

Functions	Measurement range	Accuracy ⁽¹⁾	MSA141	Saving
Metering				
Phase current	0.1 to 40 In ⁽³⁾	±0.5 %	■	
Residual current	Calculated 0.1 to 40 In	±1 %	■	
	Measured 0.1 to 20 In0	±1 %	■	
Demand current	0.1 to 40 In	±0.5 %		
Peak demand current	0.1 to 40 In	±0.5 %		□
Phase-to-phase voltage	0.06 to 1.2 Unp	±0.5 %	■	
Phase-to-neutral voltage	0.06 to 1.2 Vnp	±0.5 %	■	
Residual voltage	0.04 to 3 Vnp	±1 %		
Positive sequence voltage	0.05 to 1.2 Vnp	±2 %		
Negative sequence voltage	0.05 to 1.2 Vnp	±2 %		
Frequency	25 to 65 Hz	±0.02 Hz	■	
Active power	0.015 Sn ⁽²⁾ to 999 MW	±1 %	■	
Reactive power	0.015 Sn ⁽²⁾ to 999 Mvar	±1 %	■	
Apparent power	0.015 Sn ⁽²⁾ to 999 MVA	±1 %	■	
Peak demand active power	0.015 Sn ⁽²⁾ to 999 MW	±1 %		□
Peak demand reactive power	0.015 Sn ⁽²⁾ to 999 Mvar	±1 %		□
Power factor	-1 to +1 (CAP/IND)	±1 %		
Calculated active energy	0 to 2.1.10 ⁸ MW.h	±1 % ±1 digit		□
Calculated reactive energy	0 to 2.1.10 ⁸ Mvar.h	±1 % ±1 digit		□
Temperature	-30 to +200 °C or -22 to +392 °F	±1 °C from +20 to +140 °C	■	
Network diagnosis assistance				
Tripping context				□
Phase tripping current	0.1 to 40 In	±5 %		□
Earth fault tripping current	0.1 to 20 In0	±5 %		□
Negative sequence / unbalance	10 to 500 % of Ib	±2 %		
Peak demand negative sequence and positive sequence current ratio	1 to 500 %	±2 %		
Phase displacement φ0 (between V0 and I0)	0 to 359°	±2°		
Phase displacement φ1, φ2, φ3 (between V and I)	0 to 359°	±2°		
Disturbance recording				□
Fault locator	Fault location	0 to 99.99 km or 0 to 62.13 mi	±2 %	
	Fault resistance	0 to 999.9 Ω	±10 %	
Machine operating assistance				
Thermal capacity used	0 to 800 % (100 % for I phase = Ib)	±1 %	■	□
Remaining operating time before overload tripping	0 to 999 mn	±1 mn		
Waiting time after overload tripping	0 to 999 mn	±1 mn		
Running hours counter / operating time	0 to 65535 hours	±1 % or ±0.5 h		□
Starting current	1.2 Ib to 24 In	±5 %		□
Starting time	0 to 300 s	±300 ms		□
Number of starts before inhibition	0 to 60	1		
Start inhibit time	0 to 360 mn	±1 mn		
Cooling time constant	5 to 600 mn	±5 mn		
Switchgear diagnosis assistance				
Cumulative breaking current	0 to 65535 kA ²	±10 %		□
Number of operations	0 to 4.10 ⁹	1		□
Operating time	20 to 100 ms	±1 ms		□
Charging time	1 to 20 s	±0.5 s		□

■ available on MSA141 analog output module, according to setup.

□ saved in the event of auxiliary supply outage.

(1) Typical accuracy, see details on subsequent pages.

(2) Sn: apparent power, = $\sqrt{3} \cdot \text{Unp} \cdot \text{In}$.

(3) Measurement up to 0.02 In for information purpose.