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ENGLISH

Datasheet

Article No : 136-5381
Digital Multi-Function Meter 3 Line Display, 96x96, 3Ph, V A F & P

Article No : 136-5382
Digital Multi-Function Meter 3 Line Display, 96x96, 3Ph, V A F & P, with Limit Relay/Switch option

RS Pro



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RS Pro



- Fast & Easy Installation on panel with self clicking.
- True RMS measurement.
- Limit Switch (optional).
- 3 Line 4 Digits ultra bright LED Display (up to 9999).
- On site Programmable CT/PT Ratios.
- User selectable CT Secondary 1A/5A.
- User selectable PT Secondary from 100 VLL to 500 VLL.
- User selectable 3ph3wire / 3ph4wire / single phase Network.
- Two auxillary Power Supply available 40V – 300V AC DC or 12V-48V DC.
- Storage of MIN / MAX values.
- Measurement & Display of RPM, Run hours, On hours, No. of interruption.

RS Pro measures important electrical parameters in 3 phase 4 Wire and 3 phase 3 Wire Network & replaces the multiple analog panel meters. It measures electrical parameters like AC Voltage,AC Current, Frequency, Active, Reactive, Apparent Power & many more.

Product Features

On site programmable PT/CT ratios
It is possible to program primary of external potential Transformer (PT), primary of external Current Transformer (CT) on site via front panel keys by entering into Programming mode.

User selectable CT Secondary 5A/1A
The secondary of external Current Transformer (CT) can be programmed on site to either 5A or 1A using front panel keys.

User selectable PT Secondary
The secondary of external Potential Transformer (PT) can be programmed on site from 100VLL to 500VLL using front panel keys.

User can set the display in auto scrolling mode or fixed screen mode using front panel keys.

Onsite selection of Auto scroll / Fixed Screen
User can set the display in auto scrolling mode or fixed screen mode using front panel keys.

Low back depth
The instrument has very low back depth (behind the panel) of less than 55 mm (Without output option).

True RMS measurement
The instrument measures distorted waveform up to 15th Harmonic.

RPM Measurement
The instrument display Rotation per minutes for generator applications. Number of poles can be set on site depending upon application requirement.

Optional Limit switch (Relay)
The instrument will trip the relay if the programmed parameter exceeds the programmed Trip Limits.

3 line 4 digits LED display
Simultaneous display of 3 Parameters.

User selectable 3 phase 3Wire or 4Wire or Single phase Network
User can program on site the network connection as either 3 Phase 3 Wire or 4 Wire or single phase network using front panel keys.

Optional self-powered available, only on either 3 Phase 4 wire or single phase network are available on request.

Storage of parameters possible
The instrument stores minimum and maximum values for System Voltage, System Current, Run Hour, ON Hour & number of Interrupts. Every 60 sec stored values are updated.

Four function keys
Using the four function key, it is possible to go desired parameter screen instantly.

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Enclosure Protection for dust and water:
Conforms to IP 50 (for front face) & IP 20 (for back) as per IEC60529.

EMC Compatibility
Compliance to International standard IEC 61326.

- Interference Emission : IEC 61326-1 : 2005, Class A
- Interference Immunity : IEC 61326-1 : 2005
- Electrostatic discharge contact/air. (ESD) : IEC 61000-4-2 -- 4kV/8kV
- EM Field : IEC 61000-4-3 -- 10 V/m (80 MHz to 1 GHz) – 3 V/m (1.4 Ghz to 2 GHz) -- 1 V/m (2 GHz to 2.7 GHz)
- Burst : IEC 61000-4-4 -- 2 kV (5/50 ns, 5 kHz)
- Surge : IEC 61000-4-5 -- 1 kVLL / 2 kVLN.
- Conducted RF : IEC 61000-4-5 -- 3 V (150 kHz to 80 MHz)
- Rated Power Frequency magnetic Field : IEC 61000-4-8 -- 30 A/m
- Voltage dip : IEC 61000-4-11 -- 0% during 1 cycle. -- 40% during 10/12 cycles. -- 70% during 25/30 cycles.
- Short interruptions cycles. : IEC 61000-4-11 -- 0% during 25/30 cycles. 25 cycles for 50 Hz test. 30 cycles for 60 Hz test.

Technical Specifications

	Input Voltage:
Nominal input voltage (AC RMS)	Phase –Neutral 290V L-N , Line-Line 500V L-L
Max continuous input voltage	120% of rated value
Nominal input voltage burden	< 0.3 VA approx. per phase (For external auxiliary meter)
System PT secondary values	100VLL to 500VLL programmable on site.
System PT primary values	100VLL to 692kVLL programmable on site.
Input Current:	
Nominal input current	5A / 1A AC RMS
System CT secondary values	1A & 5A programmable on site.
System CT primary values	From 1A up to 9999A (for 1 or 5 Amp)
Max continuous input current	120% of rated value
Nominal input current burden	< 0.2 VA approx. per phase
Auxiliary Supply:	
AC DC External Aux	40 V – 300V AC-DC (± 5 %)
DC Auxiliary Supply	12V- 48V DC
Self powered	input voltage range from 80% to 100% of Rated value. (Self powered meter is available only in 3Phase 4 Wire and Single Phase network.) Auxiliary input is derived from Phase 1 (R phase)
Frequency range	45 to 65 Hz
VA burden	3 VA Approx.
DC burden	3W
Overload Withstand:	
Voltage	2 x rated value for 1 second, repeated 10 times at 10 second intervals
Current	20x rated value for 1 second, repeated 5 times at 5 min intervals

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Technical Specifications

Operating Measuring Ranges:	
Voltage Range With External Aux	10... 120% of rated value
Voltage Range With Self Power	80... 120% of rated value
Current Range	10 ... 120% of rated value
Frequency	45...65 Hz
Power Factor	0.5 Lead ... 1 ... 0.5 Lag
Reference conditions for Accuracy:	
Reference temperature	23°C +/- 2°C
Input waveform	Sinusoidal (distortion factor 0.005)
Input frequency	50 or 60 Hz ±2%
Auxiliary supply voltage	Rated Value ±1%
Auxiliary supply frequency	Rated Value ±1%
Voltage Range	20... 100% of Nominal Value.
Current Range	10... 100% of Nominal Value.
Power Power Factor / Phase Angle	Cos phi / sin phi = 1 for Active / Reactive Power respectively. 10... 100% of Nominal Current & 20... 100% of Nominal Voltage. 40... 100% of Nominal Current & 20... 100% of Nominal Voltage.
Accuracy:	
Voltage	±1.0% of Nominal value
Current	±1.0% of Nominal value
Frequency	0.5% of mid frequency
Active Power	±1% of Nominal value
Re-Active Power	±1% of Nominal value
Apparent Power	±1% of Nominal value
Power Factor	2 % of Unity
Phase angle	2 % of range
Measurement error is normally much less than error specified above. Variation due to influence quantity is less than twice the error allowed for reference condition.	
Limit Switch (Relay):	
Switching Voltage & Current for Relay	240 VDC ,5 A (1NO+1NC)
Influence of Variations:	
Temperature coefficient : (for rated value range of use (0...50°C)) 0.05%/°C for Current	0.025%/°C for Voltage
Display update rate:	
Response time to step input	1 sec approx.
Applicable Standards:	
EMC	IEC 61326-1: 2005
Safety	IEC 61010-1-2001 , Permanently connected use
IP for water & dust	IEC60529

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Technical Specifications

Safety:	
Pollution degree:	2
Installation category:	III
High Voltage Test 3510V AC r.m.s	Enclosure Vs Power supply + All measuring input
(for 1 minute)	Power supply Vs All measuring input
2210V AC r.m.s,	Input Voltage Vs Input Current
Input Current Vs	Input Current
Environmental:	
Operating temperature	0 to +50°C
Storage temperature	-25°C to +70°C
Relative humidity	0... 90% non condensing
Warm up time	Minimum 3 minute
Shock	15g in 3 planes
Vibration	10... 55 Hz, 0.15mm amplitude
Enclosure:	
Front	IP 50.
Back	IP 20.
Dimensions and Weights:	
Bezel size	96 mm x 96 mm DIN 43 718.
Panel cut-out	92 +0.8 mm x 92 + 0.8 mm.
Overall depth	55 mm.(without output option)
Panel Thickness	1 - 3 mm for self clicking, 1 – 6 mm for swivel screws.
Weight	320 gm. Approx.(with output option)

Parameter measurement and Display

Sr No	Parameter	3 Phase 4 Wire	3 Phase 3 Wire	1 Phase 2 Wire
1	System Volts	✓	✓	✓
2.	System Current	✓	✓	✓
3.	Volts R–N (Phase Voltage for Single phase)	✓	×	✓
4.	Volts Y–N	✓	×	×
5.	Volts B–N	✓	×	×
6.	Volts R-Y	✓	✓	×
7.	Volts Y–B	✓	✓	×
8.	Volts B–R	✓	✓	×
9.	Current R (Phase Current for Single phase)	✓	✓	✓
10.	Current Y	✓	✓	×
11.	Current B	✓	✓	×
12.	Frequency	✓	✓	✓
13.	System Active Power (kW)	✓	✓	✓
14.	Active Power R (Phase Power for Single phase) (kW)	✓	×	✓
15.	Active Power Y (kW)	✓	×	×
16.	Active Power B (kW)	✓	×	×
17.	System Re-active Power (kVAr)	✓	✓	✓
18.	Re-active Power R (Phase Power for Single phase) (kVAr)	✓	×	✓
19.	Re-active Power Y (kVAr)	✓	×	×
20.	Re-active Power B (kVAr)	✓	×	×
21.	System Apparent Power (kVA)	✓	✓	✓

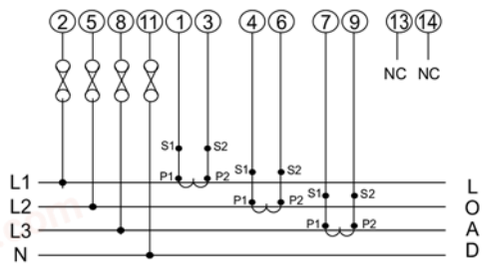
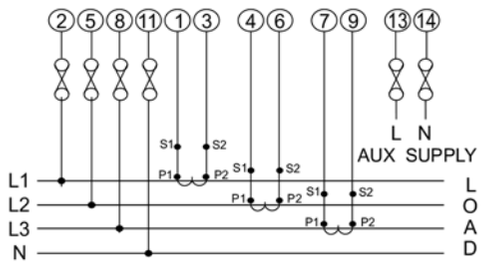
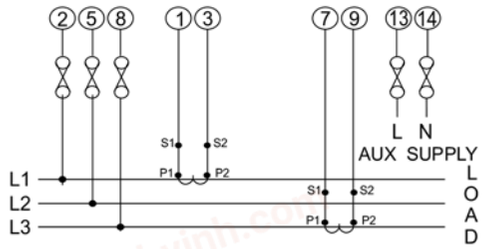
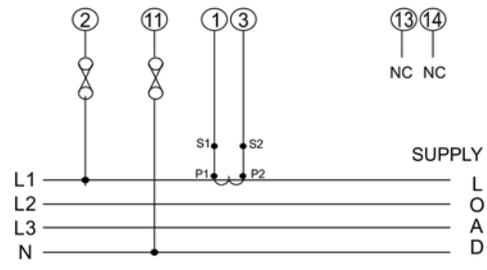
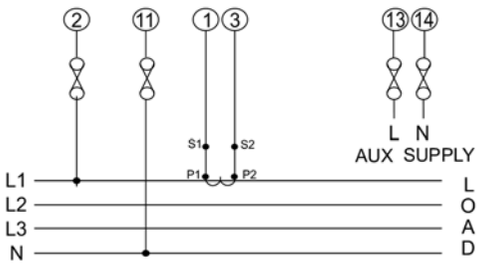
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Parameter measurement and Display

Sr No	Parameter	3 Phase 4 Wire	3 Phase 3 Wire	1 Phase 2 Wire
22.	Apparent Power R (Phase Power for Single phase) (kVA)	✓	×	✓
23.	Apparent Power Y (kVA)	✓	×	×
24.	Apparent Power B (kVA)	✓	×	×
25.	System Phase Angle	✓	✓	✓
26.	System Power Factor	✓	✓	✓
27.	Power Factor R	✓	×	✓
28.	Power Factor Y	✓	×	×
29.	Power Factor B	✓	×	×
30.	Phase Angle R	✓	×	✓
31.	Phase Angle Y	✓	×	×
32.	Phase Angle B	✓	×	×
33.	RPM	✓	✓	✓
34.	Max (System Voltage / System Current)	✓	✓	✓
35.	Min (System Voltage / System Current)	✓	✓	✓
36.	Hour Run	✓	✓	✓
37.	ON Hour	✓	✓	✓
38.	Number of auxinterrupt	✓	✓	✓

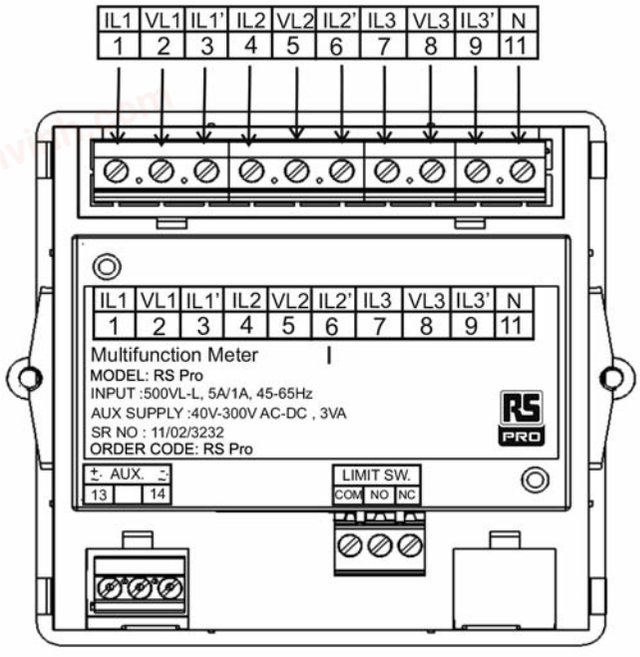
✓- Available × - Not available

Electrical Connections:

	Self Powered Aux	External Powered Aux
3 Phase 4 Wire Unbalanced Load		
3 Phase 3 Wire Unbalanced Load	**Not Applicable**	
1 Phase 2 Wire		

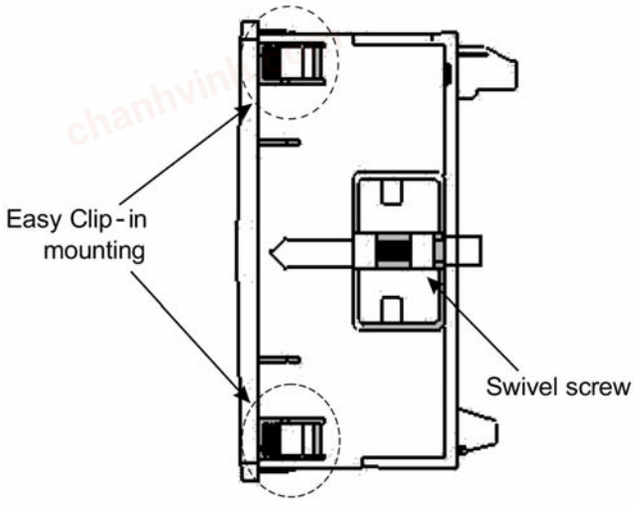
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Rear Connection

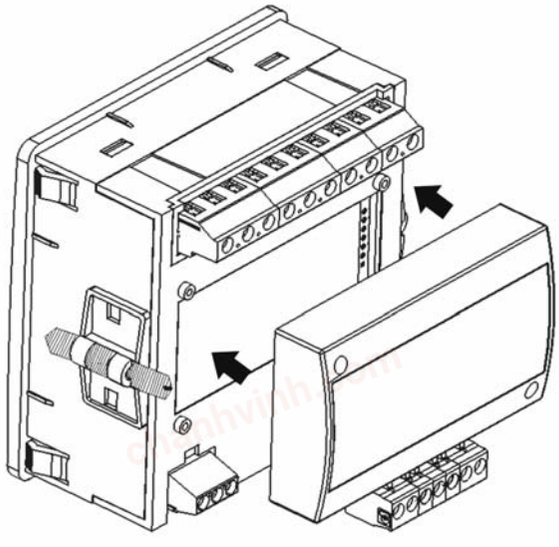


Installation

Easy Clip in Installation on Panel.



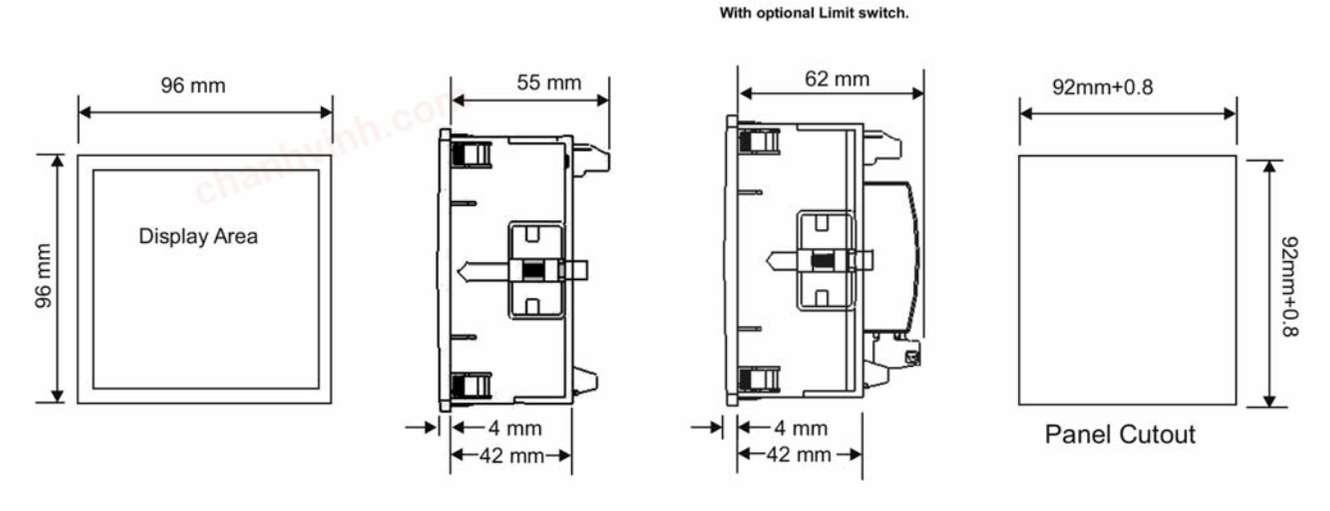
Panel Thickness : 1 - 3 mm for self clicking,
1 – 6 mm for swivel screws.



Optional Limit Switch pluggable module.

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Dimension Details



Order Code:

Article No: 136-5381
RS Pro 3 Line display Volts, Amp Frequency and Power, 96x96mm, 3 Phase 3/4W programmable onsite,
AC VAF + Power meter, 14mm display,
Input. 100-500VLL,
Input. 1 or 5 Amps AC,
Supply Voltage. 40-300V AC/DC auxiliary (Programmable CT/PT primary and secondary values)

Article No: 136-5382
RS Pro 3 Line display Volts, Amp Frequency and Power, 96x96mm, 3 Phase 3/4W programmable onsite,
AC VAF + Power meter, 14mm display,
Input. 100-500VLL,
Input. 1 or 5 Amps AC,
Supply Voltage. 40-300V AC/DC auxiliary (Programmable CT/PT primary and secondary values with Limit Switch/Relay O/P)