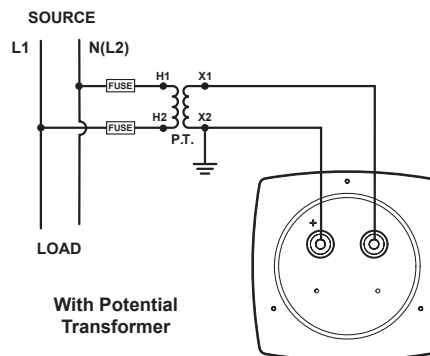
AC Voltmeter

PK-250-244-(PZPZ, RXRX, SJSJ)
PK-250-344-(PZPZ, RXRX, SJSJ)



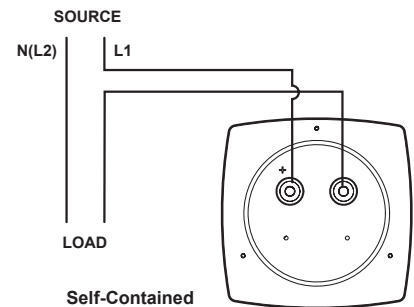
AC Voltmeter

PK-250-244-(PZRX, PZSJ)
PK-250-344-(PZRX, PZSJ, PZUL)



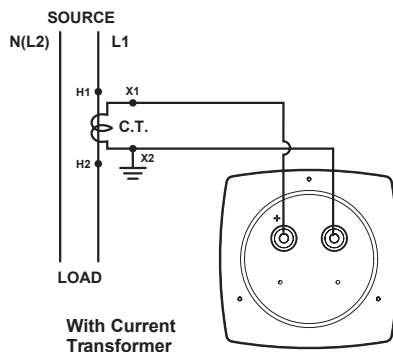
AC Ammeter

PK-250-240-(LALA, LSLS, MTMT)
PK-250-340-(LALA, LSLS, MTMT)



AC Ammeter

PK-250-240-(LSNT, LSPK, LSRL, LSSC, LSSN, LSTE)
PK-250-340-(LSNT, LSPK, LSRL, LSSC, LSSN, LSTE, LSTM)



Frequency Meter

PK-254-250-(AJAJ, ANAN)
PK-254-350-(AJAJ, ANAN)

