



PANEL BOARD ACCESSORIES





Westinghouse

Leading The Future of Electrification

- A Global Heritage Brand with 130 Years of Product Innovation
- Perfect Products, Creative Services, and Competitive Price

**Since 1886,
Westinghouse
Has Brought
The Best
To Life.**

Westinghouse remains a trusted name globally in consumer and industrial products. Built on a heritage of innovation and entrepreneurial spirit, Westinghouse products were the first to supply the United States with AC electric power, transmit a commercial radio broadcast and capture man's first step on the moon. Today, Westinghouse continues to grow its diverse portfolio with a wide range of product categories that include home appliances, consumer electronics, lighting and power generation.

Multifunction Meter (WMM)



Feature

- 7 segment bright red LED display
- Site Programmable CT and PT ratio
- True RMS measurement
- Password protection
- Optional features
 - a) 60A direct current (External CT module available)
-
-
- Harmonic measurement (Total & Individual)
- Auto ranging
- Voltage 415/240V, Frequency 60/50Hz

Advantages:

- To caution on the Extra Energy Consumption
- To identify inefficiency of Machine/Man
- Reduce Panel Space, Wiring, Installation Time

Applications:

- Control Panel
- Distribution System
- Generator sets
- Motor Control:
- Test Bench
- Energy Management
- Process Control & SCADA

Measuring Parameters

- Voltage (L-L)
- Voltage (L-N)
- Current (Phase wise)
- Power factor (Phase wise)
- Frequency
- Power: (Active/Reactive/Apparent)
- Active Energy
- Run Hours
- Total Harmonic Distortion (Voltage & Voltage: Phase wise)

Input Specifications

Electrical Connection :	3Ø4- wire/1Ø 2- wire
Input Voltage Range :	10-500VAC (L-L)/300-10V (L-N)
Input Current Range :	0.015A - 6A AC/Direct 60A optional
Frequency :	45-60 Hz
Resolution	<ul style="list-style-type: none"> ▶ Energy 0.01 kWh ▶ Power factor: 0.001 ▶ Frequency: 0.01 Hz ▶ Voltage: Autoranging ▶ Current: Autoranging ▶ Power: Autoranging
Accuracy	<ul style="list-style-type: none"> ▶ Voltage %0.5± of F.S. ▶ Power factor %0.5± ▶ Frequency %0.1± ▶ Power (Active, Reactive and Apparent): %1 ▶ Energy (Active, Reactive and Apparent): Class 1
Burden	Voltage 0.2 VA max. per input Current 0.2 VA max. per input Aux. supply 3 VA max.z
Ref. No.	W604110

Multifunction Meter (WMM)

Supply Voltage

- Auxiliary Supply 230 VAC, %15- to %10+
- Frequency 60/50 Hz

Display

Display 3 rows of 4 digits
LED display
Digit Height 0.56" (14.3mm)
Display Scrolling Automatic/Manual

Mechanical Specifications

- Mounting Flush Mounting with Side Clamps
- Weight 280 gms
- Enclosure Material ABS Thermoplastic

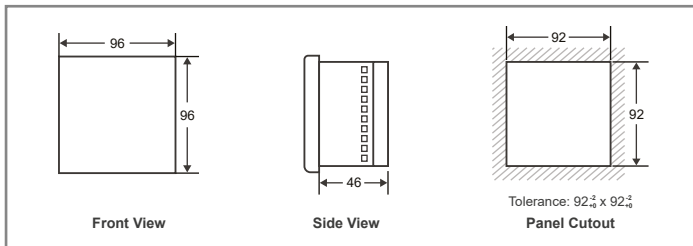
Settable Parameters

- C.T. Primary 5/1A to 10000A (Programmable)
- C.T. Secondary 5/1A (Programmable)
- P.T. Ratio Programmable upto 132 kV
- Display Reset Energy

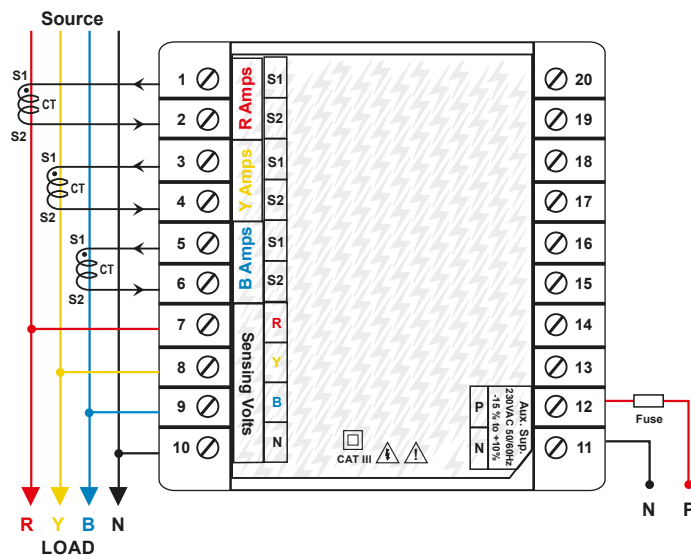
Environmental Specifications

- Temperature Operating : °10- to °55C
Storage : °20- to °75C
- Humidity < %95 RH

Dimension



Connection Diagram



Multifunction Meter (WMN)



96 x 96mm

Display Specifications

Display	4 rows, LCD with Backlight
Digits	4 (Lowest 8 digits for energy display)
Bargraph	For Current Representation

Input Specifications

Electrical Connection	3Ø - 3 wire, 3Ø - 4 wire, 2Ø - 3 wire, 1Ø - 2 wire
Input Voltage Range	11 to 300V AC (L - N) 19 to 519V AC (L - L)
Input Current Range	Nominal 5AAC (Min - 11mA, Max - 6A)
Frequency	45 to 65Hz
Display Scrolling	Automatic / Manual (Programmable)
Power Consumption	8VA max
Display Reset	Programmable (For energy)
Resolution	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (depending upon CT ratio x PT ratio) For Power, Voltage, Current : Auto Resolution For Power Factor : 0.001
Accuracy	Voltage (L - N / L - L) : ±0.5% of F.S. Current : ±0.5% of F.S. Power Factor : ±0.01 Frequency : ±0.1% For L - N Voltage >20V For L - L Voltage >35V Power (Active, Reactive, Apparent) : 1% Energy (Active, Reactive, Apparent) : Class 1
Memory Retention	10 years (For energy)
Measuring Parameters	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Frequency, Power Factor (Individual / Total), Active, Reactive & Apparent Power (Individual / Total), Active, Reactive & Apparent Energy (Individual), Demand (Min / Max Active Power, Min / Max Reactive Power, Max Apparent Power), %THD upto 31 st Level Max Demand Current, Neutral Current, Phase Sequence Detection

Features :

- 3Ø True RMS (Voltage, Current)
- 3Ø Power (Active, Reactive, Apparent), Energy (Active, Reactive, Apparent)
- Programmable CT / PT Primary / Secondary
- CT Polarity Error Detection
- Variable Pulse Width Selection
- Single Phase Network with Phase Selection
- Modbus RTU Communication (RS485)
- Neutral Current Measurement
- THD Upto 31st Level
- Max Demand for Power
- Single Pulse Output / Demand
- Phase Sequence Detection

Certification : 

Output Specifications

Pulse Output	Voltage Range : External 24V DC max Current Capacity : 100mA max Pulse Width : 100ms ±5ms
Communication Interface and Protocol	RS485 and MODBUS RTU
Communication Address	1 to 255
Transmission Mode	Half duplex
Transmission Distance	500 meter maximum
Transmission Speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop Bits	1 or 2
Response Time	100ms (max and independent of baud rate)

Auxiliary Supply Specifications

Supply Voltage	100 to 240V AC, -15% to +12%, 50 / 60 Hz, (±5%)
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Settable Parameters

CT Primary	1 / 5A to 10kA (Programmable for any value)
CT Secondary	1 / 5A (Programmable)
PT Primary	100V to 500kV (Programmable for any value)
PT Secondary	100V to 500V (Programmable for any value)

Environmental Specifications

Temperature	Operating Temperature : -10° to 55°C Storage Temperature : -20° to 75°C
Humidity (non - condensing)	Upto 85% RH

Mechanical Specifications

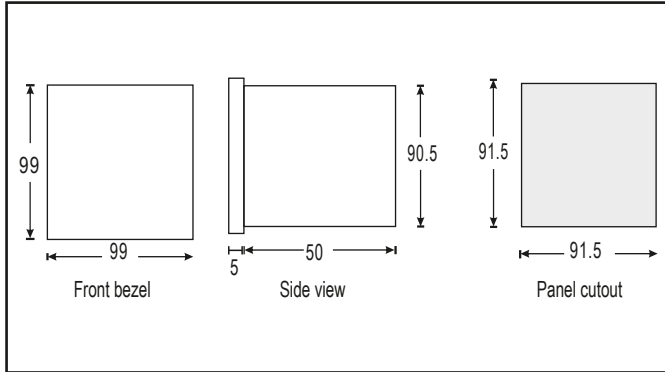
Mounting	Panel
Weight	318gms

Multifunction Meter (WMN)

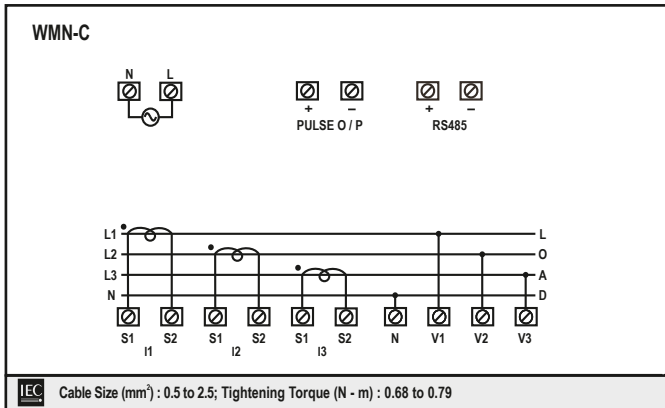
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Switchboard Accessories

Dimensions



Terminal Connection



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326 - 1		
Category		Standards Compliance
ESD Immunity	IEC 61000 - 4 - 2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000 - 4 - 5	+ / - 2kV common mode, (Line to Ground) + / - 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000 - 4 - 3	Level III, 80 to 1000MHz (10V / m) Level II, 1.4GHz to 2GHz (3V / m) Level I, 2GHz to 2.7GHz (1V / m)
Conducted Susceptibility	IEC 61000 - 4 - 6	Level II (3V / m)
Voltage Dips and Interruptions	IEC 61000 - 4 - 11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR - 11	
Radiated Emission	CISPR - 11	
Electrical Fast Transient	IEC 61000 - 4 - 4	Level III (2kV)

Ordering Information

Product Code	Ref. No	Supply Voltage Output			Certification
		100 to 240V AC (-15% to +12%)	Pulse Output (RS485)	Comm. Output (RS485)	
WMN-C-CU-G	W604113	Yes	Yes	Yes	
WMN-C-CE	W604114	Yes	Yes	Yes	

Multifunction Meter (WMMC)



96 x 96mm

Display Specifications

Display	3 rows, 7 segments LED Display
Digits	4

Input Specifications

Electrical Connection	3Ø - 3 wire, 3Ø - 4 wire, 2Ø - 3 wire, 1Ø - 2 wire
Input Voltage Range	11 to 300V AC (L - N) 19 to 519V AC (L - L)
Input Current Range	Nominal 5A AC (Min - 14mA, Max - 6A)
Frequency	45 to 65Hz
Display Scrolling	Automatic / Manual / Default
Power Consumption	8VA max
Display Reset	Programmable (For energy, Auxiliary interrupt, Run hour)
Resolution	For energy : 0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M (depending upon CT ratio x PT ratio) For Power, Voltage, Current : Auto Resolution For Power Factor : 0.001
Accuracy	Voltage (L - N / L - L) : ±0.5% of F.S. Current : ±0.5% of F.S. Power Factor : ±0.01 Frequency : ±0.1% For L - N Voltage >20V For L - L Voltage >35V Power (Active, Reactive, Apparent) : 1% Energy (Active, Reactive, Apparent) : Class 1
Memory Retention	10 years (For energy)
Measuring Parameters	Voltage (L - L / L - N) (Individual / Average), Current (Individual / Average), Max Demand Current (Individual), Frequency, Power Factor (Individual / Total), Active, Reactive & Apparent Power (Individual / Total), Active, Reactive & Apparent Energy (Total), Phase Angle, Demand, Voltage Sequence Diagnostic, CT Polarity Error, Run Hour, Auxiliary Interrupts, Max / Min Demand Power, Import / Export Energy (Active / Reactive), Instantaneous Voltage (L - L / L - N), %THD upto 31 st level

Features :

- 3Ø True RMS (Voltage, Current)
- 3Ø Power (Active, Reactive, Apparent)
- Import / Export Energy (Active, Reactive)
- Energy (Active, Reactive, Apparent)
- Max / Min Demand Power, Max Demand Current
- Programmable CT / PT Primary / Secondary
- Single Pulse Output
- Phase Angle Detection
- Run Hour
- Auxiliary Interrupts
- %THD Upto 31st level
- Instantaneous (Voltage, Current)

Certification : 

Output Specifications

Pulse Output	Voltage Range : External 24V DC max Current Capacity : 100mA max Pulse Width : 100ms ±5ms
Communication Interface and Protocol	RS485 and MODBUS RTU
Communication Address	1 to 255
Transmission Mode	Half duplex
Transmission Distance	500 meter maximum
Transmission Speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop Bits	1 or 2
Response Time	100ms (max and independent of baud rate)

Auxiliary Supply Specifications

Supply Voltage	40 to 270V DC, 85V to 270V AC, 50 / 60Hz
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Settable Parameters

CT Primary	1 / 5A to 10kA (Programmable for any value)
CT Secondary	1 / 5A (Programmable)
PT Primary	100V to 500kV (Programmable for any value)
PT Secondary	100V to 500V (Programmable for any value)

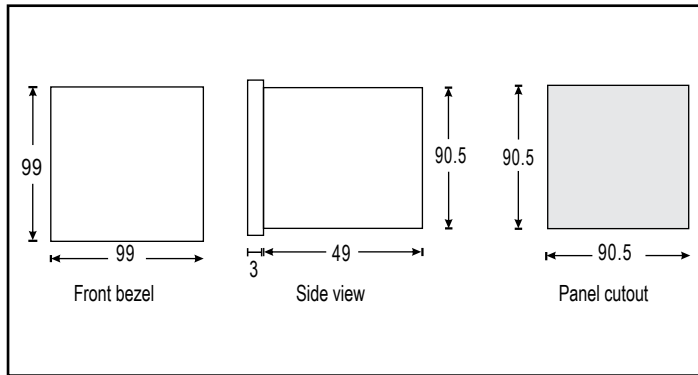
Environmental Specifications

Temperature	Operating : -10° to 55°C Storage : -20° to 75°C
Humidity (non - condensing)	Upto 85% RH

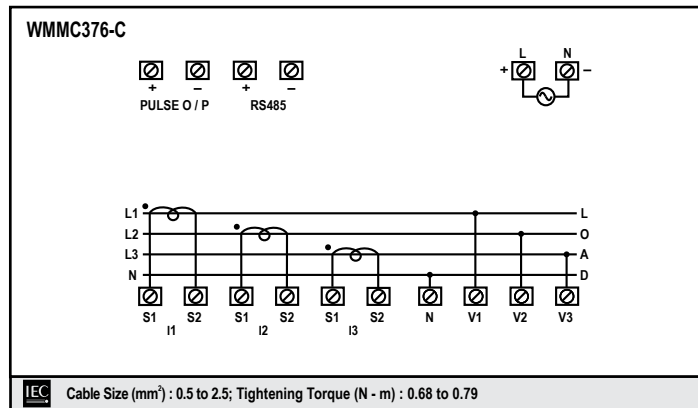
Mechanical Specifications

Mounting	Panel
Weight	230gms

Dimensions



Terminal Connection



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326 - 1		
Category		Standards Compliance
ESD Immunity	IEC 61000 - 4 - 2	Level IV (Air Discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000 - 4 - 5	+ / - 2kV Common Mode, (Line to Ground) + / - 1kV Differential Mode, (Line to Line)
Radiated Susceptibility	IEC 61000 - 4 - 3	Level III, 80 to 1000MHz (10V / m) Level II, 1.4GHz to 2GHz (3V / m) Level I, 2GHz to 2.7GHz (1V / m)
Conducted Susceptibility	IEC 61000 - 4 - 6	Level II (3V / m)
Voltage Dips and Interruptions	IEC 61000 - 4 - 11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR - 11	
Radiated Emission	CISPR - 11	
Electrical Fast Transient	IEC 61000 - 4 - 4	Level III (2kV)

Ordering Information

Product Code	Ref.No.	Supply Voltage	Output	Certification
WMMC376-C	W604115	85V-270V AC 40 to 270V DC	Pluse Output Comm. (RS485)	CE

Multifunction Meter WMFM391



96 X 96 mm

Display specifications

Display	3 rows, 7 segments LED
Digits	3

Input specifications

Electrical connection	3Phase -3Wire,3Phase-4Wire
Input voltage range	11 to 300V AC (phase to neutral) 19 to 519V AC (phase to phase)
Input current range	Nominal 5A AC (Min - 20mA, Max - 6A)
Frequency	45 to 65Hz
Power consumption	<8VA max
Accuracy	Voltage (L - N / L - L): ± 0.5% of F.S. Current : ± 0.5% of F.S. Power factor : ± 1.00 Frequency : ± 0.1% for Measuring Voltage > 11V for L - L voltage > 35V Power (active, reactive, apparent) : 1%
Measuring Parameters	Voltage (L - L / L - N) (individual/average), Current (I1, I2, I3)(individual / average), Frequency, Power factor(individual/average), active power, reactive & apparent power(individual/average), Run hour, RPM

Supply specifications

Auxiliary supply	85V to 276V AC, 50 / 60Hz
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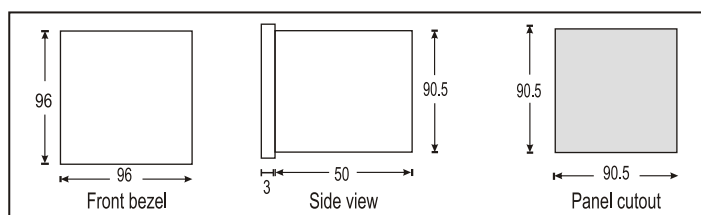
Environmental specifications

Temperature	Operating : -10° to 55°C Storage : - 20° to +75°C
Humidity (non - condensing)	Upto 85% RH

Mechanical specifications

Mounting	Panel mount
Weight	191gms

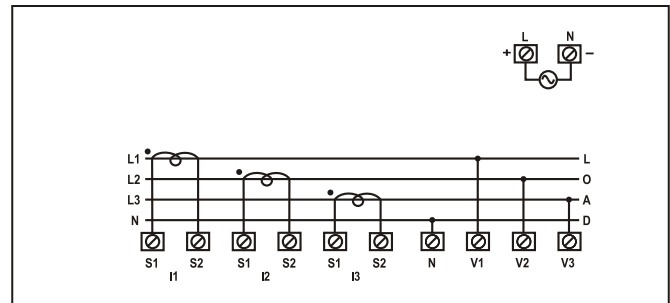
Dimensions (all are in mm)



FEATURES

- 3Ø True RMS Voltage
- 3Ø True RMS Current
- 3Ø Power factor
- 3Ø Power (active, reactiv, apparent)
- Frequency

Terminal connection



Compliance

Applicable EMI / EMC Standards		
Product standard : IEC 61326 - 1		
Category		Standards Compliance
EFT (Electrical Fast Transient)	IEC 61000 - 4 - 4	Level III (2KV)
Surge immunity	IEC 61000 - 4 - 5	± 2kV Common mode, (Line to Ground) ± 1kV Differential mode, (Line to Line)
Voltage dips and interruption	IEC 61000 - 4 - 11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 600Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
ESD immunity	IEC 61000 - 4 - 2	Level IV (Air Discharge : 15kV), (Contact Discharge : 8kV)
Radiated susceptibility	IEC 61000 - 4 - 3	Level III, 80 to 1000MHz (10V / m) Level II, 1.4GHz to 2GHz (3V / m) Level I, 2GHz to 2.7GHz (1V / m)
Radiated emission	CISPR - 11	
Conducted emission	CISPR - 11	

Ordering information

Cat. No.	Ref.No.	Supply Voltage	Certification
WMFM391	W607543	85V to 276V AC	-----

Multifunction Meter (WAFV36)



96 X 96 mm

Features:

- 3 Ø (True rms) Voltage
- 3 Ø (True rms) Current
- Frequency
- Run Hour (Hour - Mins)
- RPM
- Programmable CT Primary, PT Primary & PT Secondary

Certifications:  

Display Specifications

Display	3 rows, Liquid Crystal Display
Digits	3
Digit Height	0.56"
Bargraph	For current representation in % form

Input Specifications

Electrical Connection	3Ø-3 wire & 3Ø-4 wire, 2Ø 3 wire, 1Ø-2 wire
Input Voltage Range	11 to 300V AC, (Phase to Neutral) 19 to 519V AC, (Phase to Phase)
Input Current Range	Nominal 5A (Min-20mA, Max-6A)
Frequency	50 or 60 Hz
Display Scrolling	Automatic / manual
RPM	1350 - 1950 [Pole: 0 (Range: 0 - 98, selectable in steps of 2), Frequency: 45-65 Hz]
Run Hour	0 - 99999.9 hr
Resolution primary setting	Current & Voltage: Depending on CT & PT RPM: 0.1 Run Hour: 0.1hr
Accuracy	Voltage(L-N / L-L): ±0.5% of F.S. ±2digit Average Voltage (L-N / L-L): ±0.5% of F.S. ±2 digit Current: ±1% of F.S. ±2 digit Average current: ±1% of F.S. ±2 digit Frequency: ±0.1Hz ±1digit Run Hour: ±1% RPM: ±0.5%
Measurements	1) 3 Ø Voltage (L-N, L-L, Avg.) 2) 3 Ø Current (I1, I2, I3, Avg.) 3) Frequency 4) RPM 5) Run Hour

Auxiliary Supply Specifications

Auxiliary Supply	230V AC, ±20% (50/60 Hz) 110V AC, ±20% (50/60 Hz)
Burden	0.5 VA max @ 5A per phase

Settable Parameters

CT Primary	5A to 10,000A (Programmable for any value)
CT Secondary	5A fixed (External CT must be connected for current more than 5A)
PT Primary	100V to 500kV(Programmable for any value)
PT Secondary	100 to 500V AC (L-L) (Programmable for any value)

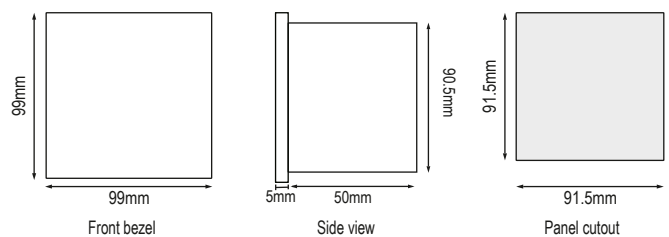
Environmental Specifications

Temperature	Operating: -10 to +55 °C Storage: -20 to +75 °C
Humidity (non-condensing)	Upto 85% RH

Mechanical Specifications

Mounting	Panel mount
Weight	357 gms

Dimensions



Multifunction Meter (WAFV36)

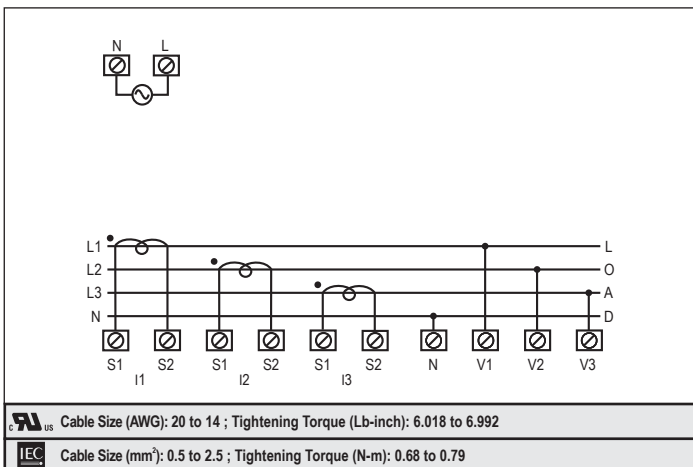
Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Cat. No.	Ref.No.	Supply Voltage		Certification	
		110VAC (±20%)	230VAC (±20%)	CE	UL LISTED
WAFV36A-230V-CE	W607544		■		
WAFV36A-230V-CU	W607545		■	■	■
WAFV36A-110V-CE	W607546	■		■	
WAFV36A-110V-CU	W607547	■		■	■

Terminal Connections



Multifunction Meter (WAFV39)



96 X 96 mm

Features:

- 3 Ø (True rms) Voltage
- 3 Ø (True rms) Current
- Frequency
- Run Hour (Hour - Mins)
- RPM
- Programmable CT / PT Primary / Secondary

Certifications: 

1

Switchboard Accessories

Display Specifications

Display	3 rows, LED display
Digit	3
Digit Height	0.58" (14.7mm)

Input Specifications

Electrical Connection	3Ø-4 W, 3Ø-3W, 2Ø-3W, 1Ø-2W
Input Voltage Range	11 to 300V AC, (Phase to Neutral) 19 to 519V AC, (Phase to Phase)
Input Current Range	Nominal 5A (Min-30mA, Max-6A)
Frequency	50 or 60 Hz
Display Scrolling	Automatic / Manual (Programmable)
RPM	1350 - 1950 [Pole: 0 (Range: 0 - 98, selectable in steps of 2), Frequency: 45-65 Hz]
Run Hour	0 - 99999.9 hr
Resolution primary setting	Current & Voltage: Depending on CT & PT RPM: 0.1 Run Hour: 0.1hr
Accuracy	Voltage(L-N / L-L): ±0.5% of F.S. ±2digit Average Voltage (L-N / L-L): ±0.5% of F.S. ±2 digit Current: ±1% of F.S. ±2 digit Average current: ±1% of F.S. ±2 digit Frequency: ±0.1Hz ±1digit Run Hour: ±1% RPM: ±0.5%
Measurements	1) 3 Ø Voltage (L-N, L-L, Avg.) 2) 3 Ø Current (I1, I2, I3, Avg.) 3) Frequency 4) RPM 5) Run Hour

Supply Specifications

Auxiliary Supply	230V AC, ±20% (50/60 Hz)
Burden	0.5 VA @ 5A per phase

Settable Parameters

CT Primary	5A to 10,000A (Programmable for any value)
CT Secondary	1A / 5A (Programmable)
PT Primary	100V to 500kV (Programmable for any value)
PT Secondary	100 to 500V AC (L-L) (Programmable for any value)

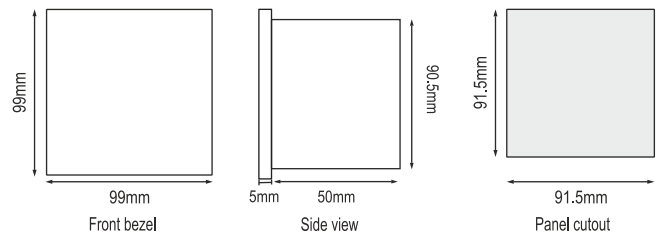
Environmental Specifications

Temperature	Operating: -10°C to +55°C Storage: -20°C to +75°C
Humidity (non-condensing)	Upto 85% RH

Mechanical Specifications

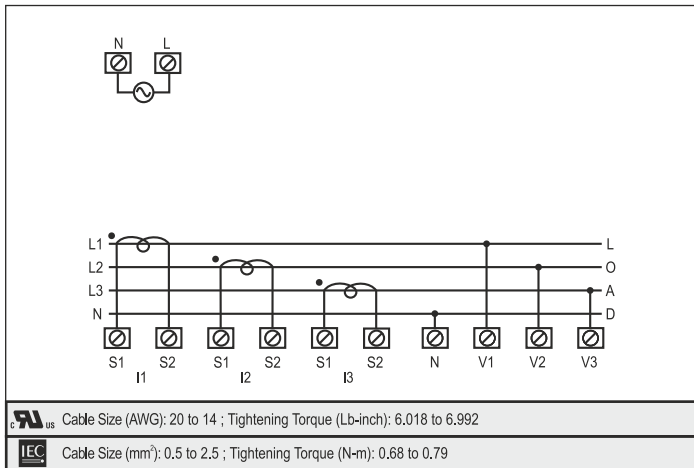
Mounting	Panel mount
Weight	270 gms

Dimensions



Multifunction Meter (WAFV39)

Terminal Connections



Ordering Information

Cat. No.	Ref.No.	Supply Voltage
		230V AC
WAFV39A-230V AC-CE	W607548	■

Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

DIGITAL VOLTMETER (WPIS88)



Features:

- ▶ 1 Line 4 Digit ultra bright LED display
- ▶ Site Programmable PT ratio (Primary and Secondary)
- ▶ True RMS measurement
- ▶ Password protection
- ▶ Optional features
 - a) RS485 Computer Interface
 - b) 60A direct current (External CT module available)
- ▶ Harmonic measurement (Total & Individual) for voltage
- ▶ Auto ranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ Cost-effective
- ▶ Accurate reading
- ▶ Long life compared to Analog, as no moving parts
- ▶ Reduce panel space, wiring and installation time
- ▶ Precise onsite display

Applications:

- ▶ Industrial application and Automation
- ▶ Control Panel
- ▶ Equipment Monitoring
- ▶ Distribution Systems
- ▶ Test bench

Measuring Parameters

- ▶ Voltage (Phase), (Phase) average, (L-N), (L-N) average
- ▶ Total and Average Harmonic Distortion (Phase wise): Voltage
- ▶ System frequency

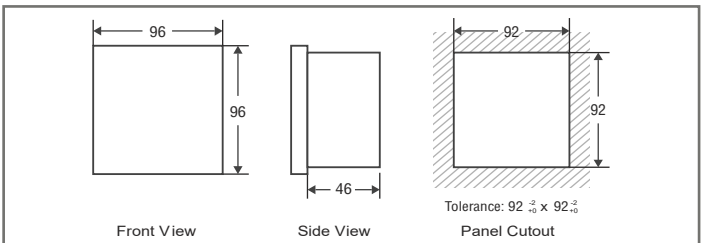
Mechanical Specifications

Mounting: Flush Mounting with Side Clamps
 Weight: 280 g
 Enclosure Material: ABS Thermoplastic

Supply Voltage

Auxiliary Supply: 90-270V AC/DC (±15%)
 Frequency: 50/60 Hz

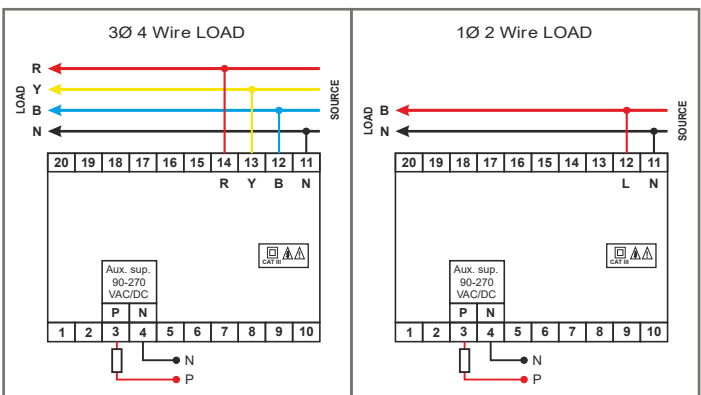
Dimension



Display

Display: 1 row of 4 digits, 7 segment LED display
 Digit Height: 0.56" (14.3mm)
 Display Scrolling: Automatic/Manual

Connection Diagram



Parameters (Resettable)

PT Ratio: Up to 132kV

Input Specifications

Electrical Connection: 3Ø-4 wire
 Input Voltage Range: 0-500V AC (L-L)
 Input Current Range: 0.015A-6A AC
 Frequency: 45/65 Hz
 Resolution: Autoranging, Hz 0.01
 Accuracy:

- ▶ Voltage ±0.5% of F.S.
- ▶ Frequency ±0.1% of F.S.

 Burden: Voltage: 0.2 VA max per input
 Aux. Supply: 3 VA max.

Environmental Specifications

Temperature: Operating : -10° to 55°C
 Storage : -20° to 75°C
 Humidity: < 95% RH

Ordering Information

Cat. No.	Ref.No.	Description	Comm. RS485
WPIS88	W607549	3Ø Voltmeter	

DIGITAL AMMETER (WPIS89)



Features:

- ▶ 1 Line 4 Digit ultra bright LED display
- ▶ Site Programmable CT ratio (Primary and Secondary)
- ▶ True RMS measurement
- ▶ Password protection
- ▶ Optional features
 - a) RS 485 Computer Interface
 - b) 60A direct current (External CT module available)
- ▶ Harmonic measurement (Total & Individual)
- ▶ Auto ranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ Cost-effective
- ▶ Accurate reading
- ▶ Long life compared to Analog, as no moving parts
- ▶ Reduce panel space, wiring and installation time
- ▶ Precise onsite display

Applications:

- ▶ Industrial application and Automation
- ▶ Control Panel
- ▶ Equipment Monitoring
- ▶ Distribution Systems
- ▶ Test bench

Measuring Parameters

- ▶ Current (line), (line) average
- ▶ Total and Average Harmonic Distortion (Phase wise): Current

Supply Voltage

Auxiliary Supply 90-270V AC/DC (±15%)
 Frequency 50/60 Hz

Display

Display 4 digits 7 segment LED display
 Digit Height 0.56" (14.3mm)
 Display Scrolling Automatic/Manual

Settable Parameters

C.T. Primary 1/5A to 10000A (Programmable)
 C.T. Secondary 1/5A (Programmable)

Input Specifications

Electrical Connection: 3Ø-4 wire
 Input Voltage Range 0-500V AC (L-L)
 Input Current Range 0.015A-6A AC
 Frequency 45/65 Hz
 Resolution Autoranging
 Accuracy Current: ±0.5% of full range
 Burden Voltage: 3 VA max on Aux Supply
 Current: 0.2 VA max. per input
 Aux. Supply: 3 VA max.

Environmental Specifications

Temperature Operating : -10° to 55°C
 Storage : -20° to 75°C
 Humidity < 95% RH

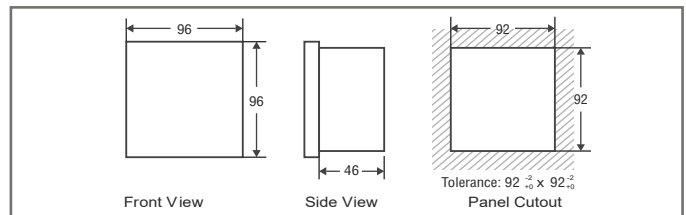
Mechanical Specifications

Mounting Flush Mounting with Side Clamps
 Weight 280 g
 Enclosure Material ABS Thermoplastic

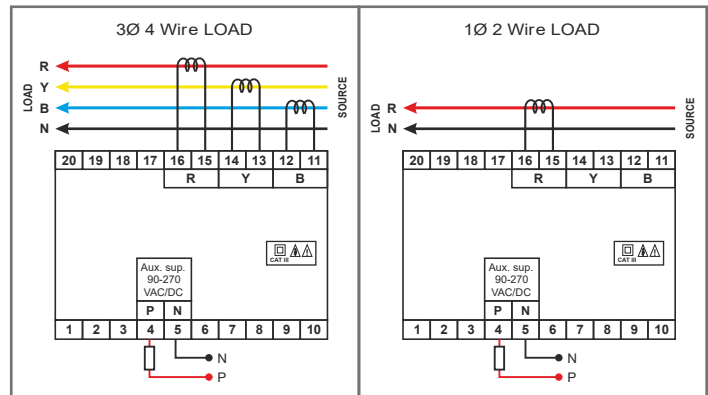
Preference of Accessories

The above module to be supplied with 1 meter long Leads N

Dimension



Connection Diagram



Ordering Information

Cat. No.	Ref.No.	Description	Comm. RS485
WPIS89	W607551	0-5A, CT programmable	
WPIS89-60A-3P-N	W607553	0-60A, external CT for 1 phase(N)	✓

Accessories

Description	Code	Photo
for external CT of 60A programmed for three phase	60A-3P	

DIGITAL Voltmeter- Single phase (WPIS91E)



Features:

- ▶ State of Art microcontroller based design
- ▶ 1 Line 4 Digit ultra bright LED display
- ▶ Site Programmable PT ratio
- ▶ True RMS measurement
- ▶ Total harmonic measurement for voltage
- ▶ Auto ranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ Cost-effective
- ▶ Accurate reading
- ▶ Long life compared to Analog, as no moving parts
- ▶ Reduce panel space, wiring and installation time
- ▶ Precise onsite display

Applications:

- ▶ Industrial application and Automation
- ▶ Control Panel
- ▶ Equipment Monitoring
- ▶ Distribution Systems
- ▶ Test bench

Measuring Parameters

- ▶ Voltage (L-L)
- ▶ Voltage (L-N)
- ▶ Total Harmonic Distortion (Phase wise): Voltage
- ▶ System Frequency

Supply Voltage

Auxiliary Supply 90-270V AC/DC (±15%)
 Frequency 50/60 Hz

Display

Display 4 digits 7 segment LED display of 1 row
 Digit Height 0.56" (14.3mm)
 Display Scrolling Automatic/Manual

Settable Parameters

P.T. Ratio Upto 132 kV

Input Specifications

Electrical Connection 1Ø-2 wire
 Input Voltage Range 0-500V AC (L-L)
 Frequency 45-65 Hz
 Resolution Voltage: Autoranging
 Frequency: 0.01
 Accuracy ▶ Voltage ±0.5% of F.S.
 ▶ Frequency ±0.1% of F.S.
 Burden Voltage: 0.2 VA max per input
 Aux. Supply: 3 VA max.

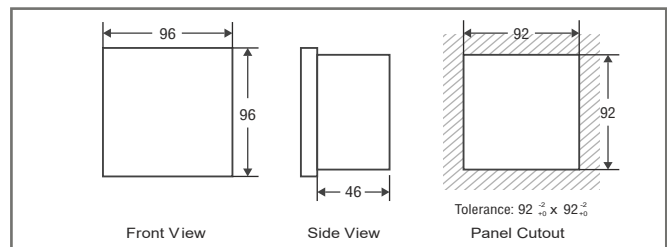
Environmental Specifications

Temperature Operating : -10° to 55°C
 Storage : -20° to 75°C
 Humidity < 95% RH

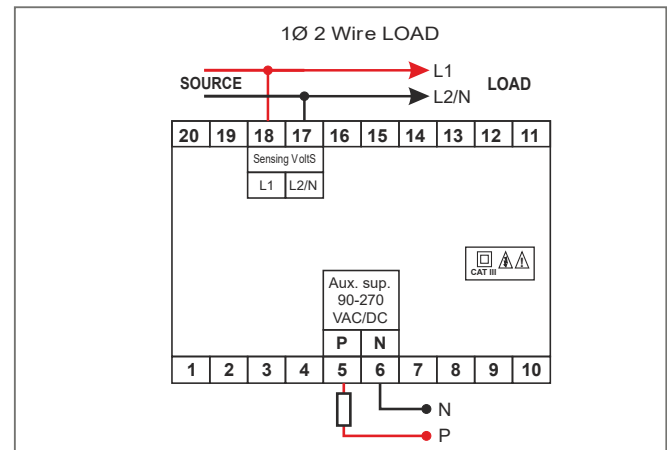
Mechanical Specifications

Mounting Flush Mounting with Side Clamps
 Weight 120 g
 Enclosure Material ABS Thermoplastic

Dimension



Connection Diagram



Ordering Information

Cat. No.	Ref.No.	Description
WPIS91E	W607554	1Ø Voltmeter

DIGITAL AMMETER- SINGLE PHASE (WPIS92)



Features:

- ▶ 1 Line 4 Digit ultra bright LED display
- ▶ Site Programmable CT ratio
- ▶ True RMS measurement
- ▶ Total harmonic measurement (Current)
- ▶ Auto ranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ Cost-effective
- ▶ Accurate reading
- ▶ Long life compared to Analog, as no moving parts
- ▶ Reduce panel space, wiring and installation time
- ▶ Precise onsite display

Applications:

- ▶ Industrial application and Automation
- ▶ Control Panel
- ▶ Equipment Monitoring
- ▶ Distribution Systems
- ▶ Test bench

Measuring Parameters

- ▶ Current (line)
- ▶ Total Harmonic Distortion (Phase wise): Current

Supply Voltage

Auxiliary Supply	90-270V AC/DC (±15%)
Frequency	50/60 Hz

Display

Display	4 digits 7 segment LED display
Digit Height	0.56" (14.3mm)
Display Scrolling	Automatic/Manual

Settable Parameters

C.T. Primary	1/5A to 10000A (Programmable)
C.T. Secondary	1/5A (Programmable)

Input Specifications

Electrical Connection	1Ø-2 wire
Input Current Range	0.015 A-6A AC/Direct 60A optional
Frequency	45/65 Hz
Resolution	Auto ranging
Accuracy	▶ Current ±0.5% of F.S. ▶ Frequency ±0.1% of F.S.
Burden	Current: 0.2 VA max per input Aux. Supply: 3 VA max.

Environmental Specifications

Temperature	Operating : -10° to 55°C Storage : -20° to 75°C
Humidity	< 95% RH

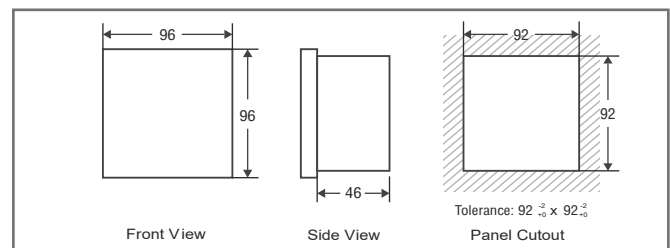
Mechanical Specifications

Mounting	Flush Mounting with Side Clamps
Weight	280 g
Enclosure Material	ABS Thermoplastic

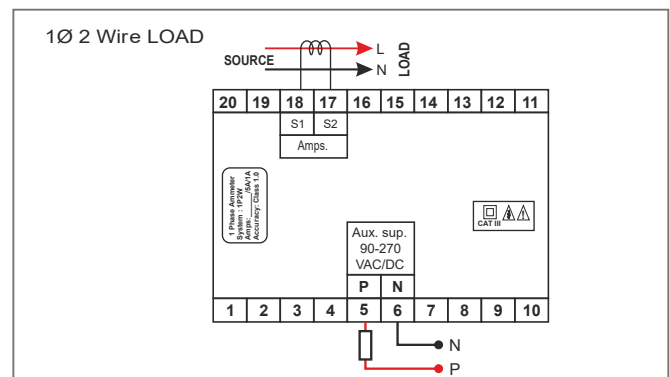
Preference of Accessories

The above module to be supplied with 1 meter long Leads	N
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Dimension



Connection Diagram



Ordering Information

Cat. No.	Ref.No.	Description	RS485
WPIS92	W607555	0-5A, CT programmable	
WPIS92-C	W607556	0-5A, CT programmable	✓
WPIS92-60A-1P-N	W607557	0-60A, external CT for 1 phase(N)	
WPIS92P-AC	W607558	0-5A, CT programmable	

Accessories

Description	Code	Photo
for external CT of 60A programmed for single phase	60A-1P	

Multifunction Meter (WAFV60)



Features:

- ▶ 7 segment bright red LED display
- ▶ Site Programmable CT and PT ratio
- ▶ True RMS measurement
- ▶ Password protection
- ▶ Optional features
 - a) RS485 computer interface
 - b) 60A direct current (External CT module available)
- ▶ Harmonic measurement (Total & Individual)
- ▶ Autoranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ To caution on the Extra Energy Consumption
- ▶ To identify inefficiency of Machine/Man
- ▶ Reduce Panel Space, Wiring, Installation Time

Applications:

- ▶ Control Panel
- ▶ Distribution System
- ▶ Generator sets
- ▶ Motor Control
- ▶ Test Bench
- ▶ Energy Management
- ▶ Process Control & SCADA

Measuring Parameters

- ▶ Voltage (L-L)
- ▶ Voltage (L-N)
- ▶ Current (Phase wise)
- ▶ Power factor (Phase wise)
- ▶ Frequency
- ▶ Power: (Active/Reactive/Apparent)
- ▶ Active Energy
- ▶ Run Hours
- ▶ Total Harmonic Distortion (Voltage & Voltage: Phase wise)

Supply Voltage

Auxiliary Supply	90-270V AC/DC (±15%)
Frequency	50/60 Hz

Display

Display	3 rows of 4 digits LED display
Digit Height	0.56" (14.3mm)
Display Scrolling	Automatic/Manual

Settable Parameters

C.T. Primary	1/5A to 10000A (Programmable)
C.T. Secondary	1/5A (Programmable)
P.T. Ratio	Programmable upto 132 kV
Display Reset	Energy

Output Specification

Communication	RS485 (Optional)
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Input Specifications

Electrical Connection	3Ø-4 wire/1Ø-2 wire
Input Voltage Range	0-500VAC (L-L)/0-300V (L-N)
Input Current Range	0.015A - 6A AC/Direct 60A optional
Frequency	45-65 Hz
Resolution	<ul style="list-style-type: none"> ▶ Energy 0.01 kWh ▶ Power factor: 0.001 ▶ Frequency: 0.01 Hz ▶ Voltage: Autoranging ▶ Current: Autoranging ▶ Power: Autoranging
Accuracy	<ul style="list-style-type: none"> ▶ Voltage ±0.5% of F.S. ▶ Power factor ±0.5% ▶ Frequency ±0.1% ▶ Power(Active, Reactive and Apparent): 1% ▶ Energy (Active, Reactive and Apparent): Class 1
Burden	Voltage: 0.2 VA max. per input Current: 0.2 VA max. per input Aux. supply: 3 VA max.

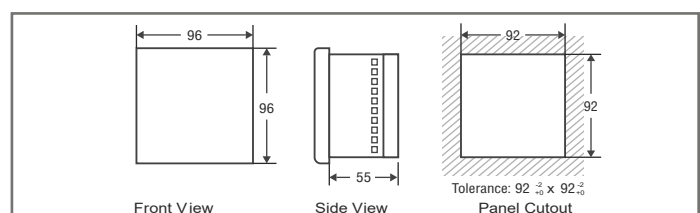
Environmental Specifications

Temperature	Operating : -10° to 55°C Storage : -20° to 75°C
Humidity	< 95% RH

Mechanical Specifications

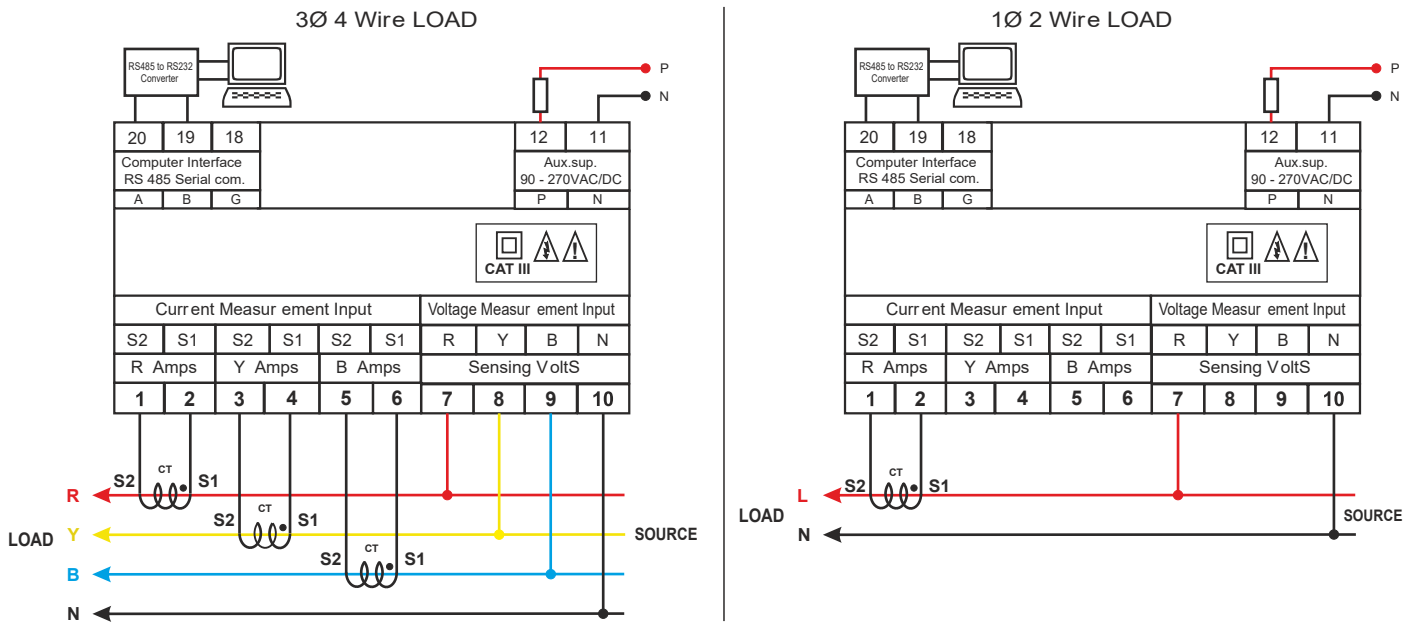
Mounting	Flush Mounting with Side Clamps
Weight	280 gms
Enclosure Material	ABS Thermoplastic

Dimension



Multifunction Meter (WAFV60)

Connection Diagram



1

Switchboard Accessories

Ordering Information

Cat. No.	Ref.No.	Description	RS485
WAFV60	W607559	0-5A, CT programmable	
WAFV60-60A-1P-M	W607560	0-60A, external CT for 1 phase (M)	
WAFV60-60A-1P-N	W607561	0-60A, external CT for 1 phase (N)	
WAFV60-60A-1P-NX.X	W607562	0-60 A, external CT for 1 phase (NX.X)	
WAFV60-60A-3P-M	W607563	0-60A, external CT for 3 phase (M)	
WAFV60-60A-3P-N	W607564	0-60A, external CT for 3 phase (N)	
WAFV60-60A-3P-NX.X	W607565	0-60A, external CT for 3 phase (NX.X)	
WAFV60-C	W607566	0-5A, CT programmable	✓
WAFV60-60A-1P-M-C	W607567	0-60A, external CT for 1 phase (M)	✓
WAFV60-60A-1P-N-C	W607568	0-60A, external CT for 1 phase (N)	✓
WAFV60-60A-1P-NX.X-C	W607569	0-60A, external CT for 1 phase (NX.X)	✓
WAFV60-60A-3P-M-C	W607570	0-60A, external CT for 3 phase (M)	✓
WAFV60-60A-3P-N-C	W607571	0-60A, external CT for 3 phase (N)	✓
WAFV60-60A-3P-NX.X-C	W607572	0-60A, external CT for 3 phase (NX.X)	✓

Accessories		
Description	Code	Photo
for external CT of 60A programmed for single phase	60A-1P	
for external CT of 60A programmed for three phase	60A-3P	

Preference of Accessories	
The above module to be mounted behind the meter	M
The above module to be supplied with 1 meter long Leads	N
The above module to be supplied with long leads (any length on request) *Where X.X is length to be specified for eg. 2.5	NX.X

MULTIFUNCTION METER

WTMRJ4M

1

Switchboard Accessories



DIN : 90 x 70mm

Features:

- Monitors Electrical Parameters for 4 loads(3ϕ) ,12 loads(1ϕ)
- RS485 Communication MODBUS RTU Protocol
- Self Powered
- Power(Active, Reactive, Apparent)
- Energy(Active, Reactive, Apparent)

Certifications: 

Display Specifications

Display	LCD with backlight
Digits	1 Rows of 4 digits, Row 2,3 of 7digits
LED Indications	Integration of energy

Input Specifications

Electrical Connection	3Ø 4W , 1Ø 2W
Input Voltage Range	60V to 300V AC(Phase to Neutral) 104 to 520V AC(Phase to Phase)
Frequency	45 to 65 Hz
Display Scrolling	Automatic / Manual
Power Consumption	8VA Max
Display Reset	Programmable (For energy)
Resolution	For Energy: 0.01k,0.1k,1k,0.01M,0.1M,1M (depending upon CT ratio x PT ratio), For Power, Voltage: Auto resolution, For Power Factor:0.01
Accuracy	Voltage(L-L/L-N), Current : ±0.05% of F.S Power factor : ± 0.01 Frequency : ±0.1% Power (Active, Reactive, Apparent) : 1% Energy (Active, Reactive, Apparent) : Class1
Memory Retention	10 Years (For energy)
Measuring parameters	Voltage (L-L / L-N) (Individual / Average) of 4 channels, Current (Individual / Average) of 4 channels, Power (Active, Reactive & Apparent) (Individual) of 4 channels, Power factor & Frequency of 4 channels

Output Specifications

Communication, Interface and Protocol	RS485 and MODBUS RTU
Communication Address	1 to 255
Transmission Mode	Half duplex
Transmission Distance	500 Meter Maximum
Transmission Speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop bits	1 or 2
Response Time	100 ms (max and independent of baud rate)

Auxiliary Supply Specifications

Supply Voltage	60 to 300V AC,50-60Hz Self-Supplied (V1,N)
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Settable Parameters

CT Primary	5A to 10kA (Programmable for any value)
CT Secondary	330mV
PT Primary	100 to 10kV (Programmable for any value)
PT Secondary	100V to 500V AC (L-L) (Programmable for any value)

Environmental Specifications

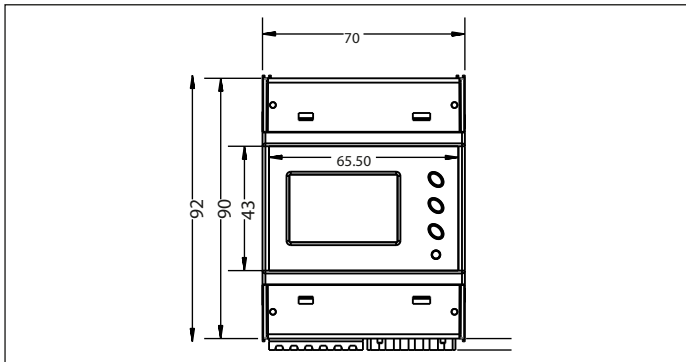
Temperature	Operating Temperature: -10°C to +55°C Storage Temperature : -20°C to +75°C
Humidity	Upto 85% RH

MULTIFUNCTION METER WTMRJ4M

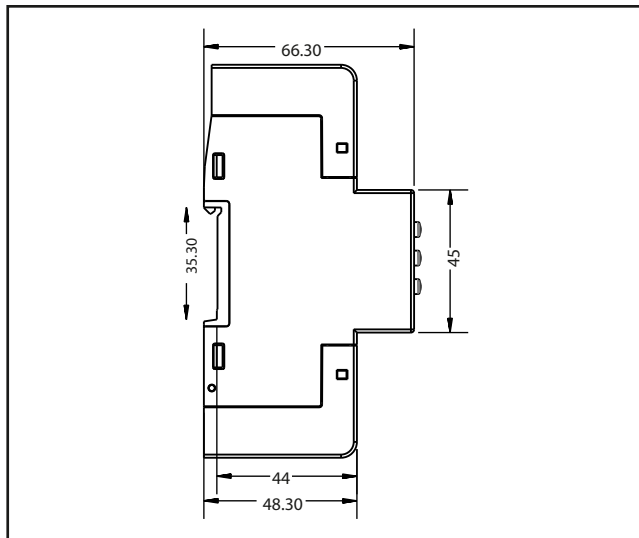
Mechanical Specifications

Mounting	Din Rail Mount
Weight	200gms

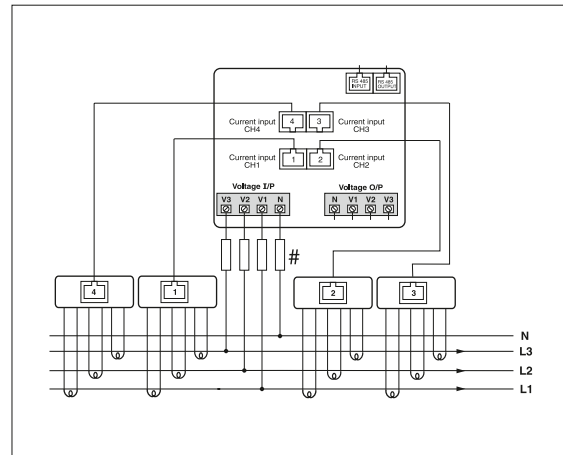
Dimensions



Side View



Terminal Connections



Ordering Information

Product Code.	Supply Voltage	Output	Ref.No.	Certification
WTMRJ4M	Self Supplied (V1,N) 60 to 300V AC	Pulse Output	Comm (RS485)	W605451 CC

MULTIFUNCTION METER


WTMRJ4M2



90 X 70mm

Features:

- ! 3Ø True RMS (Voltage, Current)
- ! Plug-n-Wire quick connect current input
- ! Energy (Active, Reactive)
- ! 3Ø Power (Active, Reactive, Apparent)
- ! Programmable CT Primary, PT Primary/Secondary
- ! Modbus RTU Communication (RS485)
- ! Single Pulse Output
- ! Max Demand power
- ! Self Powered

Certifications:  RoHS

Display Specification

Display	3rows, LCD with backlight
Digits	2 Rows Of 4 Digits, 1 Row Of 7 Digits
LED Indication	Integration of Energy

Input Specifications

Electrical Connection	3Ø-4 wire, 1Ø-2 wire
Input Voltage Range	60 to 300V AC, (Phase to Neutral) 104 to 520V AC, (Phase to Phase)
Frequency	45Hz - 65Hz
Power Consumption	8VA Max
Display Reset	Programmable (For energy)
Diaplay Scrolling	Automatic / Manual
Resolution	For energy: 0.01k, 0.1k, 1k, 0.01M, 0.1M (depending upon CT ratio x PT ratio) For Power, Voltage, Current: Auto resolution
Accuracy	For Power factor: 0.01 Voltage(L-N / L-L), Current: $\pm 0.5\%$ of F.S. Power factor: ± 0.01 Frequency: ± 0.1 For L-N Voltage >20V For L-L Voltage >35V Power (Active, Reactive, Apparent): ± 1 Energy (Active, Reactive): ± 1 of Full Range.
Memory Retention	10 Years (For energy)
Measuring Parameters	Voltage (L-L / L-N) (Individual / Average), Current (I1, I2, I3) (Individual / Average), Frequency, Power Factor (Individual/Average), Active, Reactive & Apparent power (Individual / Total), Active and Reactive Energy, Demand (Max Active Power, Max Apparent Power)

Output Specifications

Pulse Output	Pulse output: Voltage Range: 24V DC max. Current Capacity: 100mA max. Pulse Duration: Selectable between 0.1 to 2.0 sec. Pulse Weight: Selectable between 0.01 to 9.99 kWh
Communication Interface and Protocol	MODBUS RTU (Rs485)
Communication address	Rs485
Transmission mode	1 to 255
Transmission distance	Half duplex
Transmission speed	500 Meter maximum
Parity	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Stop bits	None, Odd, Even
Resposn time	1 or 2
	100 ms (max and independent of baud rate)

Auxiliary Supply Specifications

Self Supplied (V1, N)	60 to 300V AC, 50/60Hz ($\pm 5\%$)
Power Consumption	8VA Max

Settable Parameters

CT Primary	5A to 10kA (programmable for any value)
CT Secondary	330mV
PT Primary	100V to 10kV (Programmable for any value)
PT Secondary	100V to 500V AC (L-L) (Programmable for any value)

MULTIFUNCTION METER WTMRJ4M2

Environmental Specifications

Temperature	Operating Temperature: -10 to +55° C Storage Temperature : -20 to +75° C
Humidity	Upto 85% RH

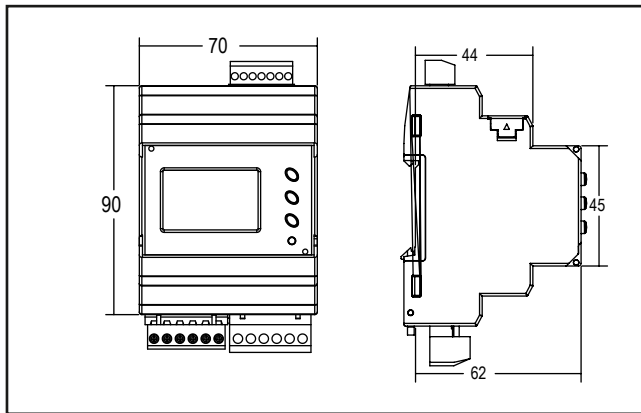
Mechanical Specifications

Mounting	Din Rail mount
Weight	191 gms

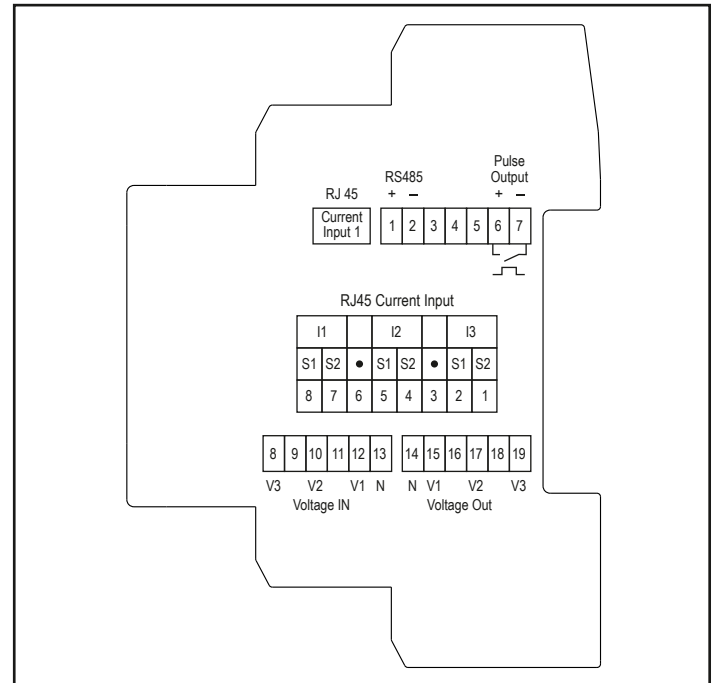
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Switchboard Accessories

Dimensions (All dimensions are in mm)



Terminal Connections



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category	Standards Compliance	
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Output	Ref.No.	Certification
WTMRJ4M2	Pulse Output Commn (RS485)	W605452	CE RoHS

MULTIFUNCTION METER

WTMRJ4M-SL



90 X 70mm

Display Specification


Display	3 row, LCD with backlight
Digits	Row 1 of 4 digits and Row 2, 3 of 7 digits.
LED Indication	Integration of Energy

Input Specifications

Electrical Connection	3Ø-4 wire, 1Ø-2 wire
Input Voltage Range	60 to 300V AC, (Phase to Neutral) 104 to 520V AC, (Phase to Phase)
Frequency	45Hz - 65Hz
Display Scrolling	Auto / Manual
Display Reset	Programmable (for energy)
Power Consumption	8Va Max
Resolution	For energy: 0.01k, 0.1k, 1k, 0.01M, 0.1M (depending upon CT ratio x PT ratio) For Power, Voltage, Current: Auto resolution For Power factor: 0.01
Accuracy	Voltage(L-N / L-L), Current: $\pm 0.5\%$ of FS. Power factor: ± 0.01 Frequency: $\pm 0.1\%$ For L-N Voltage >20V For L-L Voltage >35V Power (Active, Reactive, Apparent): ± 1 . Energy (Active , Reactive): ± 1 of Full Range.
Memory Retention	10 Years (for energy)
Measuring Parameters	Voltage (L-L / L-N) (Individual / Average), Current (I1, I2, I3) (Individual), Frequency Power Factor (Individual / Average), Active, Reactive & Apparent power (Individual / Total), Active and Reactive Energy, Total Active and Reactive Energy (Current input-1 plus Current input-2), Demand (Max Active Power, Max Apparent Power)

Features:

- * 3Ø True RMS (Voltage, Current)
- * 3Ø Power (Active, Reactive, Apparent)
- * Energy (Active, Reactive)
- * Plug-n-Wire Split load current input
- * Programmable CT Primary, PT Primary/Secondary
- * Modbus RTU Communication (RS485)
- * 2 Pulse Outputs
- * Max Demand of power
- * Self Powered

Certifications:  RoHS

Output Specifications

Pulse Output	Pulse output: 2 Opto-isolated Voltage Range: 24V DC max. Current Capacity: 100mA max. Pulse Duration: Selectable between 0.1 to 2.0 sec. Pulse Weight: Selectable between 0.01 to 9.99 kWh
Communication Interface and Protocol	MODBUS RTU (Rs485) Rs485 and MODBUS RTU and Protocol
Communication address	1 to 255
Transmission mode	Half duplex
Transmission distance	500 Meter maximum
Transmission speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop bits	1 or 2
Response time	100 ms (max and independent of baud rate)

Auxiliary Supply Specifications

Self Supplied(V1, N)	60 to 300V AC, 50/60Hz ($\pm 5\%$)
Power Consumption	8VA Max

Settable Parameters

CT Primary-1	5A to 10kA (programmable for any value)
CT Primary-2	5A to 10kA (programmable for any value)
CT Secondary	330mV
PT Primary	100V to 10kV (programmable for any value)
PT Secondary	100V to 500V AC (L-L) (programmable for any value)

Environmental Specifications

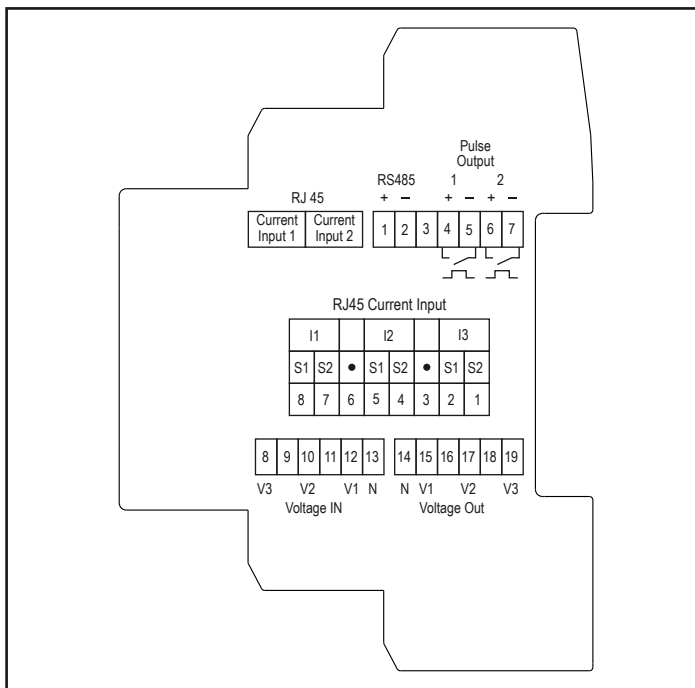
Temperature	Operating Temperature: -10 to +55° C Storage Temperature : -20 to +75° C
Humidity	Upto 85% RH

MULTIFUNCTION METER WTMRJ4M-SL

Mechanical Specifications

Mounting	Din Rail mount
Weight	200 gms

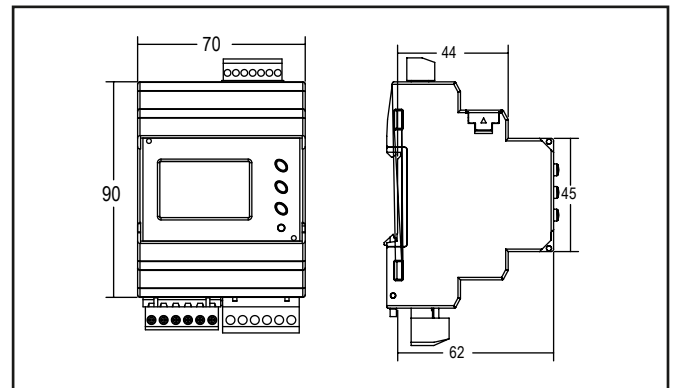
Terminal Connections



Ordering Information

Product Code	Supply	Output	Ref.No.	Certification
WTMRJ4M-SL	Self Supplied (V1,N) 60 to 300V AC	Pulse Output Commn (RS485)	W605453	CE RoHS

Dimensions (All dimensions are in mm)



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

1
Switchboard Accessories

MULTIFUNCTION METER

WTMRJ385





Size: 96 x 96mm

1

Switchboard Accessories

Features:

- * True RMS Measurement Of All Basic 3Ø Electrical Parameters
- * Energy (Active, Reactive, Apparent)
- * Plug-n-Wire quick connect current input
- * Programmable CT Primary, PT Primary/Secondary
- * RS485 Modbus Communication
- * Pulse Output
- * Max / Min Demand of power
- * % THD upto 31st level for Voltage and Current

Certifications:   RoHS

Display Specification

Type of Display	Liquid Crystal Display with backlight
Digits	4 row, of 4 digits per line to show electrical parameters, 1 row of 8 digits for energy display
Bargraph	Representation of current

Input Specifications

Electrical Connection	3Ø-4 wire, 1Ø-2 wire
Input Voltage Range	100 to 240V AC, (Phase to Neutral) 173 to 415V AC, (Phase to Phase)
Frequency	45Hz - 65Hz
Display Scrolling	Automatic / manual
Power Consumption	8VA Max
Display Reset	Programmable (For energy)
Resolution	For Power, Voltage, Current: Auto resolution For Power factor: 0.001
Accuracy	Voltage (L-N / L-L), Current: ±0.5% of F.S Power factor: ±0.01 Frequency: ±0.1% (For V>20V L-N, V>35V L-L) Power (kW, kVA, kVAR): 1% Energy (Active, Reactive, Apparent): 1%
Memory Retention	10 Years (For energy)
Measuring Parameters	Voltage (L-L / L-N) (Individual / Average) Current (I1, I2, I3) (Individual / Average) Frequency, Power Factor (Individual / Average) Active, Reactive & Apparent power (Individual / Total), Active, Reactive & Apparent Energy (Phase wise (Import / Export) & Total (Import/ Export)), Demand (Min / Max Active Power, Min / Max Reactive Power, Max Apparent Power) THD individual for voltage & current upto 31st level

Output Specifications

Pulse Output	Pulse Output: Voltage Range: External 24V DC max. Current Capacity: 100mA max Pulse width :Selectable between 0.1 to 2 sec
Communication	RS485 MODBUS Communication
Interface and Protocol	Rs485 Communication MODBUS RTU Protocol
Communication address	1 to 255
Transmission mode	Half duplex
Transmission distance	500 Meter maximum
Transmission speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop bits	1 or 2
Response time	100 ms (max and independent of baud rate)

Auxiliary Supply Specifications

Self Supplied (V1,N)	60 to 300VAC, 50/60Hz
Power Consumption	8VA Max

Settable Parameters

CT Primary	5A to 10,000A (Programmable for any value)
CT Secondary	330mV
PT Primary	100V to 500kV (Programmable for any value)
PT Secondary	173 to 415V AC (Programmable for any value)

Environmental Specifications

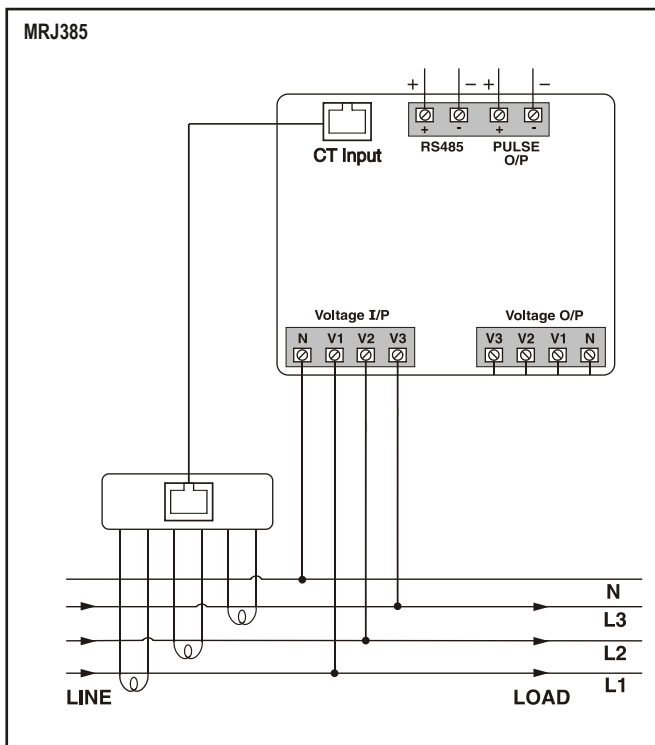
Temperature	Operating Temperature: 0 to +50° C Storage Temperature: -20 to +75° C
Humidity	Upto 85% RH

MULTIFUNCTION METER WTMRJ385

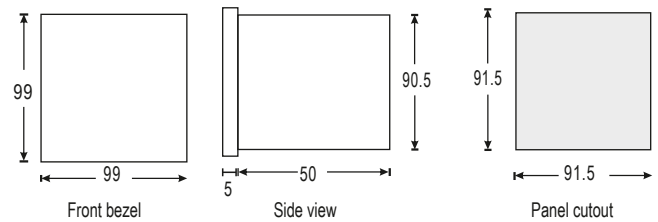
Mechanical Specifications

Mounting	Panel mount
Weight	230 gms

Terminal Connections



Dimensions



Compliance :

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Output		Ref.No.	Certification
	Pulse Output	Commn (RS485)		
WTMRJ385-G-PNW	■	■	W605454	■

Multifunction Meter WTMRJ384

1

Switchboard Accessories



70X90mm

FEATURES

- 3 Ø True RMS (Voltage, Current)
- 3 Ø Power (Active, Reactive, Apparent)
- Import / Export Active, Reactive energy , Apparent Energy.
- Programmable CT/PT Primary / Secondary
- Modbus RTU Communication (RS485)
- Max / Min Demand Power

Marking



Display Specification

Display	3 rows, LCD with backlight
Digits	Row 1 of 4 digits Row 2 and 3 of 7 digits
LED Indication	Integration of Energy (1000 Pulses /kwh)

Input Specifications

Electrical Connection	3Ø - 3/4wire, 2Ø - 3 wire, 1Ø - 2 wire
Input Voltage Range	11 to 300V AC, (Phase to Neutral) 19 to 519V AC, (Phase to Phase)
Input Current Range	Nominal 5A AC (Min-11mA, Max-6A)
Frequency	45Hz - 65Hz
Display Scrolling	Auto / Manual / Default
Power Consumption	8VA Max
Display Reset	Programmable (For energy)
Resolution	For energy: 0.01k,0. 1k,1K,0.01M,0.1M,1M (depending upon CT ratio x PT ratio) For Power, Voltage, Current: Auto resolution For Power factor: 0.01
Accuracy	Voltage (L-N / L-L), Current: ±0.5% of F.S Power factor: ±0.01 Frequency: ±0.1% For L-N Voltage >20V For L-L Voltage >35V Power (Active, Reactive, Apparent): 1% Energy (Active , Reactive, Apparent): Class 1
Memory Retention	10 years (For energy)
Measuring Parameters	Voltage (L-L / L-N) (Individual / Average), Current (I1, I2, I3) (Individual / Average), Frequency, Power Factor (Individual /Total) Active, Reactive & Apparent power (Individual/ Total), Active, Reactive (Import / Export) & Apparent Energy,Demand (Min / Max Active Power, Min / Max Reactive Power, Max Apparent Power)

Output Specifications

Communication Interface and Protocol	RS485 and MODBUS RTU
Communication address	1 to 255
Transmission mode	Half duplex
Transmission distance	500 Meter maximum
Transmission speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop bits	1 or 2
Response time	100 ms (max and independent of baud rate)

Auxiliary Supply Specifications

Supply Voltage	85 to 270V AC, (50/60Hz)
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Settable Parameters

CT Primary	1/5A to 10kA (Programmable for any value)
CT Secondary	1 / 5A (Programmable)
PT Primary	100V to 500kV (Programmable for any value)
PT Secondary	100V to 500V (Programmable for any value)

Environmental Specifications

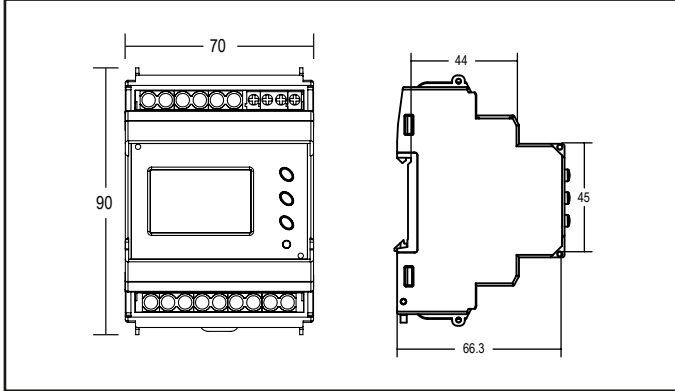
Temperature	Operating Temperature: -5 to +60° C Storage Temperature: -20 to +75° C
Humidity	Upto 85% RH

Mechanical Specifications

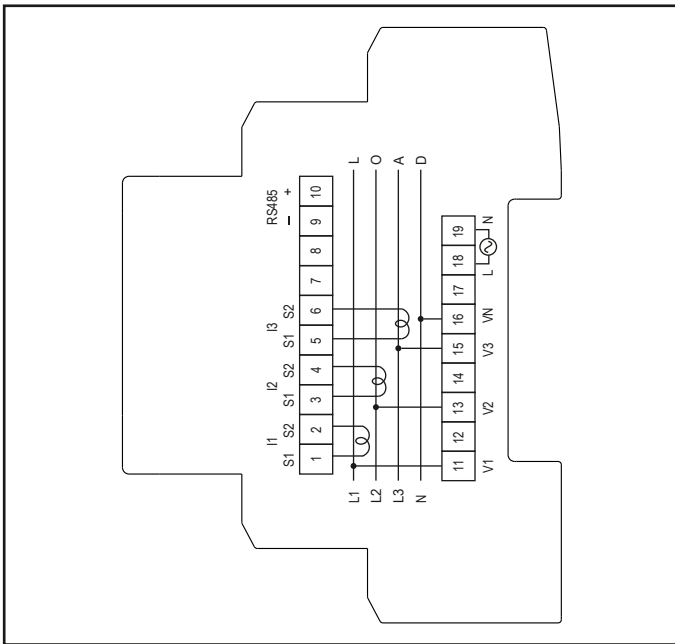
Mounting	Din Rail
Weight	208 gms

Multifunction Meter WTMRJ384

Dimensions (All dimensions are in mm)



Terminal Connections



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Ref.No.	Supply Voltage	Output	Certification
		85 - 270V AC	Comm. (RS485)	CE
WTMRJ384-R-C	W608206	■	■	---
WTMRJ384-R-C-CE	W608207	■	■	■

Plug-n-Wire

Multifunction Meter

1

The Time Saving Solution

Switchboard Accessories



Panel Mount

- **Dramatic reduction in labor**
(Save time by more than an hour compared to conventional meters)
- **No wiring error**
- **Safe disconnection from CT**
(No need of shorting links)



Split Load
Connects 2 loads on single meter

Din Rail Mount

MULTIFUNCTION METER

WTMRJ385-WTMRJ4M-WTMRJ4M-SL



WTMRJ385



WTMRJ4M



WTMRJ4M-SL

DESCRIPTION	MULTIFUNCTION METER			DIN RAIL MULTIFUNCTION METER																																			
Functions	<ul style="list-style-type: none"> • True RMS Measurement Of All Basic 3Ø Electrical Parameters • Energy (Active, Reactive, Apparent) • RJ45 connector current input • Programmable CT Primary, PT Primary/Secondary • RS485 Modbus Communication • Pulse Output • Max / Min Demand of power 			<ul style="list-style-type: none"> • True RMS Measurement Of All Basic 3Ø Electrical Parameters • Energy (Active, Reactive) • RJ45 connector current input • Programmable CT Primary, PT Primary/Secondary • RS485 Modbus Communication • Pulse Output • Max / Min Demand of power 			<ul style="list-style-type: none"> • True RMS Measurement Of All Basic 3Ø Electrical Parameters • Energy (Active, Reactive) • Split load, RJ45 connector current input • Programmable CT Primary, PT Primary/Secondary • RS485 Modbus Communication • 2 Pulse Output • Max / Min Demand of power 																																
Display	Liquid Crystal Display with backlight			Liquid Crystal Display with backlight																																			
Digits	4 row, of 4 digits per line to show electrical parameters, 1 row of 8 digits for energy display			Row 1 of 4 digits and Row 2, 3 of 7 digits per line to show electrical parameters,																																			
Input Type	3Ø-4 wire			3Ø-4 wire, 1Ø-2 wire																																			
Rated input Voltage	100 to 240V AC, (Phase to Neutral) 173 to 415V AC, (Phase to Phase)			60 to 300V AC, (Phase to Neutral) 104 to 520V AC, (Phase to Phase)																																			
Frequency				45Hz to 65Hz																																			
Resolution	For energy: 0.01k,0. 1k,1K (depending upon CT ratio X PT ratio) For Power, Voltage, Current: Auto resolution For Power factor: 0.001			For energy: 0.01k, 0.1k, 1k, 0.01M, 0.1M For Power, Voltage, Current: Auto resolution For Power factor: 0.01 Frequency: 0.1Hz																																			
Accuracy Class	Voltage (L-N / L-L), Current: ±0.5% of F.S Power factor: ±0.01 Frequency: ±0.1% (For V>20V L-N, V>35V L-L) Power (kW, kVA, kVAR): 1% Energy (Active, Reactive, Apparent): 1%			Voltage(L-N / L-L), Current: ±0.5%, Power factor: ±0.01 Frequency: ±0.1% Power (kW, kVA, kVAR): 1% Energy (Active, Reactive): 1%																																			
CT Primary				5A to 10,000A (Programmable for any value)																																			
CT Secondary				330mV																																			
PT Primary	100V to 500kV (Programmable for any value)			100V to 10kV (Programmable for any value)																																			
PT Secondary	100V to 500V AC (L-L) (Programmable for any value)			100V to 500V AC (L-L) (Programmable for any value)																																			
Supply Voltage	Self Supplied			Self Supplied (V1, N)																																			
Display Scrolling	Automatic / manual			---																																			
LED Indications	For Energy Consumption			For Energy Consumption																																			
Display update time				1 sec for all parameters																																			
Output	Pulse Output: Voltage Range: External 24V DC max. Current Capacity: 100mA max Pulse Width: Selectable between 50msec to 250msec			Pulse output: 1 Opto-isolated Voltage Range: 40V DC max. Current Capacity: 100mA max. Pulse Duration: Selectable between 0.1 to 2.0 sec. Pulse Weight: Selectable between 0.01 to 9.99 kWh		Pulse output: 2 Opto-isolated Voltage Range: 40V DC max. Current Capacity: 100mA max. Pulse Duration: Selectable between 0.1 to 2.0 sec. Pulse Weight: Selectable between 0.01 to 9.99 kWh																																	
Communication				RS485 MODBUS Communication																																			
Temperature / Humidity (non-condensing)	Operating : 0 to +50° C Storage : -20 to +75° C / Upto 85% RH			Operating : -10 to +55° C Storage : -20 to +75° C / Upto 85% RH																																			
Mounting	Panel mount			Din Rail mount																																			
Order Code	<table border="1"> <thead> <tr> <th rowspan="2">Part No.</th> <th colspan="2">Output</th> <th rowspan="2">Ref.No.</th> </tr> <tr> <th>Pulse Output</th> <th>Comm (RS485)</th> </tr> </thead> <tbody> <tr> <td>WTMRJ385</td> <td>■</td> <td>■</td> <td>W605454</td> </tr> </tbody> </table>			Part No.	Output		Ref.No.	Pulse Output	Comm (RS485)	WTMRJ385	■	■	W605454	<table border="1"> <thead> <tr> <th rowspan="2">Part No.</th> <th colspan="2">Output</th> <th rowspan="2">Ref.No.</th> </tr> <tr> <th>Pulse Output</th> <th>Comm (RS485)</th> </tr> </thead> <tbody> <tr> <td>WTMRJ4M</td> <td>■</td> <td>■</td> <td>W605451</td> </tr> </tbody> </table>			Part No.	Output		Ref.No.	Pulse Output	Comm (RS485)	WTMRJ4M	■	■	W605451	<table border="1"> <thead> <tr> <th rowspan="2">Part No.</th> <th colspan="2">Output</th> <th rowspan="2">Ref.No.</th> </tr> <tr> <th>Pulse Output</th> <th>Comm (RS485)</th> </tr> </thead> <tbody> <tr> <td>WTMRJ4M-SL</td> <td>■</td> <td>■</td> <td>W605453</td> </tr> </tbody> </table>			Part No.	Output		Ref.No.	Pulse Output	Comm (RS485)	WTMRJ4M-SL	■	■	W605453
Part No.	Output		Ref.No.																																				
	Pulse Output	Comm (RS485)																																					
WTMRJ385	■	■	W605454																																				
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WTMRJ4M-SL	■	■	W605453																																				

MULTIFUNCTION METER WTMRJ385-WTMRJ4M-WTMRJM-SL

ILLUSTRATIVE DIAGRAM OF PLUG-N-WIRE CONNECTION

1

Switchboard Accessories

RJ45 connector cable

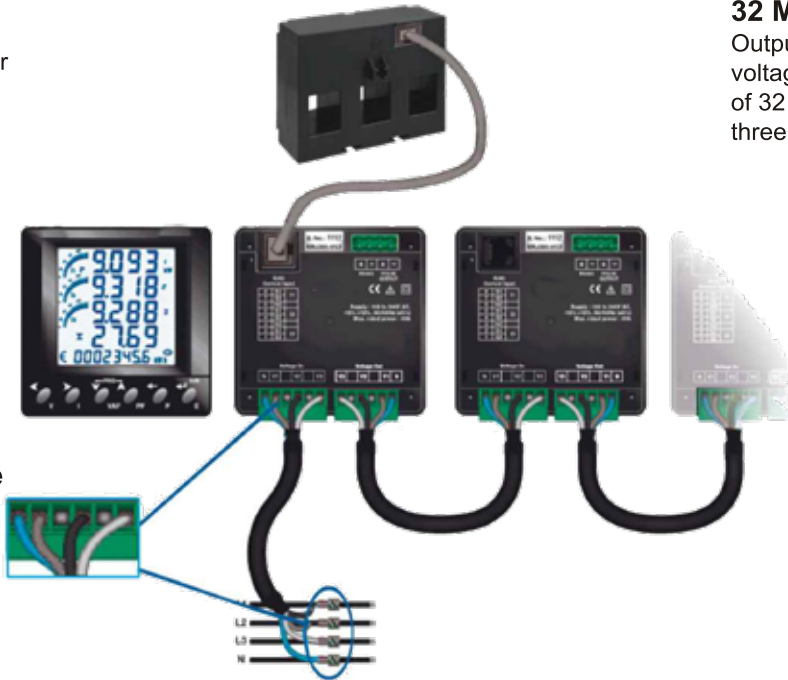
to link the meter to the 3 phase Current transformer

Link upto 32 Meters

Output connection for voltage aids connection of 32 meters from single three phase source

Plug in voltage connectors

for three phase voltage signals. Meter is self powered



Accessories



RJ45 Connector to carry 330mv

Order code:
1 MTR: WTPWRJ-1 W605455
3 MTR: WTPWRJ-3 W605456



Power Cable

Order code:
1 MTR: WTPWPR-1 W605461
3 MTR: WTPWPR-3 W605462



Daisy Chain Connector

Order code:
0.5 MTR: WTPWDC 0.5 W605457
1 MTR: WTPWDC 1 W605458
3 MTR: WTPWDC 3 W605459



Connector

Order code:
WTPWCON-MALE W605463
WTPWCON-FEMALE W605464



Adapter

Converts 3 single phase 5A CT output to 330mV

Order code:
WTPWADP-5A/330m V-3/1 W605460



Splitter

Helps to record output on WTPWCT on 3 different meters simultaneously

Order code:
WTPWASPL-330m-3meter W605465

Power Analyzer (WCPA)



Selection Chart

- State of Art Microcontroller Based Design.
- 4 Line Ultra Bright Red LED display to show phase wise & System Parameters on same page.
- Site Programmable CT & PT Ratio.
- True RMS measurement.
- Auto Scrolling Facility.
- Password protection
- EEprom retains Energy Parameters on power fail.
- Monitors Import & Export Energy.
- Computer Interface (RS 485)
- Pulse Output for PLC / SCADA interface
- Optional: Data Logging of all Parameters with Date & Time stamp (site programmable logging time interval).
- Voltage 415/240V, Frequency 60/50Hz

Application

- Control Panel
- Distribution Systems
- Generator Sets
- Motor Control
- Test Bench
- APFC Panel
- Energy Management
- Process Control & SCADA

PARAMETERS

- Volts : L - L, L - N (Per Phase & Avg.)
- Amps : Per Phase & summation
- Frequency : System
- Power Factor : Per Phase & Avg
- KW : Per Phase & Summation
- KWh : Import, Export & Summation
- KVArh : Capacitive & Inductive
- KVAh : Total
- KVA : Per Phase & Summation
- KVAR : Per Phase & Summation

Advantages

- To caution on the Extra Energy Consumption
- To identify inefficiency of Machine / Man
- Reduce Panel Space, Wiring , Installation Time
- Scale User adjustable reduces inventory

Selection Chart

System	3 Phase 4 Wire / 3 Phase 3 Wire / 1 Phase
Aux. Supply	90 - 270 VAC, 50/60 Hz / DC
Burden on Aux.	< 4 VA
Voltage Input	110 / 415 / 440 VAC (L -L) 500 Vmax
Current Input	1 Amps / 5 Amps
Burden on CT	< 0.2 VA
Temp	0 - 55 °C
Humidity	< 95% RH (non condensing)
Weight	350 gms
Repeatability	± 0.5%
Dimension	96 x 96mm Depth (behind bezzel) : 80 mm Panel Cut out : 92 x 92 mm
Accuracy	Voltage : 0.5 % of FS ± 2 Digit Current : 0.5 % of FS ± 2 Digit Frequency : ± 0.2 Hz
Resolution Voltes	Voltes : 1V Hz : 0.1 Hz Amps : 0-99:0.1 A, 100-999:1A, >1000:0.01KA
Ref. No.	W604112

Energy Meter (WEM100A)



DIN 35mm

Features :

- 1Ø True RMS (Voltage, Current)
- 1Ø Power (Active, Reactive, Apparent)
- Self Powered, 100A Direct Connection
- Bi - Directional Measurement IMP & EXP
- Max Demand Power
- Modbus RTU Communication (RS485)
- Two Pulse Outputs
- LED Pulse Indication
- LCD Display with Backlight

1 Switchboard Accessories

Display Specifications

Display	1 row, LCD with Backlight
Digits	7
LED Indications	Integration of Energy

Input Specifications

Electrical Connection	1Ø - 2 wire
Input Voltage Range	176 to 276V AC (L - N)
Input Current Range	5A AC (Min - 10mA, Max - 100A)
Frequency	45 to 65Hz
Display Scrolling	Automatic / Manual (Programmable)
Power Consumption	8VA max
Display Reset	Programmable (For energy)
Resolution	For energy : 0.01k, 0.1k, 1k For Power, Voltage, Current : Auto Resolution For Power Factor : 0.01
Accuracy	Voltage (L - N) : $\pm 0.5\%$ of F.S. Current : $\pm 0.5\%$ of Nominal Power Factor : ± 0.01 of F.S. Frequency : $\pm 0.1\%$ of F.S. Power (Active, Reactive, Apparent) : 1% Energy (Active, Reactive, Apparent) : Class 1
Memory Retention	10 years (For energy)
Measuring Parameters	Voltage (L - N) Current I1, Frequency, Power Factor, Power (Active, Reactive & Apparent), Energy (Active, Reactive & Apparent) Active, Reactive (Import / Export) & Max Demand Power

Output Specifications

Pulse Output	Voltage Range : 5 to 24V DC@100mA Pulse Duration : 0.05 to 2.0 Sec. settable Pulse Width : 1 / 10 / 100 / 1000 (First Pulse Output is fixed 1000 pulses per kWh)
Communication Interface and Protocol	RS485 and MODBUS RTU
Communication Address	1 to 255
Transmission Mode	Half duplex
Transmission Distance	500 meter maximum
Transmission Speed	9600, 19200 (in bps)
Parity	None, Odd, Even
Stop Bits	1 or 2
Response Time	100ms (max and independent of baud rate)

Auxiliary Supply Specifications

Supply Voltage	176 to 276V AC (Self - Powered)
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Environmental Specifications

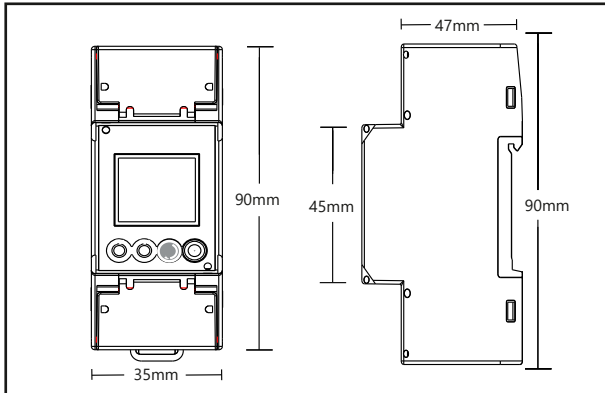
Temperature	Operating Temperature : -10° to 55° C Storage Temperature : -20° to 75° C
Humidity (non - condensing)	Upto 85% RH

Mechanical Specifications

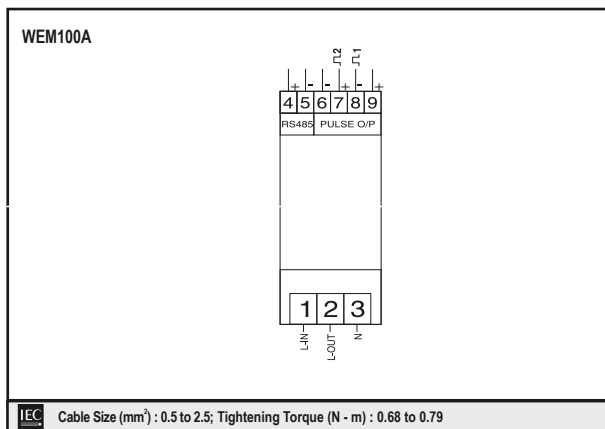
Mounting	Din Rail
Weight	150gms

Energy Meter (WEM100A)

Dimensions (All dimensions are in mm)



Terminal Connection



Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326 - 1		
Category		Standards Compliance
ESD Immunity	IEC 61000 - 4 - 2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000 - 4 - 5	+ / - 4kV common mode, (Line to Ground)
Radiated Susceptibility	IEC 61000 - 4 - 3	Level III, 80 to 1000MHz (10V / m) Level II, 1.4GHz to 2GHz (3V / m) Level I, 2GHz to 2.7GHz (1V / m)
Conducted Susceptibility	IEC 61000 - 4 - 6	Level II (3V / m)
Voltage Dips and Interruptions	IEC 61000 - 4 - 11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR - 11	
Radiated Emission	CISPR - 11	
Electrical Fast Transient	IEC 61000 - 4 - 4	Level IV (4kV)

Ordering Information

Product Code	Supply Voltage	Output		Ref.No.
WEM100A	176 to 276V AC (Self - Powered)	Pulse Output	Comm. (RS485)	W604128

Energy Meter WEM4-100A



DIN 70mm

Display specifications

Display	3 rows, LCD with backlight
Digits	1 row of 4 digits and 2 rows of 7 digits
LED indications	Pulse indication
Display scrolling	Automatic / Manual (Programmable)
Display reset	Programmable (For energy)

Input specifications

Electrical connection	1Ø - 2W (P1, P2, P3), 3Ø - 3W, 3Ø - 4W
Input voltage range	85-285V AC (L - N), 150-494V AC (L - L)
Input current range	Ib: 10 A (Min - 0.5A, Max - 100A)
Frequency	45 to 65Hz
Power consumption	1.6VA
Resolution	For energy : 0.01k For Power, Voltage, Current : Auto resolution For Power Factor : 0.01
Accuracy	Voltage (L - N) : ±0.5% of F.S. Current : ±0.5% of Nominal Power factor : ±0.01 of F.S. Frequency : ±0.2% of Nominal Power (Active, Reactive, Apparent) : Class 1 Energy (Active : Class 1, Reactive : Class 2)
Memory retention	10 years (For energy)
Measuring parameters	Voltage, Current, Frequency, Power factor, Power (Active, Reactive & Apparent), Energy (Active, Reactive & Apparent) Active, Reactive (Import / Export) & Max demand power

Output specifications

2 Pulse outputs	Voltage range : 5 to 24V DC@100mA Pulse duration : 0.05 to 2.0 Sec. settable Pulse width : 1 / 10 / 100 / 1000 for kVARh (First pulse output is fixed 1000 pulses per kWh)
Communication interface and protocol	RS485 and MODBUS RTU
Communication address	1 to 255 (Programmable)
Transmission mode	Half duplex
Transmission distance	500 meter maximum
Transmission speed (bps)	2400 / 4800 / 9600 / 19200 / 38400
Parity	None, Odd, Even
Stop bits	1 or 2
Response time	100ms (max and independent of baud rate)

Features :

- 3Ø True RMS (Voltage, Current)
- 3Ø Power (Active, Reactive, Apparent)
- Self powered, 100A direct connection
- Bi - Directional measurement IMP & EXP
- Max demand power
- Modbus RTU communication (RS485)
- Two pulse outputs

Certification : CE

Auxiliary supply specifications

Supply voltage	85 - 285V AC (L - N) & 150 - 494V AC (L - L) (Self - Powered)
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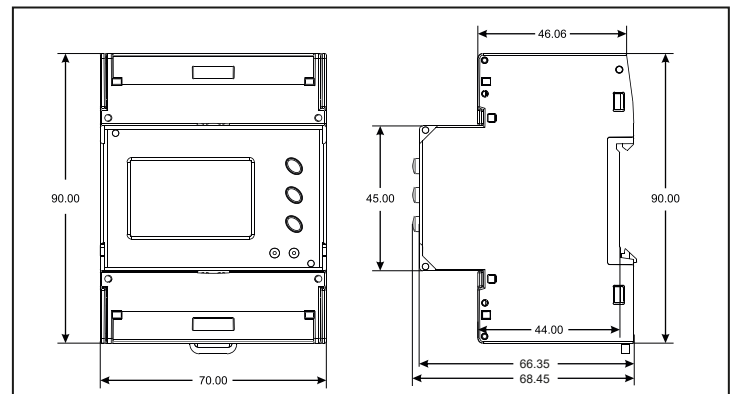
Environmental specifications

Temperature	Operating temperature: -10 to 55°C Storage temperature: -20 to 75°C
Humidity (non - condensing)	Up to 85% RH
Pollution degree	II
Installation category	III

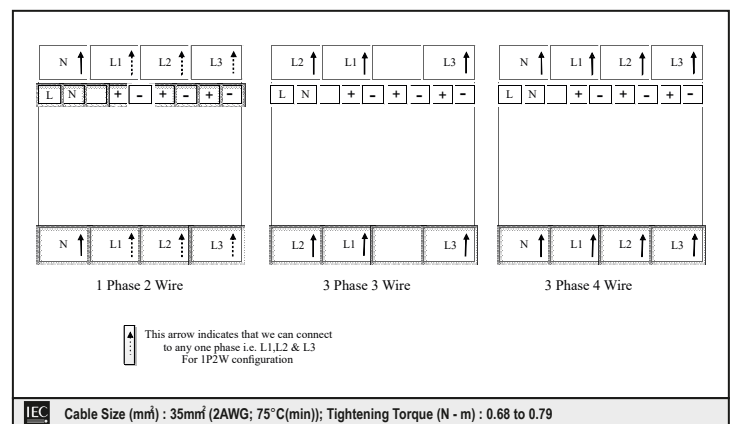
Mechanical specifications

Mounting	Din rail
Weight	400 gms

Dimensions (All are in mm)



Terminal connection



IEC Cable Size (mm²) : 35mm² (2AWG; 75°C(min)); Tightening Torque (N - m) : 0.68 to 0.79

Compliance

Applicable EMI / EMC standards		
Product standard : IEC 61326 - 1		
Category		Standards Compliance
ESD immunity	IEC 61000 - 4 - 2	Level IV (Air Discharge : 15kV), (Contact Discharge : -8kV)
Surge immunity	IEC 61000 - 4 - 5	+ / - 4kV Common Mode, (Line to Ground)
Radiated susceptibility	IEC 61000 - 4 - 3	Level III, 80 to 1000MHz (10V / m) Level II, 1.4GHz to 2GHz (3V / m) Level I, 2GHz to 2.7GHz (1V / m)
Conducted susceptibility	IEC 61000 - 4 - 6	Level II (3V / m)
Voltage dips and interruptions	IEC 61000 - 4 - 11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted emission	CISPR - 11	
Radiated emission	CISPR - 11	
Electrical fast transient	IEC 61000 - 4 - 4	Level IV (4kV)

Ordering information

Product code	Ref.No.	Supply voltage	Output	Certification
WEM4-3P-C/100A	W608027	85 - 285V AC (L - N) 150 - 494V AC (L - L)	2 Pulse Outputs Comm. (RS485)	CE

Ammeter WHMA335



96x96mm

1

Switchboard Accessories

Features:

- 4 Digit, 7 segment LED Display
- True RMS Measurement
- For 3Ø-4 wire, 3Ø-3 wire, 1Ø-2 wire Electrical Network
- K LED for kilo indication

Certifications:

Display Specifications

Type of Display	7 segment LED Display
Digit	4
Display Height	0.56" (14.2 mm)

Input Specifications

Electrical Connection	3Ø- 4 wire, 3Ø- 3 wire, 1Ø -2 wire
Input Type	AC
Input Current Range	50mA - 6A
Continuous Max. Input Rating	6.2A
Overrange Indication	"Or" for input > 6.2A
Resolution	Auto Resolution (Depend upon CT ratio)
Accuracy	±0.5% of F.S
Display Update Time	1 Sec

Settable Parameters

CT Primary	1 - 999.0kA
CT Secondary	1 or 5A

Auxiliary Supply Specifications

Auxiliary Supply	230V AC (±20%), 50/60 Hz
Power Consumption	<5 VA max.

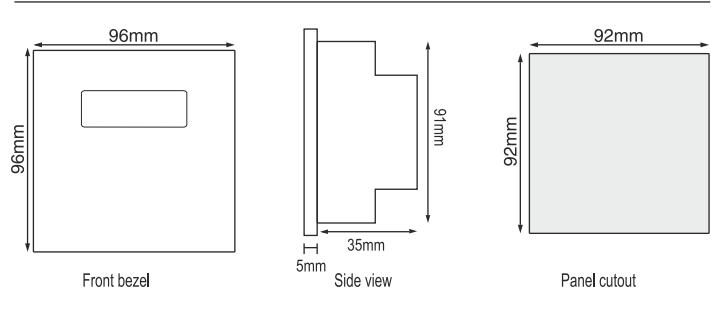
Environmental Specifications

Temperature	Operating: 0°C to 50°C Storage: -25°C to 70°C
Humidity (non-condensing)	0-90% (non-condensing)

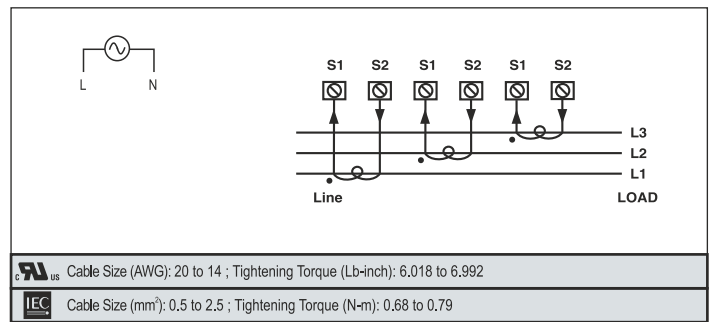
Mechanical Specifications

Mounting	Panel mount
Weight	200 gms

Dimensions



Terminal Connections



Ammeter WHMA335

Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Ref.No.	Supply Voltage	Certification
WHMA335-230VAC	W608918	230VAC	CE
WHMA335-230VAC-CE	W608919	230VAC	CE

Digital Voltmeter WHMVD334



96 x 96mm

96x96mm

Display Specifications

Display	7 segment LED
Digit	4
Display Height	0.56" (14.2 mm)

Input Specifications

Electrical Connection	1Ø 2 wire, 3Ø 3 wire, 3Ø 4 wire
Input Type	AC
Input Voltage Rated	11 - 300V (L-N) 19 - 516V (L-L)
Continuous Max. Input Rating	120 % of rated I/P voltage
Overrange Indication	"Or" for input > 516V (L-L) "Or" for input > 300V (L-N)
Frequency	50 / 60Hz
Resolution	Auto Resolution
Accuracy	±0.5% of F.S
Update Rate	1 Sec
Impedance	1MW (±5%)

Settable Parameters

PT Primary	100V – 999kV (Programmable to any Value)
PT Secondary	100V - 500V

Auxiliary Supply Specifications

Auxiliary Supply	230V AC, (±20%), 50/60 Hz
Power Consumption	<5 VA max.

Environmental Specifications

Temperature	Operating: 0 to 50°C Storage: -25 to 70°C
Humidity (non-condensing)	0-90% (non condensing)

Features:

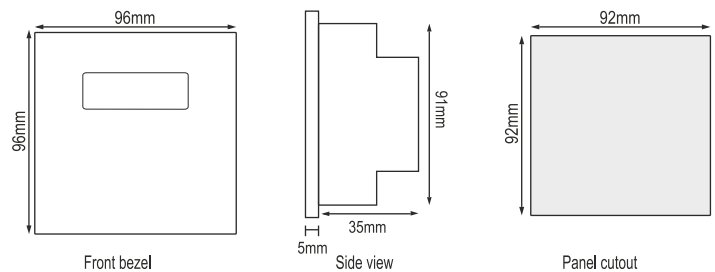
- For 1Ø 2 wire, 3Ø 3 wire, 3Ø 4 wire Electrical Network
- K LED for kilo indication

Certifications:

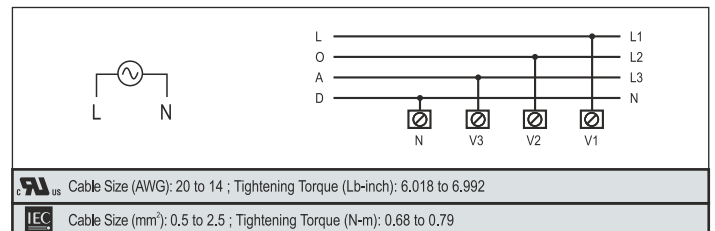
Mechanical Specifications

Mounting	Panel mount
Weight	190 gms

Dimensions



Terminal Connections



Digital Voltmeter WHMVD334

Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Ref.No.	Supply Voltage	Certification
WHMVD334-230VAC	W608920	230VAC	-
WHMVD334-230VAC-CE	W608921	230VAC	CE

DC Voltmeter

WHVDC100D/WHVDC100PD



1

Switchboard Accessories

Features:

- ▶ Available in 96 x 96 & 48 x 96 sizes
- ▶ 1 Line 4 Digit ultra bright LED display
- ▶ State of art micro controller based design
- ▶ Auto ranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ Compact
- ▶ To identify inefficiency of Machine / Man
- ▶ Reduce panel space, wiring and installation time

Applications:

- ▶ Control Panel
- ▶ Distribution System
- ▶ Generator sets
- ▶ Motor Control
- ▶ Test Bench
- ▶ Energy Management
- ▶ Process Control & SCADA

Supply Voltage

Auxiliary Supply	90-270V AC/DC (±15%)
Frequency	50/60 Hz

Display

Display	4 digits 7 segment LED display
Digit Height	0.56" (14.3mm)
Display Range	-9999 to +9999

Input Specifications

Input Voltage Range	0 - 10V DC / 0 - 20V DC / 0 - 200V DC & 0 - 1000V DC consult factory for other ranges
Accuracy	Class 1
Resolution	Auto ranging
Update Time	1 Sec.

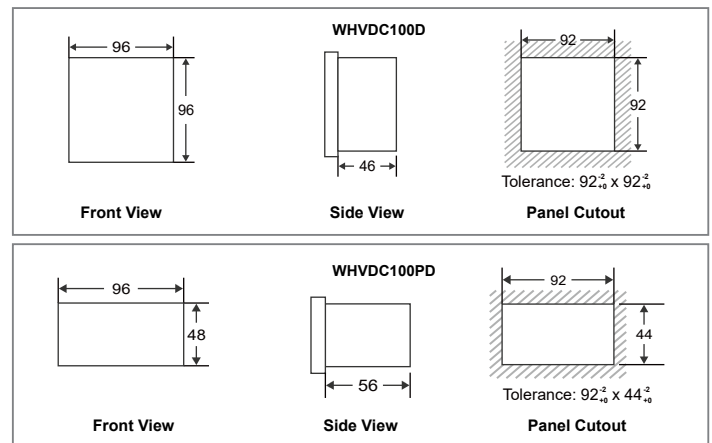
Environmental Specifications

Temperature	Operating : -10° to 55°C Storage : -20° to 75°C
Humidity	< 95% RH

Mechanical Specifications

Mounting	Flush Mounting with Side Clamps
Weight	180 g
Enclosure Material	ABS Thermoplastic

Dimension

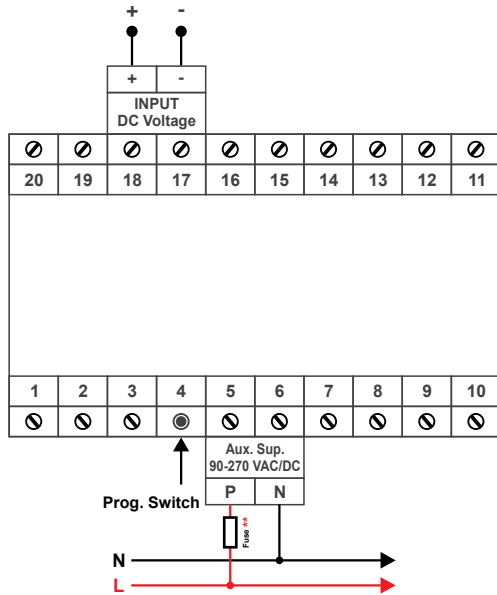


Applicable Standards

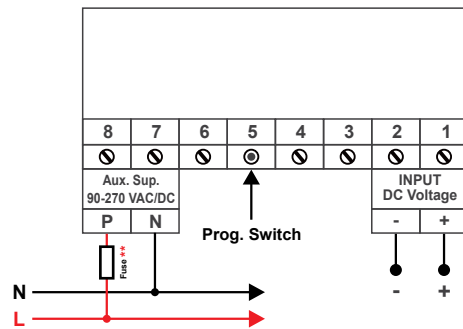
Radio Interference Suppression	CISPR22
Fast Transient Burst Test	IEC61000-4.4
Damped Oscillatory Waves Immunity Test	IEC61000-4.12
Test of Immunity to Electromagnetic RF Fields	IEC61000-4.3
Test of Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	IEC61000-4.6
Test of Immunity to Electrostatic Discharges	IEC61000-4.2
Surge Immunity Test	IEC61000-4.5
Test of Protection Against Penetration of Dust & Water	IEC60529

Connection Diagram

WHVDC100D Terminal Connection (96x96)



WHVDC100PD Terminal Connection (96x48)



Ordering Information

Cat. No.	Ref.No.	Description
WHVDC100D-10V	W611453	DC Voltmeter (96 x 96) 0 - 10 V
WHVDC100D-20V	W611454	DC Voltmeter (96 x 96) 0 - 20 V
WHVDC100D-200V	W611455	DC Voltmeter (96 x 96) 0 - 200 V
WHVDC100D-1000V	W611456	DC Voltmeter (96 x 96) 0 - 1000 V
WHVDC100PD-10V	W611457	DC Voltmeter (96 x 48) 0 - 10 V
WHVDC100PD-20V	W611458	DC Voltmeter (96 x 48) 0 - 20 V
WHVDC100PD-200V	W611459	DC Voltmeter (96 x 48) 0 - 200 V
WHVDC100PD-1000V	W611460	DC Voltmeter (96 x 48) 0 - 1000 V

DC Ammeter

WHADC101D/WHADC101PD



Features:

- ▶ Available in 96 x 96 & 48 x 96 sizes
- ▶ 1 Line 4 Digit ultra bright LED display
- ▶ State of art micro controller based design
- ▶ Site Programmable Shunt
- ▶ Auto ranging
- ▶ Universal Auxiliary supply

Advantages:

- ▶ Compact
- ▶ To identify inefficiency of Machine / Man
- ▶ Reduce panel space, wiring and installation time

Applications:

- ▶ Control Panel
- ▶ Distribution System
- ▶ Generator sets
- ▶ Motor Control
- ▶ Test Bench
- ▶ Energy Management
- ▶ Process Control & SCADA

Supply Voltage

Auxiliary Supply	90-270V AC/DC (±15%)
Frequency	50/60 Hz

Display

Display	4 digits 7 segment LED display
Digit Height	0.56" (14.3mm)
Display Range	-9999 to +9999

Input Specifications

Input Voltage Range	0 - 5A / 0 - 20A / 0 - 75mV consult factory for other ranges
Accuracy	Class 1
Resolution	Auto ranging
Update Time	1 Sec.

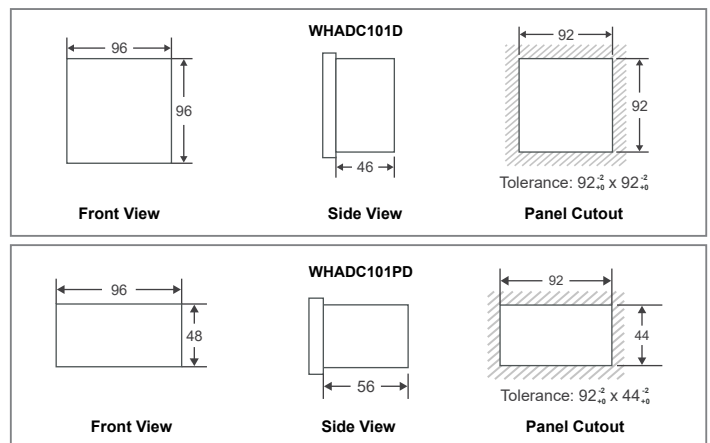
Environmental Specifications

Temperature	Operating : -10° to 55°C Storage : -20° to 75°C
Humidity	< 95% RH

Mechanical Specifications

Mounting	Flush Mounting with Side Clamps
Weight	180 g
Enclosure Material	ABS Thermoplastic

Dimension



Applicable Standards

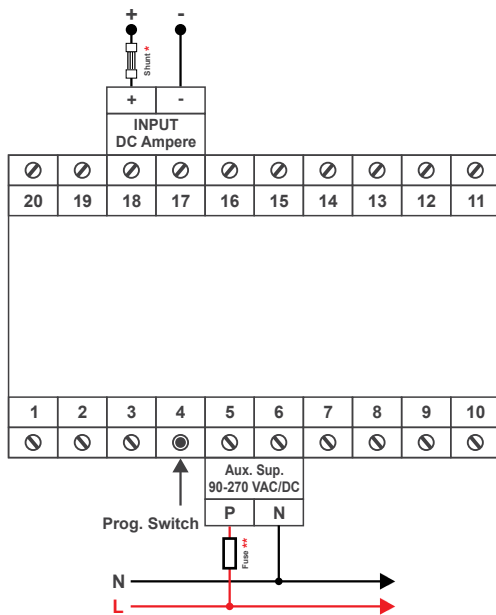
Radio Interference Suppression	CISPR22
Fast Transient Burst Test	IEC61000-4.4
Damped Oscillatory Waves Immunity Test	IEC61000-4.12
Test of Immunity to Electromagnetic RF Fields	IEC61000-4.3
Test of Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	IEC61000-4.6
Test of Immunity to Electrostatic Discharges	IEC61000-4.2
Surge Immunity Test	IEC61000-4.5
Test of Protection Against Penetration of Dust & Water	IEC60529

Safety Standards

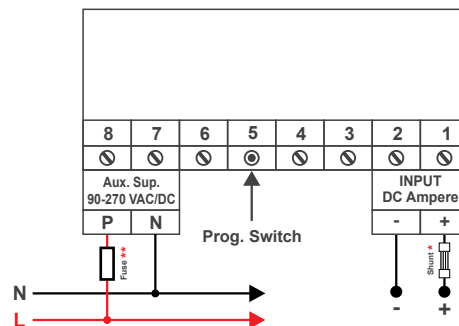
Safety Standard	IEC61010-1
Pollution Degree	2
Installation Category	III
High Voltage Test	3.3 kV AC, 50Hz for 1 Minute Between Aux.& Measuring Inputs

Connection Diagram

WHADC101D Terminal Connection (96x96)



WHADC101PD Terminal Connection (96x48)



* Connect Shunt Only for Shunt Programmable Ammeter, Shunt not provided with meter

Ordering Information

Cat. No.	Ref.No.	Description
WHADC101D-5A	W611461	DC Ammeter (96 x 96) 0 - 5A
WHADC101D-20A	W611462	DC Ammeter (96 x 96) 0 - 20A
WHADC101D-75mV	W611463	DC Ammeter (96 x 96) 0 - 75mV
WHADC101PD-5A	W611464	DC Ammeter (96 x 48) 0 - 5A
WHADC101PD-20A	W611465	DC Ammeter (96 x 48) 0 - 20A
WHADC101PD-75mV	W611466	DC Ammeter (96 x 48) 0 - 75mV

Current Tranfomers (WCT)

1

Switchboard Accessories



Feature

- Use with Different Bus Bar
- Panel Mount / Din Rail Mount (Optional Accessory)
- Accuracy: Class 0.5 to 5
- Voltage 240/415V, Frequency 50/60Hz

Input / Output Specifications

Rated primary rating	30A to 4000A
Rated secondary output	5A

Technical Specifications

Rated burden	1VA to 15VA
Class of accuracy	0.5 to 5
Thermal Nominal Continuous	120% of In Rated Current (I _{cth})
Thermal short circuit current (I _{th})	I _{th} =60 X I _n for 1 sec
Instrument security factor	FS<5
Isolation class	E (120°C max)
Max operating voltage (U _m)	720V maximum
Isolation test voltage	3kVAC 1 min
Nominal rated frequency	AC 50Hz -60Hz

Environmental Specifications

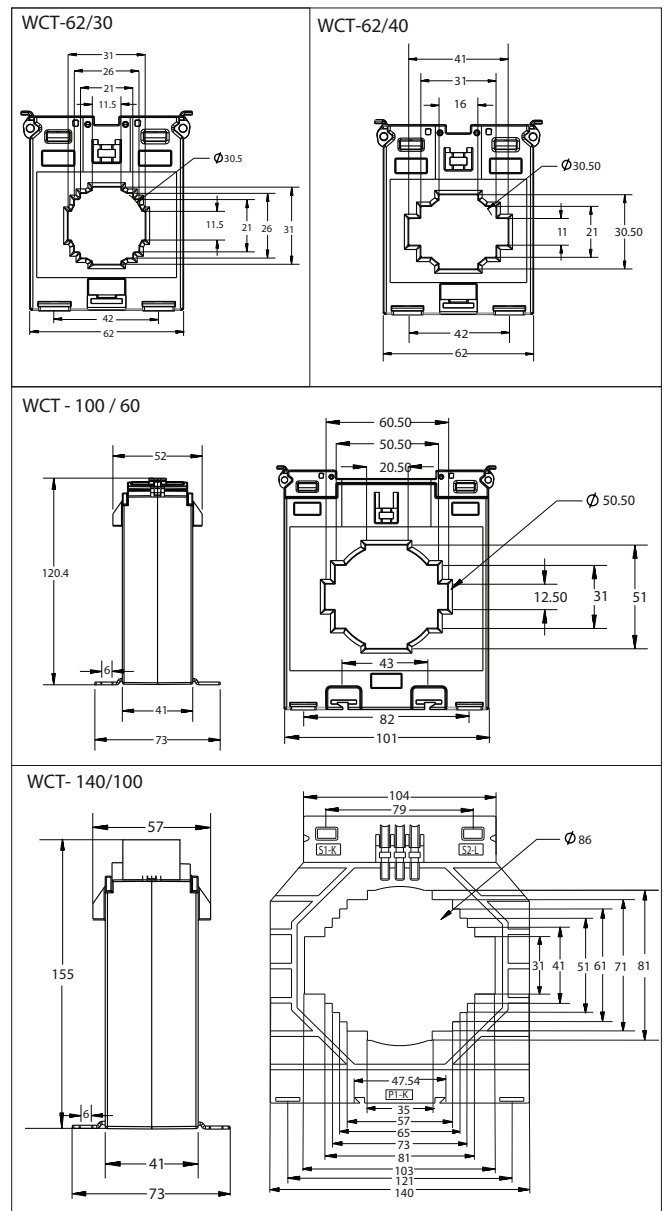
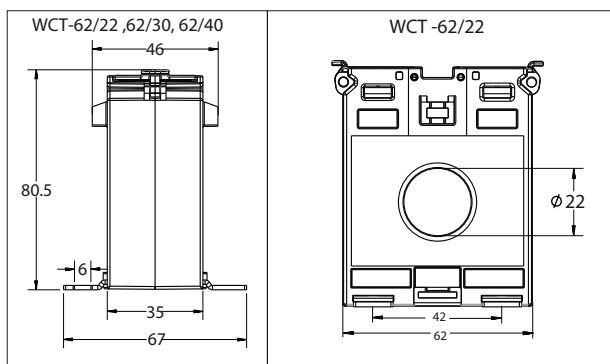
Ambient temperature	0°C...+50°C
Humidity	< 95% RH (non condensing)
Storage temperature	-5°C...+50°C

Mounting modes	Panel Mount / DIN rail Mount
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Standard

Applicable standard	IEC 61869-2
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Dimension (in mm)



Current Tranfomers (WCT)

PRODUCT CODE	REF.NO.	WIRE APERTURE In mm	CURRENT RATIO	BURDEN In VA	ACCURACY CLASS
WCT62/22 30/5 A VA 1 CL 5	W604074	DIA 22	30/5	1	5
WCT62/30 50/5 A VA 1 CL 3	W604075	30x10	50/5	1	3
WCT62/30 50/5 A VA 1.5 CL 3	W604076	30x10	50/5	1.5	3
WCT62/30 75/5 A VA 1 CL 3	W604077	30x10	75/5	1	3
WCT62/30-75/5 A VA 3 CL 3	W604078	30x10	75/5	3	3
WCT62/30 100/5 A VA 1 CL 1	W604079	30x10	100/5	1	1
WCT62/30 100/5 A VA 3 CL 1	W604080	30x10	100/5	3	1
WCT62/40 100/5 A VA 1 CL 1	W604081	40x10	100/5	1	1
WCT62/40 125/5 A VA 1 CL 1	W604082	40x10	125/5	1	1
WCT62/40 150/5 A VA 1.5 CL 1	W604083	40x10	150/5	1.5	1
WCT62/40 150/5 A VA 3 CL 1	W604084	40x10	150/5	3	1
WCT62/40 160/5 A VA 1.5 CL 1	W604085	40x10	160/5	1.5	1
WCT62/40 200/5 A VA 2.5 CL 0.5	W604086	40x10	200/5	2.5	0.5
WCT62/40 200/5 A VA 3 CL 1	W604087	40x10	200/5	3	1
WCT62/40 250/5 A VA 2.5 CL 0.5	W604088	40x10	250/5	2.5	0.5
WCT62/40 250/5 A VA 3 CL 1	W604089	40x10	250/5	3	1
WCT62/40 300/5 A VA 3 CL 0.5	W604090	40x10	300/5	3	0.5
WCT62/40 400/5 A VA 3.75 CL 0.5	W604091	40x10	400/5	3.75	0.5
WCT62/40 400/5 A VA 5 CL 1	W604092	40x10	400/5	5	1
WCT100/60 500/5 A VA 5 CL 1	W604093	60x12	500/5	5	1
WCT100/60 600/5 A VA 5 CL 0.5	W604094	60x12	600/5	5	0.5
WCT100/60 600/5 A VA 7.5 CL 1	W604095	60x12	600/5	7.5	1
WCT100/60 800/5 A VA 10 CL 0.5	W604096	60x12	800/5	10	0.5
WCT100/60 1000/5 A VA 15 CL 0.5	W604097	60x12	1000/5	15	0.5
WCT100/60 1200/5 A VA 15 CL 0.5	W604098	60x12	1200/5	15	0.5
WCT140/100 800/5 A VA 15 CL 0.5	W604099	100x30	800/5	15	0.5
WCT140/100 1000/5 A VA 15 CL 0.5	W604100	100x30	1000/5	15	0.5
WCT140/100 1200/5 A VA 15 CL 0.5	W604101	100x30	1200/5	15	0.5
WCT140/100 1250/5 A VA 15 CL 0.5	W604102	100x30	1250/5	15	0.5
WCT140/100 1500/5 A VA 15 CL 0.5	W604103	100x30	1500/5	15	0.5
WCT140/100 1600/5 A VA 15 CL 0.5	W604104	100x30	1600/5	15	0.5
WCT140/100 2000/5 A VA 15 CL 0.5	W604105	100x30	2000/5	15	0.5
WCT140/100 2500/5 A VA 15 CL 0.5	W604106	100x30	2500/5	15	0.5
WCT140/100 3000/5 A VA 15 CL 0.5	W604107	100x30	3000/5	15	0.5
WCT140/100 3200/5 A VA 15 CL 0.5	W609478	100x30	3200/5	15	0.5
WCT140/100 3500/5 A VA 15 CL 0.5	W604108	100x30	3500/5	15	0.5
WCT140/100 4000/5 A VA 15 CL 0.5	W604109	100x30	4000/5	15	0.5

Ammeter & Voltmeter



AMMETERS

Type	BE-72 72x72mm						BE-96 96x96mm					
Size												
	DIRECT				CT /1A or /5A						CT /1A or /5A	
Type	Cat.No.	Ref.No.	F6	F2	F6	F2	Cat.No.	Ref.No.	F6	F2	F6	F2
1A	WHAM1ABE72	W608264	● ○	●			WHAM1ABE96	W610442			● ○	●
5A	WHAM5ABE72	W608265	● ○	●	● ○	●	WHAM5ABE96	W610443	● ○	●	● ○	●
10A	WHAM10ABE72	W608266	● ○	●	● ○	●	WHAM10ABE96	W610444	● ○	●	● ○	●
15A	WHAM15ABE72	W608267	● ○	●	● ○	●	WHAM15ABE96	W610445	● ○	●	● ○	●
20A	WHAM20ABE72	W608268	● ○	●	● ○	●	WHAM20ABE96	W610446	● ○	●	● ○	●
25A	WHAM25ABE72	W608269	● ○	●	● ○	●	WHAM25ABE96	W610447	● ○	●	● ○	●
30A	WHAM30ABE72	W608270	● ○	●	● ○	●	WHAM30ABE96	W610448	● ○	●	● ○	●
40A	WHAM40ABE72	W608271	● ○	●	● ○	●	WHAM40ABE96	W610449	● ○	●	● ○	●
50A	WHAM50ABE72	W608272	● ○	●	● ○	●	WHAM50ABE96	W610450	● ○	●	● ○	●
60A	WHAM60ABE72	W608273	● ○	●	● ○	●	WHAM60ABE96	W610451	● ○	●	● ○	●
75A	WHAM75ABE72	W608274			● ○	●	WHAM75ABE96	W610452	● ○	●	● ○	●
100A	WHAM100ABE72	W608275			● ○	●	WHAM100ABE96	W610453	● ○	●	● ○	●
120A	WHAM120ABE72	W608276			● ○	●	WHAM120ABE96	W610454	● ○	●	● ○	●
150A	WHAM150ABE72	W608277			● ○	●	WHAM150ABE96	W610455			● ○	●
160A	WHAM160ABE72	W608331			● ○	●	WHAM160ABE96	W610456			● ○	●
200A	WHAM200ABE72	W608278			● ○	●	WHAM200ABE96	W610457			● ○	●
250A	WHAM250ABE72	W608279			● ○	●	WHAM250ABE96	W610458			● ○	●
300A	WHAM300ABE72	W608280			● ○	●	WHAM300ABE96	W610459			● ○	●
400A	WHAM400ABE72	W608281			● ○	●	WHAM400ABE96	W610460			● ○	●
500A	WHAM500ABE72	W608282			● ○	●	WHAM500ABE96	W610461			● ○	●
600A	WHAM600ABE72	W608283			● ○	●	WHAM600ABE96	W610462			● ○	●
800A	WHAM800ABE72	W608284			● ○	●	WHAM800ABE96	W610463			● ○	●
1000A	WHAM1000ABE72	W608285			● ○	●	WHAM1000ABE96	W610464			● ○	●
1200A	WHAM1200ABE72	W608286			● ○	●	WHAM1200ABE96	W610465			● ○	●
1250A	WHAM1250ABE72	W608287			● ○	●	WHAM1250ABE96	W610466			● ○	●
1500A	WHAM1500ABE72	W608288			● ○	●	WHAM1500ABE96	W610467			● ○	●
1600A	WHAM1600ABE72	W608289			● ○	●	WHAM1600ABE96	W610468			● ○	●
2000A	WHAM2000ABE72	W608290			● ○	●	WHAM2000ABE96	W610469			● ○	●
2500A	WHAM2500ABE72	W608291			● ○	●	WHAM2500ABE96	W610470			● ○	●
3000A	WHAM3000ABE72	W608292					WHAM3000ABE96	W610471				

VOLTMETERS							
Type	Cat.No.	Ref.No.	BE-72		Cat.No.	Ref.No.	BE-96
100V	WHV100VBE72	W608322	● ○		WHV100VBE96	W608326	● ○
300V	WHV300VBE72	W608323	● ○		WHV300VBE96	W608327	● ○
500V	WHV500VBE72	W608324	● ○		WHV500VBE96	W608328	● ○
600V	WHV600VBE72	W608325	● ○		WHV600VBE96	W608329	● ○

●	90°	1. Interchangeable dials
○	240°	1. Interchangeable dials 2. Fixed dials

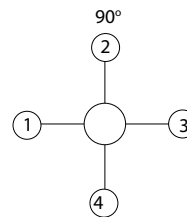
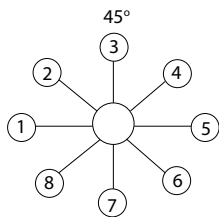
Ammeter / Voltmeter Selector Switches



Specifications

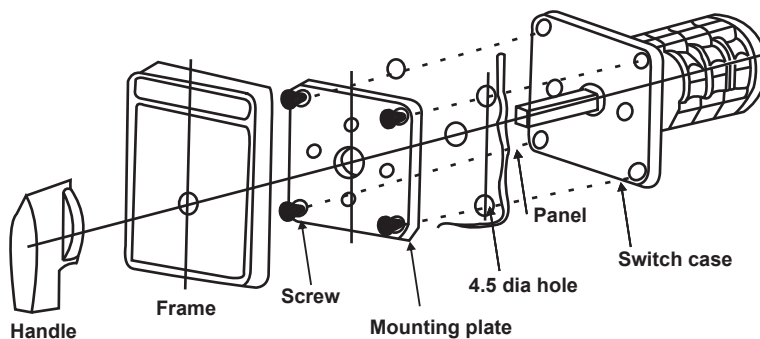
Elements Of Contact Point	Ag & Cdo
Contact Rating	10Amp/ 600Vac
Dielectric Strength	2500Vac 1 min
Mlectrical Life	1,000,000 Cycles
Electrical Life	100,000 Cycles
Ambient temperature	Storage: -30~+70°C
	Operation : -20 ~ + 55°C

Operational Position



Name Plate

Voltmeter Switches			
Ammeter Switches			



Ammeter / Voltmeter Selector Switches

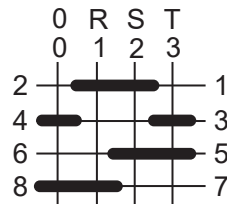
1

Switchboard Accessories

Ammeter Switches 3 phase 3 Wire 2 CT



W604129

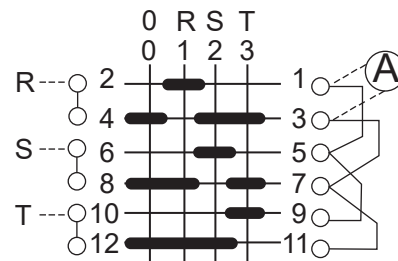


Contacts Overlap
3 2CT

Ammeter Switches 3 phase 4 Wire 3 CT



W604130

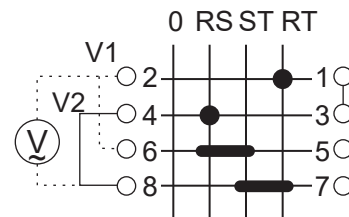


Contacts Overlap
3 ϕ 3CT

Voltmeter Switches 3 phase 3 Wire 3 CT



W604131

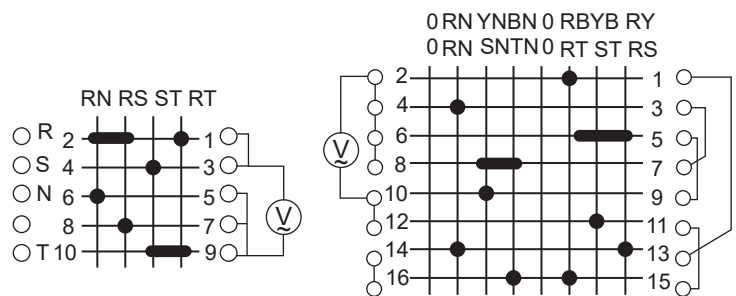


3 ϕ 3 Wire

Voltmeter Switches 3 phase 4 Wire



W604132



3 ϕ 4 Wire 7 Position

Adjustable Earth Leakage Relay (ELRW01)



Features

- Current display in percentage
- User settable trip level and timer delay
- DIN Rail mount
- CBCT open circuit detection
- CBCT available in various sizes
- Compliance with IEC 60947-1

Marking



Advantages

- DIN Rail mounted
- Protects human life
- Constant leakage current detection
- Fewer nuisance trips

Applications

- Generator Control Panel
- Distribution Control Panel
- Protection Control Panel

Input Specification

- Status Normally de-energised
- Reset Manual

Output Specifications

- Alarm Relay Output (Optional) 50% of Range
1 SPDT switch NO (5A and 240V AC)
NC (5A and 240V AC)
- Trip Relay Output 80-90% of Range
1 SPDT switch NO (5A and 240V AC)
NC (5A and 240V AC)
- Relay Contacts rating 1 potential free contact (NO,C & NC) Contact
6A/230V AC/28V DC

Functional Specifications

- Set Point (0.03, 0.10, 0.30, 0.50, 1.0, 3.0, 5.0, 10.0, 20.0 & 30.0 A)
- Power ON Delay Approx. 1 sec
- Trip time Delay 0.04 to 10 sec
- CBCT Sizes 35mm, 70mm, 120mm, 210mm and any other rectangular/round CBCT on request

Supply Specifications

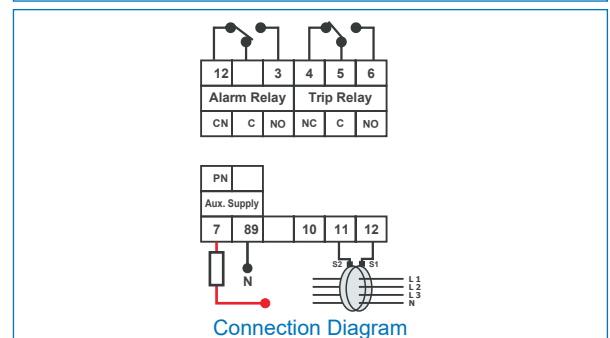
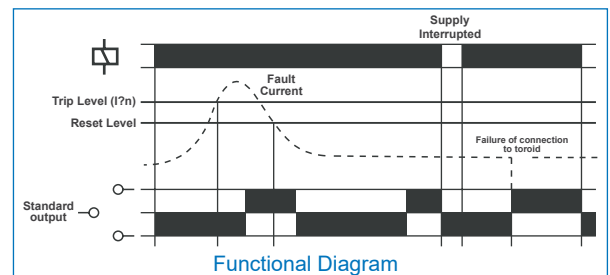
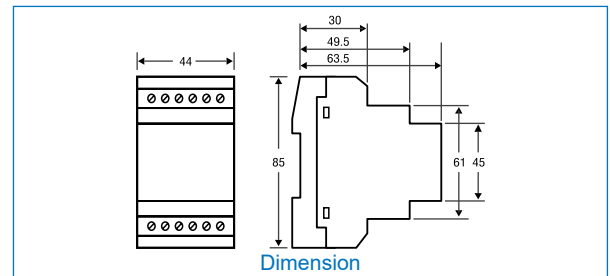
- Supply Voltage 90-270V AC/DC ($\pm 15\%$)
- Supply Frequency 50/60 Hz
- Power Consumption 3VA max.

Environmental Specification

- Operating Temperature $-10\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$
- Storage Temperature $-20\text{ }^{\circ}\text{C}$ to $50\text{ }^{\circ}\text{C}$
- Humidity $<95\%$ RH

Mechanical Specification

- Weight 228 g
- Dimensions 45x90x75mm (WxHxD)
- Mounting DIN Rail (35mm)
- Enclosure ABS Thermoplastic



User Settable Parameters

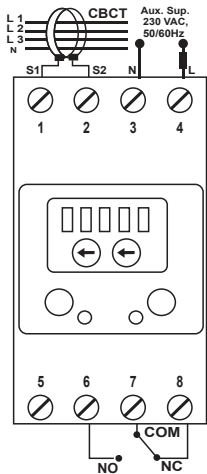
- Range Set 0.03, 0.10, 0.30, 0.50, 1.0, 3.0, 5.0, 10.0, 20.0 & 30.0 A
- Delay Set 0.04, 0.06, 0.15, 0.25, 0.5, 0.8, 1, 2.5, 5, 10 Sec

Ordering Information

Ordering Code	Ref.No	Description
ELRW01	W608764	DIN rail mounted digital ELR, current rating 30 mA- 30 A, SMPS based

Adjustable Earth Leakage Relay (WELRADJ)

1
Switchboard Accessories



Feature

- State of Art Microcontroller Based Design
- Bar Graph to indicate Leakage Current in percentage
- Consistent reliability with high accuracy
- User programmable Trip Level through Rotary Selector Switch
- User programmable Time Delay through Rotary Selector Switch
- Toroid Open Circuit Detection
- Facility to seal Front cover to avoid tampering of Set points
- Optional : Relay at %50 of set point to caution on Leakage current.
- Sensitivity Ranges: 0.03,0.10,0.30,0.50, 1.0, 3.0,5.0, 10.0,20.0 & 30.0 Amps.

Specification

Aux. Supply	240V / 110VAC 50 / 60Hz (%20- %15+)
Burden on Aux.	< 3 VA
Set Point	0.03,0.1,0.3,0.5,1.0,3.0,5.0,10.0,20.0 & 30.0Amps
Delay	0(< 25mS for Fault current >5xI n), 60,150,250,500, 800 mSec.,1,2.5,5,10 Sec.
Relay Contacts	Potential Free Contact (NO&NC) Energise on Trip
Reset	Manual
Trip Relay	80 - %90 of Set Value
Alarm Relay	%50 of Set Value
Contact Rating	6 Amps / 230 V AC/ 28 V DC
Temp	20- C to 55+ C
Humidity	< %95 RH (non condensing)
Dimension	90 x 45 x 75 mm (L x W x H)
Mounting	Din (35 mm rail) / 2 x m4 screw
Weight	300 gms

Earth Leakage Relays Adjustable trip

Description	Sensitivity	Time delay	Width	Quantity per carton	Cat. No.	Ref.No.
Earth leakage relay	Adjustable 30mA	Adjustable	36mm	1	WELRADJ	W604116

Core Balance CT(WCBCT)



Feature

- All current ratios available to match ELR
- Slim Design
- Light weight
- Encapsulated WCBCT
- Terminals are finger proof touch as per IEC
- Highly Cost effective
- Compact in size

Specification

System Voltage	720 V maximumv
Insulation Voltage	3kV for 1 minute
System Frequency	50 Hz or 60 Hz
Max. permissible Current	1KA continuous 5KA for 1.5 sec.
Terminal Conductor	< 2.5mm
Current ratio	1 / 1000, 1/ 600 any other on request
Distance Between Toroid and relay	< 50 meters
Operating Temperature	- 20°C to +70°C
Humidity	< 95% RH (non condensing)
Enclosure	Flame retardant glass filled ABS
Complaint with	IEC 44 -1 and IEC185
Mounting	Four Fixing Slots

Current Transformers(core balance)

Description	Inner Dimension	Quantity per carton	Catalog	Ref.No.
Current Transformer	30mm diameter	1	WCBCT30	W604117
	35mm diameter	1	WCBCT35	W604118
	70mm diameter	1	WCBCT70	W604119
	105mm diameter	1	WCBCT105	W604120
	120mm diameter	1	WCBCT120	W608028
	140mm diameter	1	WCBCT140	W604121
	210mm diameter	1	WCBCT210	W604122
	70mm x 175mm	1	WCBCT70-175	W604123
	115mm x 305mm	1	WCBCT115-305	W604124
	150mm x 350mm	1	WCBCT150-350	W604125
	200mm x 500mm	1	WCBCT200-500	W604126

Timer Switch (WDTSW16)



DIN 35mm

Features :

6 digits for Time Display, 2 digits for Step No.

50 ON - OFF Steps Per Day

Indications

- Auto Manual
- Holiday
- Relay Status
- Day Of Week
- Programming Mode

10 Years Power Reserve (Lithium Battery)

Display Specifications

Display	Text LCD (Without Backlight) 6 digits for time display, 2 digits for step no.
Character Height	5.07mm (HH : MM) and 3.39mm (SS)
Indications (Through symbol)	Auto Manual, Holiday, Relay status, Day of week, Programming mode

Output Specifications

No. of Output	1
Relay Contact	1 C/O SPDT
Contact Rating	16A @ 250V AC

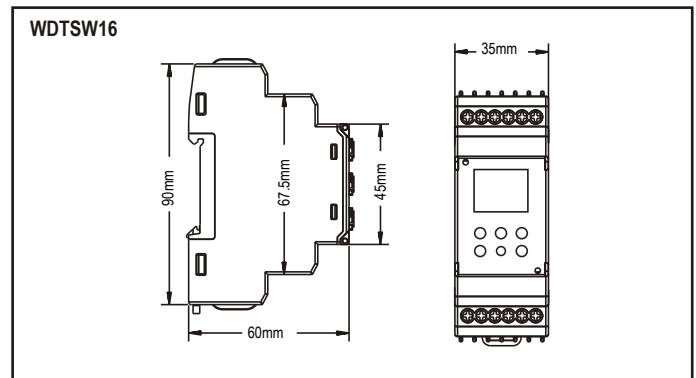
Functional Specifications

Operation Period	1 week
Weekly Program	Total 50 ON Steps and 50 OFF Steps 2 Programs x 25 Steps 3 Programs x 16 Steps 4 Programs x 12 Steps 5 Programs x 10 Steps 6 Programs x 08 Steps 7 Programs x 07 Steps 8 Programs x 06 Steps
Minimum setting unit	1 second
Holiday Settings	16 dates
Clock	12 - hr (AM / PM) and 24 - hr selection
Relay Operating Mode	Auto / Permanent Override ON / Permanent Override OFF
RTC accuracy	15 mins a year@25°C

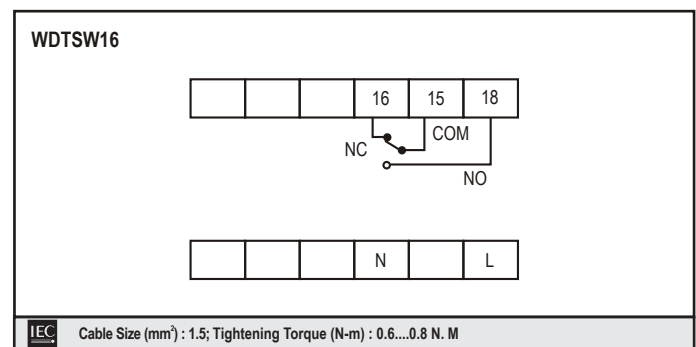
Auxiliary Supply Specifications

Supply Voltage	230V AC $\pm 10\%$ / 110V AC $\pm 10\%$ (50 / 60 Hz)
Power Consumption	Approx. 9 Watts at 252 VAC

Dimensions



Terminal Connections



Environmental Specifications

Temperature	Operating : 0 to 50° C Storage : -20 to 70° C
Humidity (non - condensing)	Upto 95% RH

Mechanical Specifications

Mounting	DIN Rail Mount
Weight	105gms

Timer Switch (WDTSW16)

Compliance

Applicable EMI / EMC Standards		
Product Standard		
Category	Reference Standards	Testing Level
Electrostatic Discharge	IEC 61000-4-2	Level-3
Electrical Fast Transient / Burst	IEC 61000-4-4	Level-3
Electromagnetic Field	IEC 61000-4-3	Level-3
Surge	IEC 61000-4-5	Level-3
Conducted RF	IEC 61000-4-6	Level-2
Rated Power Frequency	IEC 61000-4-8	Level-4
Voltage Dip / Short Interruptions	IEC 61000-4-11	Level-3
Conducted Emissions	CISPR-11	Class-B
Rated Emissions	CISPR-22	Class-A
Emission & Immunity	IEC 61326-1	
Safety	IEC 61010-1	
PFMF (Passing criteria)	IEC 61000-4-8	Class A

Ordering Information

Product Code	Supply Voltage	Ref.No.
WDTSW16	240V AC	W604127

Time Switch - Astronomical (DIN Rail)

1 Switchboard Accessories



DIN 35mm

Features :

- 6 digits for time display, 2 digits for step no.
- Latitude / Longitude precise to the minute with the time zone
- Sunrise / Sunset or Twilight rise / set trigger modes
- Ease of programming & navigation
- DST offset / off Hours weekly off features
- 12 / 24 hours Display Format
- 10+ years battery life

Certification : CE

Display Specifications

Display	Text LCD (Without Backlight) 6 digits for time display, 2 digits for step no.
Character Height	5.07mm (HH:MM) and 3.39mm (SS)
Indications (Through symbol)	Auto manual, Lock, Relay status, Day of week, Programming mode

Output Specifications

No. of Output	1
Relay Contact	1 C/O SPDT
Contact Rating	16A @ 250V AC

Functional Specifications

Operation Period	1 week
Program	Relay ON at calculated sunset & Relay OFF at calculated sunrise
Minimum setting unit	1 second
Clock	12-hr (AM / PM) and 24-hr selection
Relay Operating Mode	Auto / Permanent Override ON / Permanent Override OFF
RTC accuracy	15 mins a year @ 25°C

Auxiliary Supply Specifications

Supply Voltage	230V AC $\pm 10\%$ (50 / 60Hz)
Power Consumption	Approx. 9 Watts at 252V AC

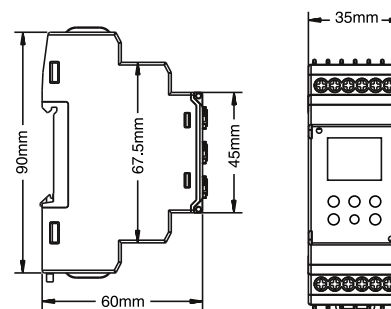
Environmental Specifications

Temperature	Operating : 0 to 50° C Storage : -20 to 70° C
Humidity (non-condensing)	Upto 95% RH

Mechanical Specifications

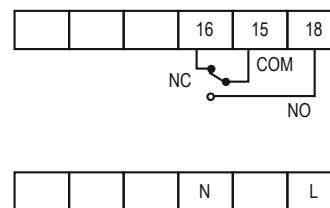
Mounting	DIN Rail Mount
Weight	105gms

Dimensions



Terminal Connections

WHTSM-1-16A-230V



Time Switch - Astronomical (DIN Rail)

Compliance

Applicable EMI / EMC Standards		
Product Standard : IEC 61326-1		
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)
Surge Immunity	IEC 61000-4-5	+/- 2kV common mode, (Line to ground) +/- 1kV differential mode, (Line to Line)
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz (10V/m) Level II, 1.4GHz to 2GHz (3V/m) Level I, 2GHz to 2.7GHz (1V/m)
Conducted Susceptibility	IEC 61000-4-6	Level II (3V/m)
Voltage Dips and Interruptions	IEC 61000-4-11	Dips : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C) Interruptions : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III (2kV)

Ordering Information

Product Code	Ref.No	Supply Voltage	Certification
WHTSM-1-16A-230V	W610569	230V AC	CE

Time Switch - Weekly (DIN Rail)



DIN 35mm

1 Switchboard Accessories

Features :

- 6 digits for time display, 2 digits for step no.
- 30 ON - OFF steps per day
- Indications
 - Auto manual
 - Holiday
 - Relay status
 - Day of week
 - Programming mode
- 10 years power reserve (Lithium battery)

Certification :

Display specifications

Display	Text LCD (Without backlight) 6 digits for time display, 2 digits for step no.
Character height	5.07mm (HH : MM) and 3.39mm (SS)
Indications (Through symbol)	Auto manual, Holiday, Relay status, Day of week, Programming mode

Output specifications

No. of output	2
Relay contact	1 C/O SPDT
Contact rating	16A @ 250V AC

Functional specifications

Operation period	1 week
Weekly program	Total 30 ON Steps and 30 OFF Steps
Minimum setting unit	1 second
Holiday settings	16 dates
Clock	12 - hr (AM / PM) and 24 - hr selection
Relay operating mode	Auto / Permanent override ON / Permanent override OFF
RTC accuracy	15 mins a year@25°C

Auxiliary supply specifications

Supply voltage	230V AC $\pm 10\%$ (50 / 60 Hz)
Power consumption	Approx. 9 watts at 252 VAC

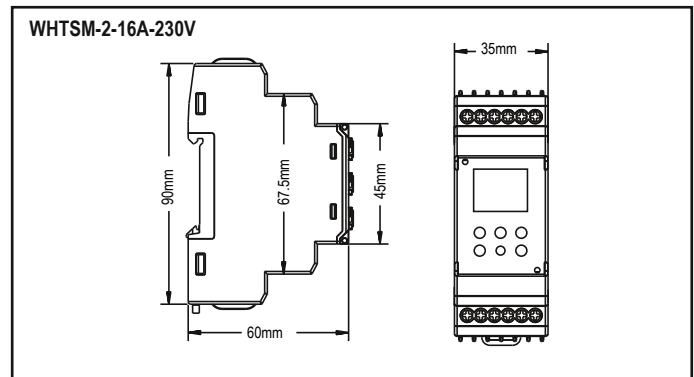
Environmental specifications

Temperature	Operating : 0 to 50° C Storage : -20 to 70° C
Humidity (non - condensing)	Upto 95% RH

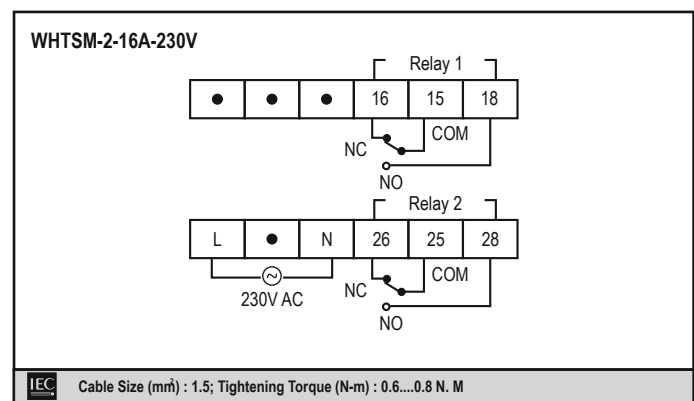
Mechanical specifications

Mounting	DIN rail mount
Weight	105 g

Dimensions



Terminal connections



Cable Size (mm²) : 1.5; Tightening Torque (N-m) : 0.6...0.8 N. M

Time Switch - Weekly (DIN Rail)

Compliance

Applicable EMI / EMC standards		
Product standard		
Category	Reference standards	Testing level
Electrostatic discharge	IEC 61000-4-2	Level-3
Electrical fast transient / Brust	IEC 61000-4-4	Level-3
Electromagnetic field	IEC 61000-4-3	Level-3
Surge	IEC 61000-4-5	Level-3
Conducted RF	IEC 61000-4-6	Level-2
Rated power frequency	IEC 61000-4-8	Level-4
Voltage dip / Short interruptions	IEC 61000-4-11	Level-3
Conducted emissions	CISPR-11	Class-B
Rated emissions	CISPR-22	Class-A
Emission & Immunity	IEC 61326-1	
Safety	IEC 61010-1	
PFMF (Passing criteria)	IEC 61000-4-8	Class A

Ordering Information

Product Code	Ref.No	Supply Voltage	Certification
WHTSM-2-16A-230V	W610570	230V AC	CE

1

Switchboard Accessories

17.5mm DIN Rail Timer WT600SD



Features:

- Star Delta
- 2 Time Ranges
- LED Status Indicator: Star Relay ON, Delta Relay ON
- DIN Rail

Size: DIN 17.5mm

Certifications:

Technical Specifications

Input Specifications

Accuracy	Setting: $\pm 5\%$ of F.S. Repeat: $\pm 0.5\%$ (F.S. = Full Scale)
Reset	On interruption of power; Reset time < 100 msec

Output Specifications

Output Contact	SPDT (1 C/O) relay each for star & delta
Contact Rating	NO/5A, NC/3A @250V AC

Functional Specifications

Modes	Star-delta
Time Ranges	Runup time range: 3-30sec, 6-60sec Pause Time: 50/100msec (Setting through front knob)

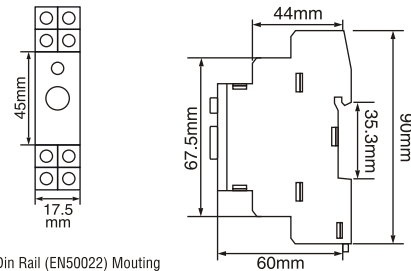
Supply Voltage

Supply Voltage	230V AC/ 110V AC (AC : 50 / 60Hz)
Power Consumption	4VA max

Environmental Specifications

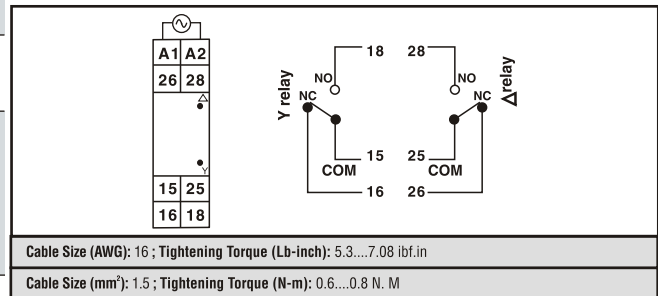
Temperature	Operating: 0 to 50°C (32 to 122°F) Storage: -20 to 75°C (-4 to 167°F)
Humidity (non-condensing)	95% RH
Weight	73 gms (0.163 lbs)
Protection Level	IP40 for Casing IP20 for terminals

Dimensions

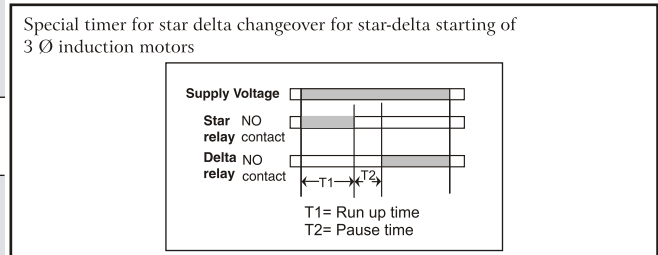


Symmetrical 35mm Din Rail (EN50022) Mounting

Terminal Connections



Timing Diagram



Ordering Information

Part No.	Supply Voltage		Ref.No.	Certification
	230V AC	110V AC		
WT600SD-2-230	■		W605493	■
WT600SD-CU	■		W605494	■
WT600SD-110-CU		■	W605495	■

17.5mm DIN Rail Timer WT600ST



Technical Specifications

Input Specifications

Accuracy	Setting: $\pm 5\%$ of F.S. Repeat: $\pm 0.5\%$ (F.S. = Full Scale)
Reset	Reset time < 100 msec

Output Specifications

Output Contact	SPDT (1 C/O)
Contact Rating	NO/5A, NC/3A@250V AC

Functional Specifications

Modes	On delay
Time Ranges	0.1 - 1 sec, 0.3 - 3 sec, 1 - 10 sec, 3 - 30 sec 0.1 - 1 min, 0.3 - 3 min, 1 - 10 min, 3 - 30 min 0.1 - 1 hr, 0.3 - 3 hr

Supply Voltage

Supply Voltage	240V AC (AC : 50 / 60Hz) 110V AC (AC : 50 / 60Hz) 24V AC/DC (AC : 50 / 60Hz)
----------------	--

Environmental Specifications

Temperature	Operating: 0 to 50°C (32 to 122°F) Storage: -20 to 75°C (-4 to 167°F)
Humidity (non-condensing)	95% RH
Weight	61 gms
Protection Level	IP40 for Casing IP20 for terminals

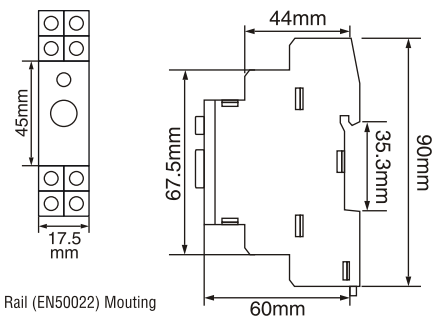
Features:

- On Delay
- 10 Time Ranges
- Front knobs for Time Range & Time Scale
- Slim, Space Saving Design
- DIN Rail Mount

Size: DIN 17.5mm

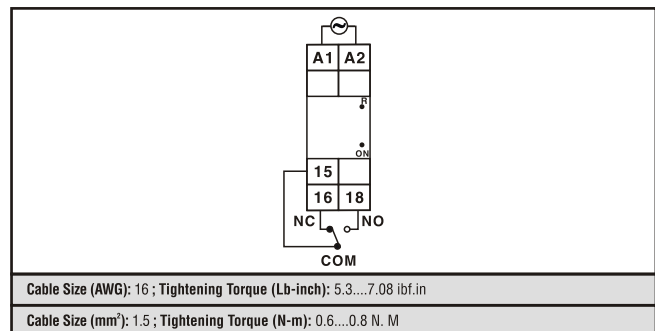
Certifications:

Dimensions

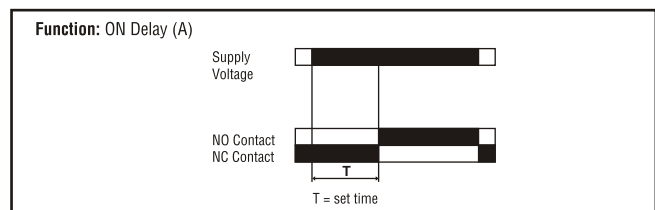


Symmetrical 35mm Din Rail (EN50022) Mounting

Terminal Connections



Timing Diagram



Ordering Information

Part No.	Supply Voltage			Ref.No.	Certification
	240V AC	110V AC	24V AC/DC		
WT600ST	■			W605496	■
WT600ST-CU	■			W605497	■
WT600ST-110-CU		■		W605498	■
WT600ST-24-CU			■	W605499	■

17.5mm DIN Rail Timer WT600XU



1

Switchboard Accessories

Technical Specifications

Input Specifications

Accuracy	Setting: $\pm 5\%$ of F.S. Repeat: $\pm 0.5\%$ (F.S. = Full Scale)
Reset	Reset time < 100 msec

Output Specifications

Output Contact	SPDT (1 C/O)
Contact Rating	NO/5A, NC/3A@250V AC

Functional Specifications

Modes	On delay (A) Interval (B) Cyclic equal OFF first (C) Cyclic equal ON first (Ci) Pulse output, 500ms fixed (D) Delay on break (E) Delay on make / Delay on break (F) Interval after break (H) Single shot (I) Retriggerable Single shot (J) Latching relay (K) Delay with Totalise (Ai) Interval with totalise (Bi)
Time Ranges	0.1 - 1 sec, 0.3 - 3 sec, 1 - 10 sec, 3 - 30 sec 0.1 - 1 min, 0.3 - 3 min, 1 - 10 min, 3 - 30 min 0.1 - 1 hr, 0.3 - 3 hr

Supply Voltage

Supply Voltage	20-240V AC 12-240V DC AC : (50 / 60 Hz)
Power Consumption	3.2 VA

Features:

- 13 Functions
- 10 Time Ranges
- Front knobs for Time Range, Time Scale & Mode Setting
- Slim, Space Saving Design
- DIN Rail Mount

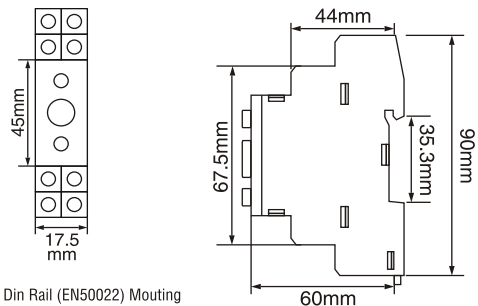
Size: DIN 17.5mm

Certifications:

Environmental Specifications

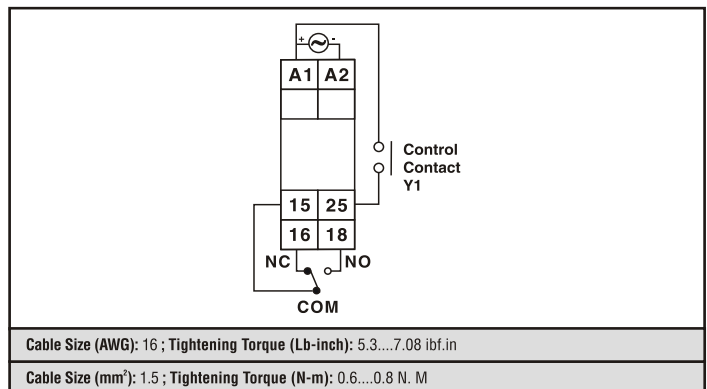
Temperature	Operating: 0 to 50°C (32 to 122°F) Storage: -20 to 75°C (-4 to 167°F)
Humidity (non-condensing)	95% RH
Weight	64 gms
Protection Level	IP40 for Casing IP20 for terminals

Dimensions



Symmetrical 35mm Din Rail (EN50022) Mounting

Terminal Connections

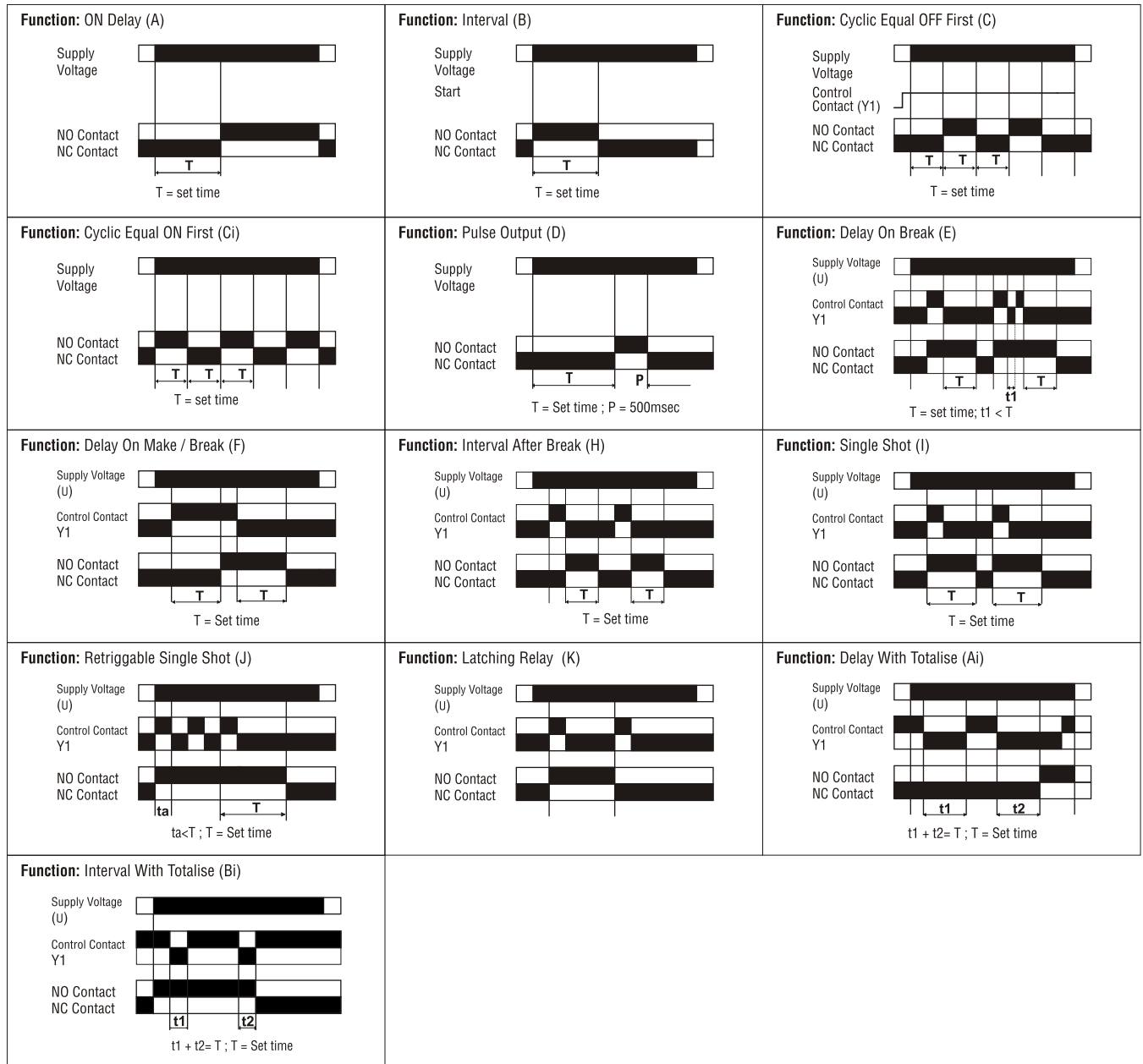


Ordering Information

Part No.	Ref.No.	Supply Voltage	Certification	
WT600XU	W605500	20-240V AC 12-240V DC	■	
WT600XU-A-1-CU	W605501	20-240V AC 12-240V DC	■	■

17.5mm DIN Rail Timer WT600XU

Timing Diagram



17.5mm DIN Rail Timer WT600DT



DIN 17.5mm

Features :

- 15 Functions
- 8 Time Ranges
- Front Key Pad Setting
- Universal supply voltage
- Slim, Space Saving Design

Certifications :

Display Specifications

Display	3 + 3 digits
Indications	Relay ON, Operating modes, Hr, Min, Sec

Input Specifications

Accuracy	Setting : $\pm 0.1\%$ of set time or $\pm 50\text{msec}$ (whichever is greater) For Y contact operation : $+100\text{msec}$ Repeat : $\pm 0.1\%$
----------	--

Output Specifications

Relay Contact	1 C/O SPDT
Contact Rating	8A @ 250V AC

Functional Specifications

Modes	On delay (A) Interval (B) Asymmetrical cyclic OFF first (C) Asymmetrical cyclic ON first (D) Cyclic equal OFF first (E) Cyclic equal ON first (F) Pulse output (H) Delay on break (J) Delay on make / break (K) Interval after break (L) Single shot (P) Retriggerable single shot (Q) Latching relay (R) Delay on break with totalise (T) Interval with totalise (U)
Time Ranges	0 - 99.9sec / min /hr 0 - 999sec / min / hr 0 - 9:59min : sec 0 - 9:59hr : min
Counting Direction	Down
Memory Retention	Yes (selectable)
Resolution	0.1sec
Reset	Front Key, On power interruption Reset time < 100msec

Auxiliary Supply Specifications

Supply Voltage	20 to 240V AC / DC (50 / 60Hz)
Power Consumption	4VA max

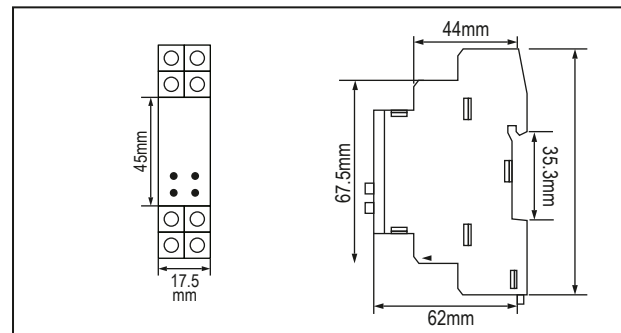
Environmental Specifications

Temperature	Operating : 0 to 50°C (32 to 122°F) Storage : -20 to 75°C (-4 to 167°F)
Humidity (non - condensing)	95% RH

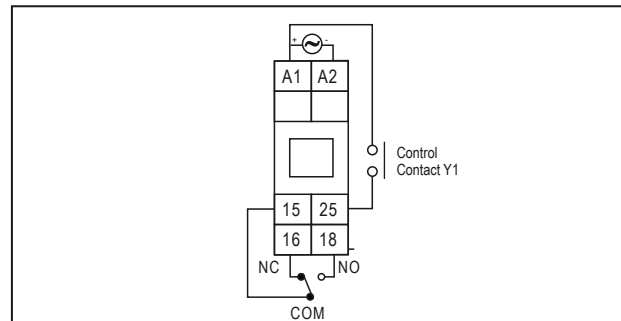
Mechanical Specifications

Mounting	DIN Rail Mount
Weight	75 gms

Dimensions



Terminal Connections



Cable Size (AWG) : 16 ; Tightening Torque (Lb - inch) : 5.3...7.08 ibf.in

Cable Size (mm²) : 1.5 ; Tightening Torque (N-m) : 0.6...0.8 N. M

17.5mm DIN Rail Timer WT600DT

Compliance

Applicable EMI / EMC Standards		
Product Standard		
Category	Reference Standards	Testing Level
Electrostatic Discharge	IEC 61000-4-2	Level-3
Electrical Fast Transient / Burst	IEC 61000-4-4	Level-3
Electromagnetic Field	IEC 61000-4-3	Level-3
Surge	IEC 61000-4-5	Level-3
Conducted RF	IEC 61000-4-6	Level-2
Rated Power Frequency	IEC 61000-4-8	Level-4
Voltage Dip / Short Interruptions	IEC 61000-4-11	Level-3
Conducted Emissions	CISPR-11	Class-B
Rated Emissions	CISPR-22	Class-A
Emission & Immunity	IEC 61326-1	
Safety	IEC 61010-1	
PFMF (Passing criteria)	IEC 61000-4-8	Class A

Ordering Information

Product Code	Supply Voltage	Ref.No.	Certification
WT600DT	20 to 240V AC / DC	W605502	CE c RU US
WT600DT-CU	20 to 240V AC / DC	W605503	CE c RU US

17.5mm DIN Rail Timer WT600XU



DIN 17.5mm

1

Switchboard Accessories

Features :

- 13 Functions
- 10 Time Ranges
- LED Indications : Relay ON, Power ON
- Front knobs for Time Range, Time Scale & Mode Setting
- Slim, Space Saving Design

Certifications :

Display Specifications

LED Indications	Relay ON, Power ON
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Input Specifications

Accuracy	Setting : $\pm 5\%$ of F.S. Repeat : $\pm 0.5\%$ (F.S. = Full Scale)
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Output Specifications

Relay Contact	1 C/O SPDT
Contact Rating	5A @ 250V AC

Functional Specifications

Modes	On delay (A) Interval (B) Cyclic equal OFF first (C) Cyclic equal ON first (Ci) Pulse output, 500ms fixed (D) Delay on break (E) Delay on make / Delay on break (F) Interval after break (H) Single shot (I) Retriggerable single shot (J) Latching relay (K) Delay on make with totalise (Ai) Interval with totalise (Bi)
Time Ranges	0.1 - 1sec, 0.3 - 3sec, 1 - 10sec, 3 - 30sec 0.1 - 1min, 0.3 - 3min, 1 - 10min, 3 - 30min 0.1 - 1hr, 0.3 - 3hr
Resolution	0.1sec
Reset	On power interruption Reset time < 100msec

Auxiliary Supply Specifications

Supply Voltage	20 to 240V AC (50 / 60Hz), 12 to 240V DC
Power Consumption	3.2 VA max

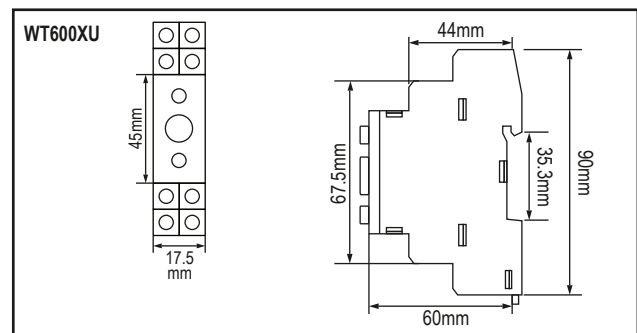
Environmental Specifications

Temperature	Operating : 0 to 50°C (32 to 122°F) Storage : -20 to 75°C (-4 to 167°F)
Humidity (non - condensing)	95% RH

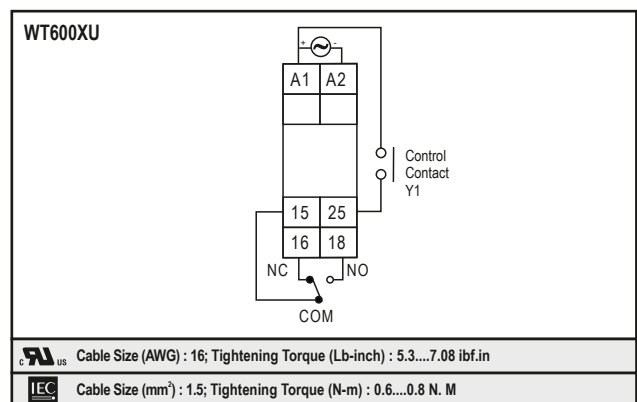
Mechanical Specifications

Mounting Weight	DIN Rail Mount 64gms
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Dimensions

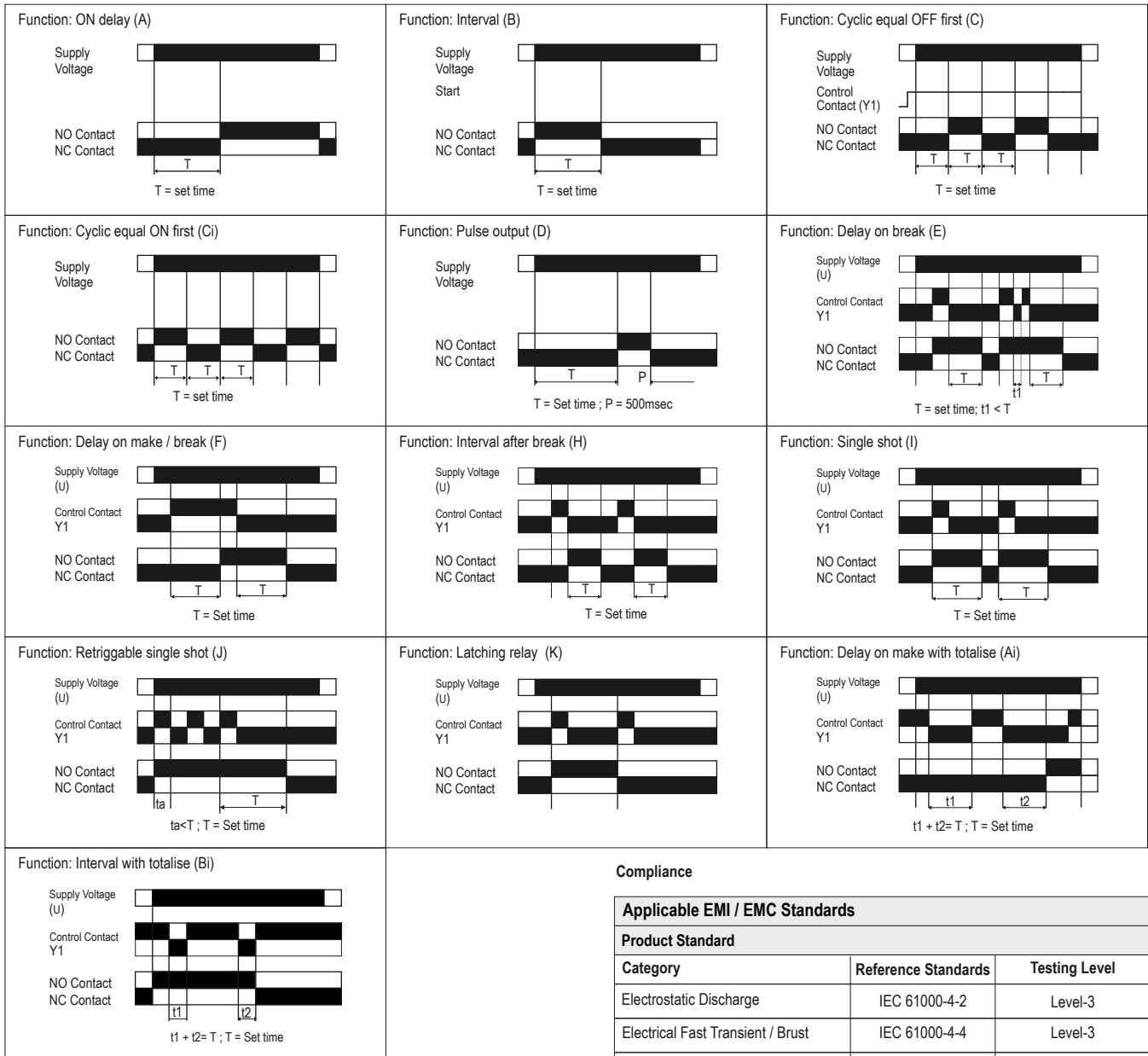


Terminal Connections



17.5mm DIN Rail Timer WT600XU

Timing Diagram



Ordering Information

Product Code	Supply Voltage	Ref.No.	Certification
WT600XU-A-1-CU	20 to 240V AC, 12 to 240V DC	W605504	CE

Compliance

Applicable EMI / EMC Standards		
Product Standard		
Category	Reference Standards	Testing Level
Electrostatic Discharge	IEC 61000-4-2	Level-3
Electrical Fast Transient / Brust	IEC 61000-4-4	Level-3
Electromagnetic Field	IEC 61000-4-3	Level-3
Surge	IEC 61000-4-5	Level-3
Conducted RF	IEC 61000-4-6	Level-2
Rated Power Frequency	IEC 61000-4-8	Level-4
Voltage Dip / Short Interruptions	IEC 61000-4-11	Level-3
Conducted Emissions	CISPR-11	Class-B
Rated Emissions	CISPR-22	Class-A
Emission & Immunity	IEC 61326-1	
Safety	IEC 61010-1	
PFMF (Passing criteria)	IEC 61000-4-8	Class A

17.5mm DIN Rail Timer

WT642SQ-A



Size: DIN 17.5mm

Technical Specifications

Input Specifications

Accuracy	Setting: $\pm 5\%$ of F.S. Repeat: $\pm 0.5\%$ or 50 msec (F.S. = Full Scale)
Reset	On interruption of power; Reset time < 100 msec

Output Specifications

Output Contact	SPDT (1 C/O)
Contact No/Nc	5A/3A 250V AC / 24V DC

Functional Specifications

Modes	ON delay / Interval
Time Ranges	0 - 3 sec / min 0 - 10 sec / min 0 - 30 sec / min 0 - 60 sec / min

Supply Voltage

Supply Voltage	A1, A2 230VAC, 150/60Hz 25(+), A2(-) 24 AC/DC, -15 to +10%
Power Consumption	6VA max

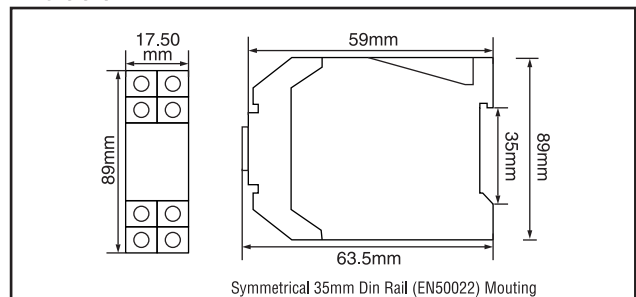
Environmental Specifications

Temperature	Operating: 0 to 50°C (32 to 122°F) Storage: -20 to 75°C (-4 to 167°F)
Humidity (non-condensing)	95% RH
Weight	115 gms (0.220 lbs)

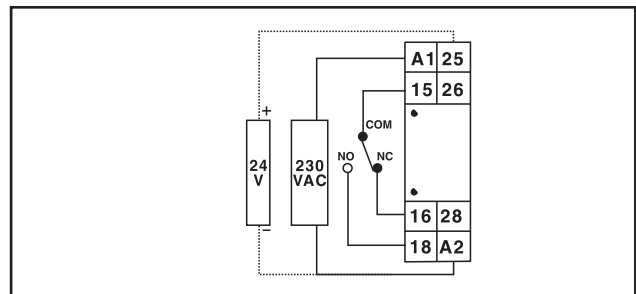
Features:

- ON Delay / Interval
- Dual Supply Voltage
- LED Status Indicator: Power ON, Relay ON
- DIN Rail / Back Panel Mount
- Finger Safe Terminals

Dimensions



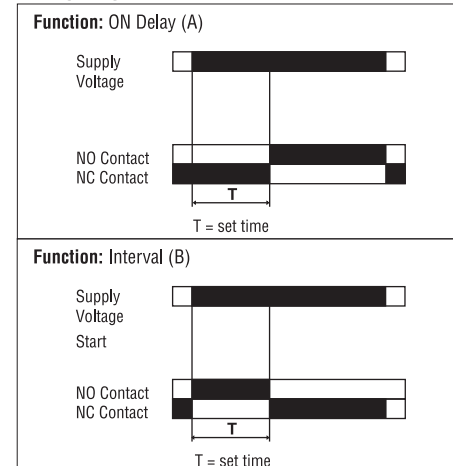
Terminal Connections



Ordering Information

Part No.	Ref.No	Supply Voltage
WT642SQ-A	W605505	230V AC

Timing Diagram



17.5mm DIN Rail Timer WT642XA



DIN 17.5mm

Display Specifications

LED Indications	Power ON, Relay ON
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Input Specifications

Accuracy	Setting : $\pm 5\%$ of F.S. Repeat : $\pm 0.5\%$ or 50msec (F.S. = Full Scale)
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Output Specifications

Relay Contact	1 C/O SPDT
Contact Rating	5A @ 250V AC or 24V DC

Functional Specifications

Modes	ON delay / Interval
Time Ranges	0 - 3sec / min 0 - 10sec / min 0 - 30sec / min 0 - 60sec / min
Resolution	0.3sec
Reset	On power interruption Reset time < 100 msec

Auxiliary Supply Specifications

Supply Voltage	20V to 240VAC, 12V to 240 VDC
Power Consumption	6VA max

Environmental Specifications

Temperature	Operating : 0 to 50°C (32 to 122°F) Storage : -20 to 75°C (-4 to 167°F)
Humidity (non - condensing)	95% RH

Mechanical Specifications

Mounting	DIN Rail Mount
Weight	115gms

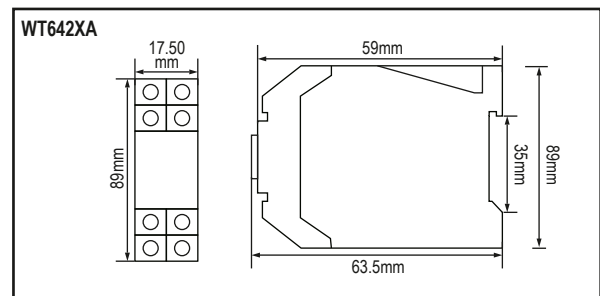
Ordering Information

Product Code	Ref.No.	Supply Voltage
WT642XA	W605506	20V to 240V AC, 12V to 240V DC

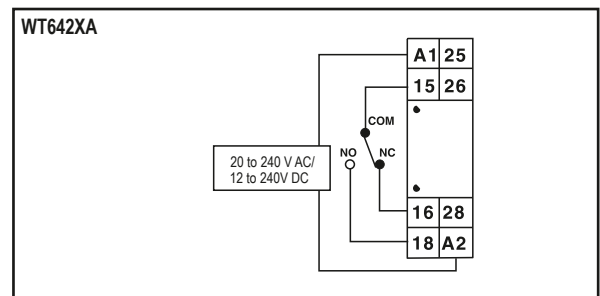
Features :

- * ON delay / Interval
- * Dual Supply Voltage
- * LED Indications : Power ON, Relay ON
- * Finger Safe Terminals

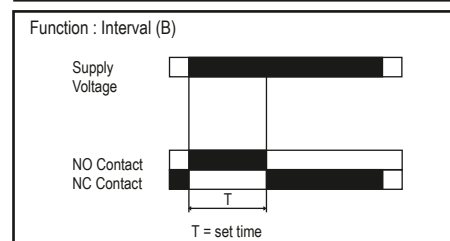
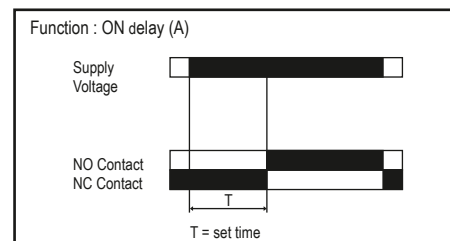
Dimensions



Terminal Connections



Timing Diagram



22.5mm DIN Rail Timer WDPO800



DIN 22.5mm

1

Switchboard Accessories

Features :

- True Power OFF Delay
- LED Indications : Power ON
- Finger Safe Terminals

Display Specifications

LED Indications	Power ON
-----------------	----------

Input Specifications

Accuracy	Setting: $\pm 10\%$ of F.S. Repeat: $\pm 2\%$ or 100msec whichever is greater (F.S. = Full Scale)
----------	--

Output Specifications

Relay Contact	2 C/O DPDT
Contact Rating	2.5A @ 250V AC / 28V DC, Resistive load $\pm 10\%$ for both V & I

Functional Specifications

Modes	True Power OFF Delay
Time Ranges	180sec
Reset	On power interruption, Reset time < 100msec

Auxiliary Supply Specifications

Supply Voltage	110 to 240V AC / DC (50 / 60Hz) -15% to 10% tolerance
Power Consumption	2.5VA max

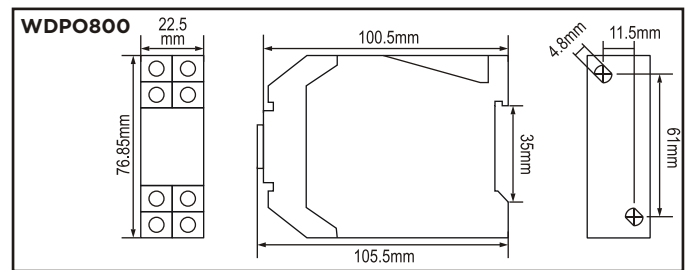
Environmental Specifications

Temperature	Operating: 0 to 50°C (32 to 122°F) Storage: -20 to 75°C (-4 to 167°F)
Humidity (non - condensing)	95% RH

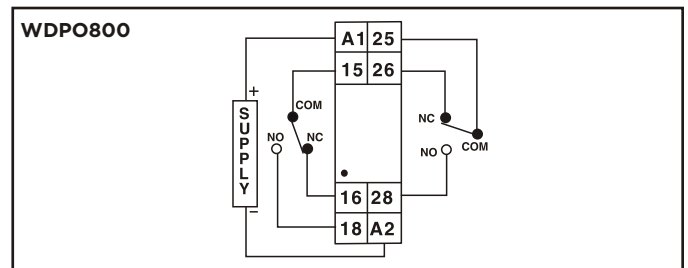
Mechanical Specifications

Mounting	DIN Rail Mount
Weight	115gms

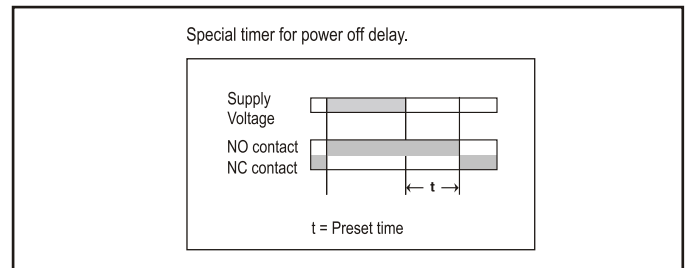
Dimensions



Terminal Connections



Timing Diagram



Ordering Information

Product Code	Ref.No.	Supply Voltage
WDPO800-180S	W605795	

17.5 mm DIN Under Voltage Timer Relay WVTR642-3

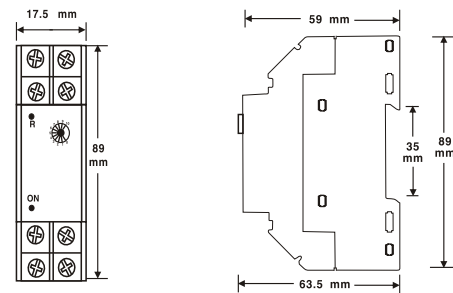


Features:

- Slim space saving design
- Din rail / screw mounting
- Finger guards for safety

Size: DIN 17.5mm

Dimensions



Symmetrical 35mm Din Rail (EN50022) Mounting

Technical Specifications

Input Specifications

Accuracy	Setting: $\pm 5\%$ of Full Scale Repeat: $\pm 0.5\%$ or 50 ms
Reset	On interruption of power; Reset time < 200 msec

Output Specifications

Output Contact	1 C/O (SPDT)
Contact Rating	5A @ 230V AC / 24V DC, resistive

Functional Specifications

Modes	Under voltage time relay (ON delay)
Time Ranges	5 to 15 min
LED Indications	Power ON, Relay ON

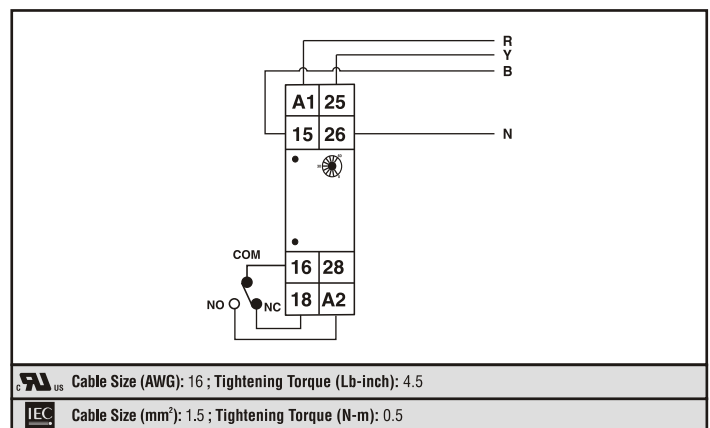
Supply Voltage

Supply Voltage	1 \emptyset /2W 180 - 270V AC (L-N) 50/60Hz 3 \emptyset /4W 380 - 415VAC (L-L) 50/60Hz
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Environmental Specifications

Temperature	Operating: 0 to 50°C Storage: -20 to 75°C
Humidity (non-condensing)	95% RH
Weight	60 gms

Terminal Connections



UL Cable Size (AWG): 16 ; Tightening Torque (Lb-inch): 4.5

IEC Cable Size (mm²): 1.5 ; Tightening Torque (N-m): 0.5

Ordering Information

This product is available in certified (UL and CE) as well as in non-certified (without UL/CE marking) types. Please order as per the requirement.

Product Code	Ref.No.	Supply Voltage
WVTR642-1	W606177	1 \emptyset /2W 180 - 270V AC (L-N) 50/60Hz
WVTR642-3	W606178	3 \emptyset /4W 380 - 415VAC (L-L) 50/60Hz

Protection Relays

WTCPR900-3

1

Switchboard Accessories



35mm wide
Rail Mount

Technical Specifications

Display

Display	Liquid Crystal Display
Digits	3

Input Specifications

Functions	
Measurements	Current, Current Asymmetry
Time Settings	Power ON delay, response delay, delay on release
Alarm Indications	Trip
Latching	Selectable
Reset	Auto / Manual
Network	
AC network	1Ø-2W 3Ø-3W 3Ø-4W
Auxiliary Supply	
Supply Voltage (factory set)	110V / 230V AC ±15%
Frequency	45 - 65Hz
VA Rating	12VA max
CT Settings	
CT Primary	1A/5A - 999A
CT Secondary	1A / 5A (selectable)
Current Rating	
Measuring Range (RMS Value)	0 - 1.19kA
Trip Settings	
Under Current Protection	0 - 999A
Over Current Protection	0.5A - 1.19kA
Current Asymmetry	5.0 - 99.9% A
Delay	
Power ON Delay	0.5 - 99.9sec
Trip Time Delay	0 - 99.9sec
Delay on Release	0 - 99.9sec
Response Time	<200ms

Features:

- Under current, Over current protection
- Current asymmetry protection (for 3Ø systems only)
- RMS value measurement
- Power ON delay, Trip time delay and Delay on release
- Adjustable switching hysteresis
- One alarm relay with NC or NO operation selectable

Hysteresis

Current	0.1 - 99.9A (Depends on CT Setting)
---------	--

Resolution

Current	0.01, 0.1, 1A, 0.01kA (Depends on CT Setting)
---------	--

Accuracy

Current	±1% of CT Setting, ±2 digits
Time (Recovery Time, Trip delay, Power ON Delay)	±5% of CT Setting + 200ms

Output Specifications

No. of Relays	1
Type of output	1C/O (SPDT)
Relay Rating	NO : 5A, 250V AC NC : 3A, 250V AC

LED Indication

LED1 (Green)	Power ON
LED2 (Red)	Trip

Environmental Specifications

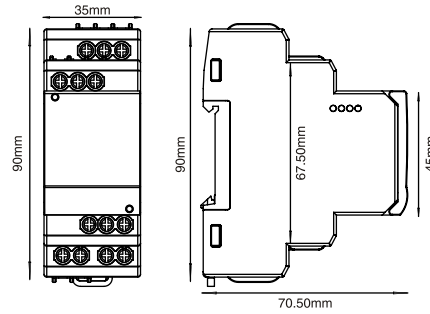
Temperature	Operating Temperature: 0°C to +50°C Storage Temperature : -20°C to +70°C
Humidity (non-condensing)	Upto 95% RH
Pollution Degree	2
Degree of protection	IP50 Faceplate IP30 Housing IP20 Terminals

Protection Relays WTCPR900-3

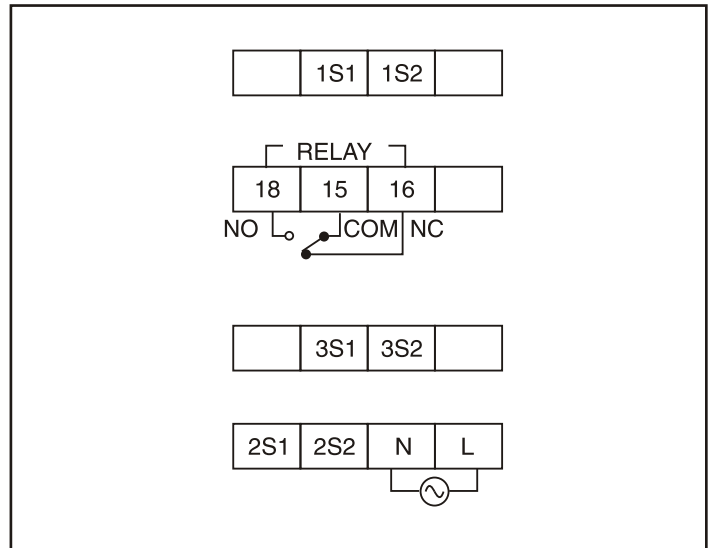
Mechanical Specifications

No. of Push Button	3
Size	35mm width
Mounting	Din Rail Mount
Weight	146 g
Conductor cross section (Solid)	1 x (0.5 to 4) Sq mm
Conductor cross section sleeved (Stranded)	2 x (0.5 to 1.5) Sq mm 1 x (0.5 to 2.5) Sq mm
Screw tightening torque	0.5 Nm

Dimensions



Terminal Connections



Ordering Information

Part No.	Supply Voltage	Ref.No.
WTCPR900-3-110V	110V AC	W605448
WTCPR900-3-230V	230V AC	W605449

Protection Relays

WTCPR900-1-1-BL



Features:

- 1Ø - 2 Wire Input
- Monitors Under current & Over current
- True RMS measurement
- Power ON delay, Trip time delay and Recovery time delay
- Adjustable switching hysteresis
- One alarm relay with NC or NO operation selectable
- LCD with backlight
- DIN Rail Mount

Size: 35mm (Width)

Certifications:  RoHS

Technical Specifications

Display

Display	Liquid Crystal Display with backlight
Digits	3

Input Specifications

Functions	
Measurements	Under current and Over current
Time Settings	Power ON delay, Trip time delay, Recovery time delay
Alarm Indications	Trip
Latching	Selectable
Reset	Auto / Manual (Selectable)
Electrical Connection	
	1Ø-2 wire
Auxiliary Supply	
Supply Voltage	230V AC; ±15%
Frequency	45 - 65Hz
VA Rating	15VA max.
CT Settings	
CT Primary	1A/5A - 999A (selectable)
CT Secondary	1A / 5A (selectable)
Current Rating	
Measuring Range (RMS Value)	0 - 1.19kA
Trip Settings	
Under Current	0 - 999A
Over Current	0.5A - 1.19kA
Trip Time Settings	
Power ON Delay	0.5 - 99.9sec
Trip Time Delay	0 - 99.9sec
Recovery Time Delay	0 - 99.9sec (In auto reset mode)
Response Time	<200ms

Hysteresis

Current 0.1 - 99.9A

Resolution

Current 0.01, 0.1, 1A, 0.01kA (depends on CT setting)

Accuracy

Current ±1% of Setting ±2 digits

Time Setting Accuracy ±5% of Setting ± 200ms

Output Specifications

No. of Relays	1
Type of output	1C/0 (SPDT)
Relay Rating	NO : 5A, 250V AC NC : 3A, 250V AC

LED Indication

LED1 (Red)	Relay (Continuously ON after trip)
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Environmental Specifications

Temperature	Operating Temperature: 0°C to +50°C Storage Temperature : -20°C to +70°C
Humidity (non-condensing)	Upto 95% RH
Pollution Degree	2
Degree of protection	IP50 Faceplate IP30 Housing IP20 Terminals

Protection Relays WTCPR900-1-1-BL

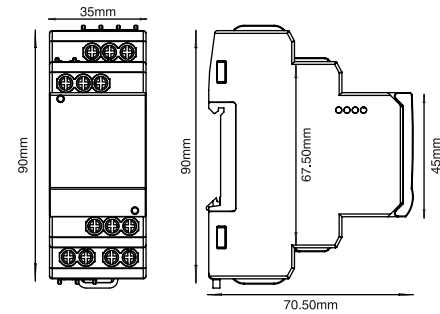
Mechanical Specifications

No. of Push Button	3
Size	35mm (width)
Mounting	Din Rail Mount
Weight	130gms
Conductor cross section (Solid)	1 x (0.5 to 4) Sq mm
Conductor cross section sleeved (Stranded)	2 x (0.5 to 1.5) Sq mm 1 x (0.5 to 2.5) Sq mm
Screw tightening torque	0.5 Nm

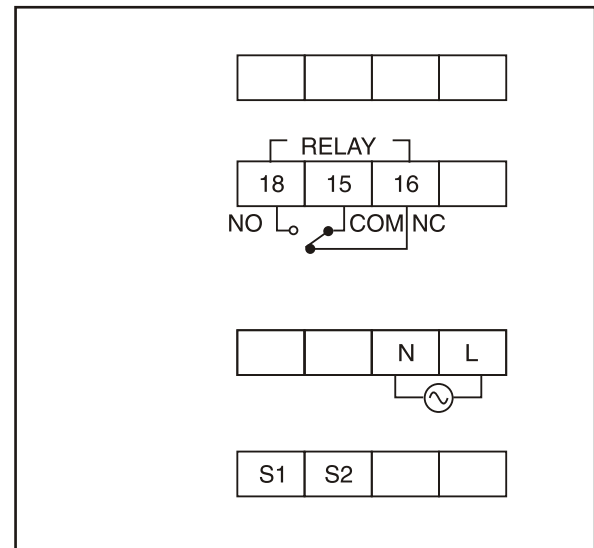
EMC

Electromagnetic compatibility	IEC 61326-1
ESD Immunity: IEC 61000-4-2	Level III
Surge Immunity: IEC 61000-4-5	+/- 2 kV common mode, +/- 1 kV differential mode
Radiated Susceptibility: IEC 61000-4-3	Level III, 80 to 1000MHz Level II, 1GHz to 2GHz Level I, 2GHz to 2.7GHz
Conducted Susceptibility: IEC 61000-4-6	Level II
Voltage Dips and Interruption: IEC 61000-4-11	Dips: 0% residual voltage/1 cycle (Crit A), 40% residual voltage/10 cycles 50 Hz / 12 cycles 60 Hz (Crit A) 70% residual voltage / 25 cycles 50 Hz / 30 cycles 60 Hz (Crit C) Interruptions: 0% residual voltage / 250 cycles 50 Hz / 300 cycles 60 Hz (Crit C)
Conducted Emissions	CISPR-11 & IEC 61000-6-3
Radiated Emissions	CISPR-11
Electrical Fast Transient: IEC 61000-4-4	Level 3.

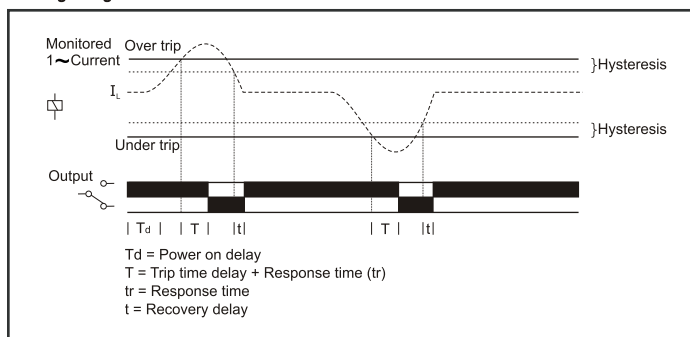
Dimensions



Terminal Connections



Timing Diagram



Ordering Information

Part No.	Supply Voltage	Ref.No.	Certification
WTCPR900-1-1-BL	230V AC	W605450	CE RoHS

Protection Relays WT900VPR-2



35mm wide
Rail Mount

1

Switchboard Accessories

Technical Specifications

Display

Display	Liquid Crystal Display
Digits	3

Input Specifications

Functions	
Measurements	Voltage (V_{L-N} , V_{L-L}), Frequency, Phase Asymmetry, Phase Failure, Phase Sequence
Time Setting	Power ON delay, Trip time delay and Delay on release
Alarm Indications	Trip
Latching	Selectable
Reset	Auto / Manual reset
Electrical Connection	
	3Ø-3 wire, 3Ø-4 wire
Auxiliary Supply	
Supply Voltage	Self powered
Operating Range	280 - 520V AC (L-L) 160 - 300V AC (L-N)
VA Rating	30VA max.
Frequency	45 - 65Hz
Measuring Range	
(RMS Value)	0 - 520V AC (L-L)* 0 - 300V AC (L-N)*
Trip Settings	
Under Voltage	280 to 520V AC (L-L) [for 3Ø-3 wire] 160 to 300V AC (L-N) [for 3Ø-4 wire]
Over Voltage	280 to 520V AC (L-L) [for 3Ø-3 wire] 160 to 300V AC (L-N) [for 3Ø-4 wire]
Under Frequency	45 - 65Hz
Over Frequency	45 - 65Hz
Phase Failure	Yes
Phase Sequence	Yes
Phase Asymmetry	5.0 - 99.9%

* For 3Ø-3W, at least 2 phase must be present ; * For 3Ø-4W, at least 1 phase must be present

Features:

- Under voltage, over voltage, under frequency, over frequency, asymmetry, phase failure and phase sequence monitoring in 3Ø system
- RMS measurement
- Power ON delay, Trip time delay and Delay on release
- Adjustable switching hysteresis
- Two separate alarm relays

Certifications: 

Input Specifications

Trip Time Settings	
Power ON Delay	2 - 99.9sec
Trip Time Delay	0 - 99.9sec
Delay on Release	0 - 99.9sec
Response Time	<200ms
Hysteresis	
Voltage	1.0 - 99.9V
Frequency	0.2 - 2Hz
Asymmetry	2 - 20%
Resolution	
Voltage	1V
Frequency	0.1Hz
Accuracy	
Voltage	±1%
Frequency	±0.3Hz
Time (Recovery Time, Trip Delay, Power ON Delay)	±5% of setting + 200ms

Output Specifications

No. of Relays	2
Type of output (Relay1)	1C/O (SPDT)
Type of output (Relay2)	1C/O (SPDT)
Relay Rating	NO : 5A @ 250V AC NC : 3A @ 250V AC

LED Indication

LED1 (Green)	Power ON
LED2 (Red)	Relay1 (Continuously ON after trip)
LED3 (Red)	Relay2 (Continuously ON after trip)

Protection Relays

WT900VPR-2

Environmental Specifications

Ambient Temperature	Operating Temperature: 0°C to 50°C Storage Temperature : -20°C to +70°C
Humidity (non-condensing)	95% RH
Pollution Degree	2
Degree of protection	IP50 Faceplate IP30 Housing IP20 Terminals

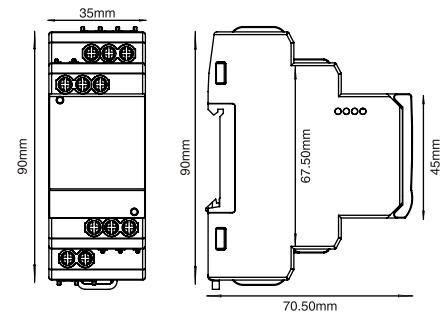
Mechanical Specifications

No. of Push Button	3
Size	35mm width
Mounting	Din Rail Mount
Weight	135 g
Conductor cross section (Solid)	1 x (0.5 to 4) Sq mm
Conductor cross section sleeved (Standard)	2 x (0.5 to 1.5) Sq mm 1 x (0.5 to 2.5) Sq mm
Screw tightening torque	0.5 N-M

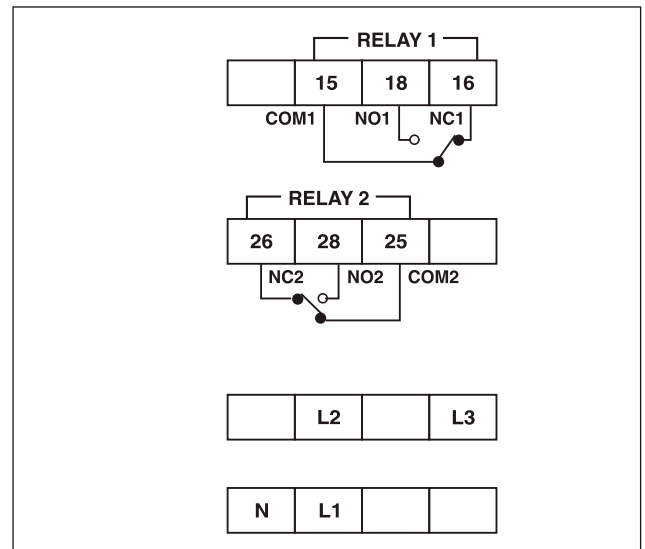
EMC

Electromagnetic compatibility	IEC 61326-1
ESD Immunity: IEC 61000-4-2	Level III
Surge Immunity: IEC 61000-4-5	+/- 2 kV common mode, +/- 1 kV differential mode
Radiated Susceptibility: IEC 61000-4-3	Level III, 80 to 1000 MHz
Conducted Susceptibility: IEC 61000-4-6	Level II
Voltage Dips and Interruption: IEC 61000-4-11	Dips: 0% residual voltage/1 cycle (Crit B.), 40% residual voltage/10 cycles 50 Hz / 12 cycles 60 Hz (Crit C) 70% residual voltage / 25 cycles 50 Hz / 30 cycles 60 Hz (Crit C) Interruptions: 0% residual voltage / 250 cycles 50 Hz / 300 cycles 60 Hz (Crit C)
Conducted Emissions	CISPR-11 & IEC 61000-6-3
Radiated Emissions	CISPR-22
Electrical Fast Transient: IEC 61000-4-4	Level 3.

Dimensions



Terminal Connections



Ordering Information

Part No.	Ref.No.	Supply Voltage	Certification
WT900VPR-2-280/520V	W605507	280-520V AC	CE Yes

Westinghouse TYPE FUSE & FUSE HOLDER

Fuse Switch Connector & Fuse with visual tripping indicator

Fuse 500 Volt IEC 60269, from 1A-63A

1
Switchboard Accessories



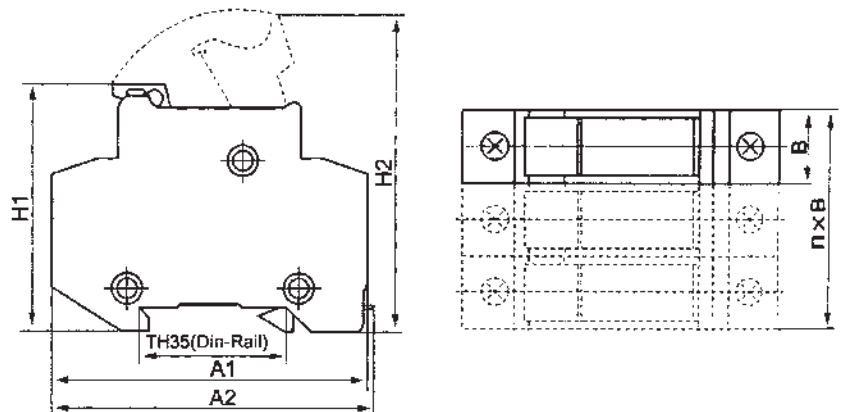
Fuse

Rating	Part No.	Ref. No.
1	WFC01	W604133
2	WFC02	W604134
4	WFC04	W604135
6	WFC06	W604136
8	WFC08	W604137
10	WFC10	W604138
13	WFC13	W604139
16	WFC16	W604140
20	WFC20	W604141
25	WFC25	W604142
32	WFC32	W604143
40	WFC40	W604144
50	WFC50	W604145
63	WFC63	W604146

Fuse Holder

Part No.	Ref. No.	Description
WFH101	W604147	Fuse holder 1P
WFH201	W604148	Fuse holder 2P
WFH301	W604149	Fuse holder 3P

Dimensions



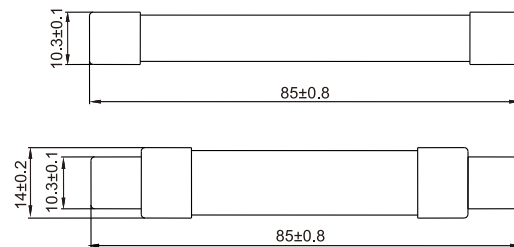
DC Fuse , Fuse Holder WFDC-32L,63L 1500V DC 1A-50A



FEATURES

- STANDARD: IEC60269-6,
- BREAKING CAPACITY: 50kA
- CONSTRUCTION
 - Cylindrical
 - With forced arc extinguishing characteristics

DIMENSIONS (mm)



1NDISSIPATIVE POWER TABLE OF FUSE LINK

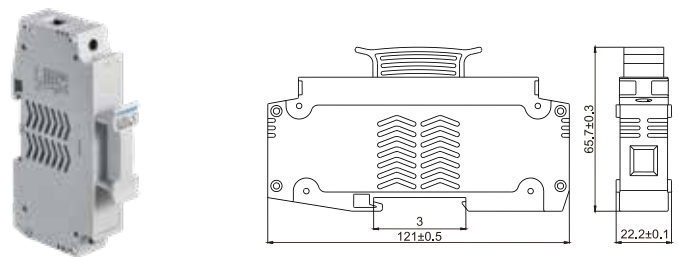
Type	Ref.No.	Max. Rating	Rated Current (A)	Watts Loss 1h(W)	Energy Integrals I ² t(A ² S)	
					Pre-Arcing I ² t	Total I ² t
WFDC-32L/1A	W607736	Max 35A	1	2.1	2.3	3.1
WFDC-32L/2A	W607737		2	2.3	7.4	10
WFDC-32L/3A	W607738		3	2.5	13.0	18
WFDC-32L/4A	W607739		4	2.5	27.0	37
WFDC-32L/5A	W607740		5	2.5	41.0	56
WFDC-32L/6A	W607741		6	2.6	58.0	79
WFDC-32L/8A	W607742		8	2.8	11.0	82
WFDC-32L/10A	W607743		10	3.0	19.0	144
WFDC-32L/12A	W607744		12	3.1	33.0	246
WFDC-32L/15A	W607745		15	3.5	59.0	432
WFDC-32L/16A	W607746		16	4.0	63.0	460
WFDC-32L/20A	W607747		20	4.5	112.0	822
WFDC-32L/25A	W607748		25	4.6	197.0	1440
WFDC-32L/30A	W607749		30	5.4	304.0	2220
WFDC-32L/32A	W607750		32	6.2	325.0	2370
WFDC-32L/35A	W607751		35	4.5	390.0	2844
WFDC-63L/15A	W607752		Max 50A	15	59.0	432.0
WFDC-63L/16A	W607753	16		63.0	460.0	4
WFDC-63L/20A	W607754	20		112.0	822.0	4.5
WFDC-63L/25A	W607755	25		197.0	1440.0	4.6
WFDC-63L/30A	W607756	30		304.0	2220.0	5.4
WFDC-63L/32A	W607757	32		325.0	2370.0	6.2
WFDC-63L/35A	W607758	35		390.0	2844.0	7.5
WFDC-63L/40A	W607759	40		450.0	3250.0	8.6
WFDC-63L/45A	W607760	45		510.0	3660.0	9.7
WFDC-63L/50A	W607761	50		560.0	4160.0	10.7

TECHNICAL PARAMETERS

Fuse link Type gPV	Rated Voltage(V)	Rated Current(A)	Dimensions (mm)	Watts Loss(w)
WFDC-32L	DC1500V	1,2,3,4,5,6,8,10,12,15,16,20,25,30,32,35	10x85	≤7
WFDC-63L	DC1500V	15,16,20,25,30,32,35,40,45,50	14x85	≤12

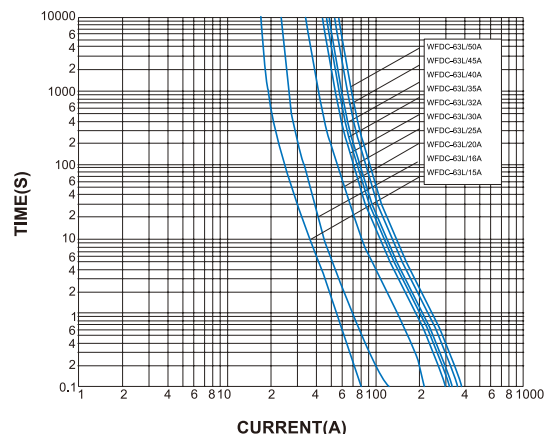
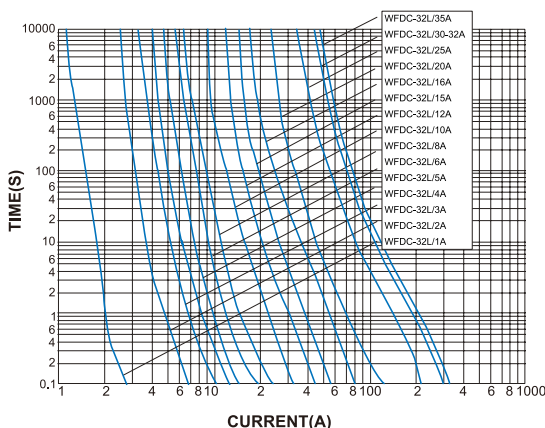
PV FUSE HOLDER

Fuse Holder Type	Re.No	Fuse Link size	Rated Voltage	Rated Current	Watts Loss
WFHDC-63LD	W607762	10/14x85	1500Vdc	50A	12.5W



Time Current curve WFDC-63L

Time Current curve WFDC-32L



WWLAD16 Indicator Lamps Series

Scope of application

WLAD16 series indicator lamps are light sources with high brightness solid color LED light-emitting chips. They have long service life, low energy consumption, small size and light weight. They are the updated products of XD type incandescent lamps and neon bubble lamps. WLAD16-16c, D type, WLAD16-22b type, C type, D type, E type, H type, two-color lamp, flash buzzer and ultra-short type indicator lamp, which are successively launched by our factory, are characterized by high brightness, good reliability, beautiful appearance and exquisite production, and are generally praised by the majority of users, and are adopted with WLAN38 Series button style consistent appearance design, with good impact resistance, built-in screw type wiring, more safe, convenient, all improvements will make your selection more convenient, design more perfect.

WLAD16 series indicator light is Sheet for indicating signal, warning signal, accident signal and other indicating signals in the circuit of electric power, telecommunication, machine tool, ship, textile, printing, mining machinery and other equipment.

This series of signal lamps conform to GB 14048.5 and IEC 60947-5-1 standards, and the products have passed the national compulsory CCC certification.

Explanation of Model

WLAD16 - □ □ □ □ / □ □					
Indicator Lamps	Neck size : 16: 16mm	C: Plug type D: Screw type	S: Short type N/A: Long type	Working voltage 21- AC.DC6V 22- AC.DC12V 23- AC.DC24V 24- AC.DC36V 25- AC.DC48V 26- AC.DC110V 27- AC.DC127V 28- AC.DC220V 31- AC220V 32- AC380V	
	22: 22mm 30: 30mm	SS: Double color lamp FM: Alarm SM: Flash alarm S: Flash lamp	S: Short type N/A: Long type		Color R-Red G-Green Y-Yellow B-Blue W-White K-Black
		B: Flat head inner screw high lampshade C: Concentric toroidal lampshade with convex arc surface D: Flat head outer short lampshade E: Cylindrical lampshade with 8 equal parts unit point F: Square lampshade H: Cylindrical lampshade			
		SS: Double color lamp FM: Alarm SM: Flash alarm S: Flash lamp	B: Flat head inner screw lampshade D: Flat head outer lampshade		
	DZ: Indicator lamp type voltage meter			AC60V~AC440V	

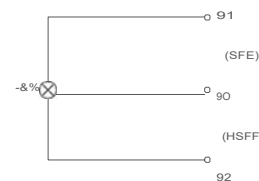
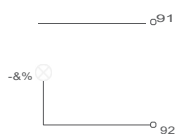
Main technical parameters

- Power frequency withstand voltage: 2.5kV(AC effective value), 1min;
- Insulation resistance $\geq 2M\Omega$;
- Allowable voltage fluctuation of AC indicator $\pm 20\%$;
- Continuous working life: ≥ 30000 Hours
- Brightness: $\geq 100cd/m^2$;
- CTI ≥ 100 ;
- Head protection class: IP65 Customized IP67;
- Rated frequency: 50~60Hz.

Suitable environment

- Ambient temperature: $-25^{\circ}C \sim +55^{\circ}C$;
- Air relative humidity $\leq 98\%$;
- It can work Generally when the vibration frequency is 2-80hz and the acceleration is 0.7G;
- The pollution level is level 3, and the installation category is level III;
- Those with "TH" mark can work in humid tropical environm

Connection way



Warning: the wiring of the two-color lamp shall not be wrong. X1 and X2 cannot form a circuit, otherwise the signal lamp will be burnt out.



WLAD16-16C/CS



WLAD16-16D/DS



WLAD16-22B/BS



WLAD16-22C/CS



WLAD16-22D/DS



WLAD16-22E/ES



WLAD16-22H/HS



WLAD16-22SM



WLAD16-22SS



WLAD16-22DZ



WLAD16-77*31(White)

WLAD series warning lights

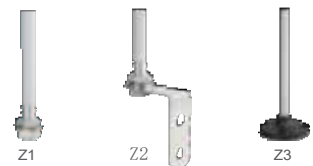
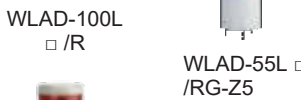
Summary

WLAD series warning lights are complete in variety, 40mm, 50mm, 60mm, 80mm and 100mm in diameter, and sound light integrated warning light, single light and sound light integrated single light in function. The light source adopts LED high brightness lamp beads, which saves electric energy, has low heat output and does not need maintenance. The volume of the sound generating unit can reach more than 80 decibels at 10cm, which can transmit sound and light signals well even in the place with large working space. Widely used in electric power, machinery, metallurgy, industry and mining, security, transportation, water treatment, food, packaging, construction, port, textile, fire protection, aviation and dozens of other industries.

Standard: GB 24965.

Explanation of Model

WLAD -						
warning lights code	Diameter 40: 40mm 52: 52mm 55: 55mm 70: 70mm 100: 100mm	Light mode: L: constant light C: flash Z: roll light Warning: constant light don't suit for interruption	Alarm mode : C: continue L: interruption	Color: R-Red G-green Y-Yellow B-Blue W-White Multi layer: color arrangement Fill in from bottom to top	Installation method: Z1- Vertical installation Z2- Side installation Z3- With pole black bottom dish Z4- Without pole high bottom dish Z5- 3PCS screws Z6- Without pole short bottom dish Note: only Z4, z4.1 and Z8 suit for 70mm base	Working voltage: 22- AC.DC12V 23- AC.DC24V 26-AC.DC 110V 31-AC 220V
XL - warning lights code	Mechanical: MS190	Electronic: BJ1				



Product features

1. The shell is made of imported polycarbonate engineering plastics with bright color, high strength and good light transmittance;
2. Integrated light-emitting elements, reliable performance, long life;
3. Modular structure, simple installation and wide selection range;
4. The installation and wiring are simple, the installation mode is diversified, there are many kinds of installation and fixing brackets, which can be applied to any application environment.

Technical requirement

1. Flash model: 140-60 times / min
2. Product can be equipped with buzzer, volume: above 85dB
3. Material: lampshade-pc, base-abs, strut-al
4. Ambient temperature: - 20 °C ~ + 70 °C
5. Ambient humidity: ≤ 90%
6. Wind resistance: 150km / h
7. Power frequency withstand voltage: ac2500v 10, rated frequency: 40Hz ~ 60Hz
8. Rated insulation voltage: AC690V 11, protection grade: IP54
9. Maximum voltage fluctuation: ± 10% UE 12, altitude: ≤ 2000m

Selection principle

- According to the purpose of use, working principle and other factors, the following factors should be mainly considered in the selection of warning lights.
1. The brightness of the surrounding light;
 2. The distance from the observation point;
 3. Life and cost of light source;
 4. Noise level and pollution level of the use environment, and whether there is strong vibration or impact;
 5. The degree of influence brought by sudden problems such as light source damage and safety;
 6. Ease of use and maintenance.



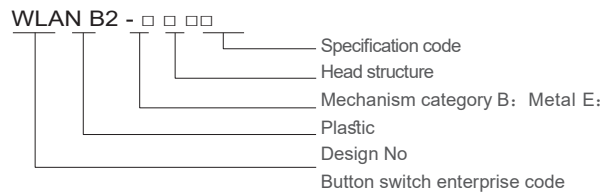
WLANB2 series button switch

Scope of application

The WLANb2 series button switch is applicable to the control circuit or auxiliary circuit with AC 50Hz or 60Hz, voltage up to 380V and DC voltage up to 220V. It is used for circuit conversion and switch on mechanical equipment. This series of button switch has the advantages of superior performance, high operation reliability and long service life. The shape is small and exquisite, beautiful and generous. It is widely used in machine tool, ship, textile, light industry, electric power and other industries.

This series of button switches conform to GB 14048.5 and IEC 60947-5-1 standards.

Explanation of Model



Head structure	Specification code		
A: Flat button (with sign)	Sign code (See Sheet 1)		1: NO 2: NC 3: two NO 4: two NC 5: NO+NC
A: Flat button C: Φ40 mushroom self-reset button R: Φ60 mushroom self-reset button P: Button with waterproof cover T: Push & pull emergency button L: Convex head button Z: Self-lock flat button	1: White 2: Black 3: Green 4: Red 5: Yellow 6: Blue		
S: Mushroom self-lock rotation reset button(emergency button)	4: Φ30 5: Φ40 6: Φ60	4: Red	2: NC
S1: Emergency button with key D : Short handle button J : Long handle button G : Key button	2: 2 position lock 3: 3 position lock 4: 2 position right self-reset 5: 3 position left&right self-reset 7: position left self-reset 8: position right self-reset	---	1: NO 2: NC 3: two NO 4: two NC 5: NO+NC
K: Rotation button with lamp	1: White 4: Red 6: Blue	3: Green 5: Green 7: Transparent	6: Direct type
L8: Double position button (without lamp)	3: 4: General button + high button	2: Red+ Green	5: NO+NC
W3: Button with lamp	1: White 3: Green 5: Green 7: Transparent	4: Red 6: Blue	6: Direct type 1: NO 2: NC 3: two NO 4: two NC 5: NO+NC
W8: Double position button with lamp	3: General button 4: Flat button + high button	6: Direct type	5: NO+NC
V: Indication lamp	6: Direct type 7: Resistance type	1: White 3: Green 5: Green Blue	4: Red 6: Blue ---
V1: Economical Indication lamp (plastic head)	6: Direct type	1: White 3: Green 5: Green Blue	4: Red 6: Blue ---
E: Fittings	101: NO contact group 102: NC contact group	---	---

Sign code Sheet 1

131	331	136	336	432	232	335	334	234	434

Lamp Indicator

22.5mm Integrated LED Pilot Lamps have a aesthetic compact, rigid construction design ensure reliable trouble free performance conforming to IEC947-5.



FEATURES

- Dual chip LED for consistent glow intensity
- Service life 100,000 hours
- Choice of 4 colours

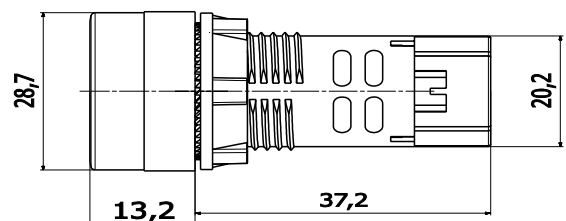
SPECIFICATION:

Specification	
Standards	IEC947-5
Voltage	12V,24V,4SV AC/DC, 110V,240V AC. 110V, 220V DC. Universal,
Current Consumption (mA)	20 -270V AC/DC
12V ,24V, 4SV AC/DC	25mA (max)
110V,240VAC	17mA (max)
110V DC	12mA (max)
220VDC	0SmA(max)
Service Life (at nominal voltage, ambient temp.of 25°C)	100,000 Hours ±20 % of rated voltage.
Operating Voltage Limits	
Service Temperature	- 25°C to +70 °C
Storage	- 25°C to +55°C
Operation	
Power consumption at nominal voltage (W)	0.50W
12V,24V,4SV AC/DC	1.25 W
110V AC	3.80W
240V AC	1.25 W
110V DC	1.45 W
220V DC	< 1.5 W
Universal	2.5kV for 1 minute
Dielectric Strength	IP30 fo rterm in als,IP65 (Top surface of indicators)
Ingress Protection	Screw Clamp Terminals
Terminal capacity	Min:1 x 0.5 Sqmm Max:2x 1.5Sqmm,lx2.5Sqm

Ordering Code

Cat.No	Ref.No.	Description
WILR230AC	W607763	RED INDICATION LAMP 230V AC, 22.5mm
WILY230AC	W607764	YELLOW INDICATION LAMP 230V AC, 22.5mm
WILG230AC	W607765	GREEN INDICATION LAMP 230V AC, 22.5mm
WILA230AC	W607766	AMBER INDICATION LAMP 230V AC, 22.5mm
WILB230AC	W608805	BLUE INDICATION LAMP 230V AC, 22.5mm
WILR230DC	W607767	RED INDICATION LAMP 230V DC, 22.5mm
WILY230DC	W607768	YELLOW INDICATION LAMP 230V DC, 22.5mm
WILG230DC	W607769	GREEN INDICATION LAMP 230V DC, 22.5mm
WILA230DC	W607770	AMBER INDICATION LAMP 230V DC, 22.5mm
WILB230DC	W608806	BLUE INDICATION LAMP 230V DC, 22.5mm

Dimension





Worldwide



OUR PROMISE

Westinghouse is built upon a tradition of dependability and innovation.

Today, we strive to make everyday life a little better by offering a wide range of quality products and services you can trust.



WHY WESTINGHOUSE ?

Since 1886, Westinghouse has brought the best to life. Today, Westinghouse Electric Corporation remains a trusted name globally in consumer and industrial products. Built on a heritage of innovation and entrepreneurial spirit. Today, Westinghouse continues to grow its diverse portfolio, which includes a wide range of product categories, including home appliances, consumer electronics, power generation, Transmission & distribution and lighting.





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