



Northern Design Metering Equipment - 3f

Model	Brief Description	Main application ②	Inputs	Parameters Measured	Accuracy ⑤	PC Comms	Outputs	Size	Status
kWh Cube	Cube kWh Meter	kWh Metering in control panels Energy Management	3φ Volt & Amp ⑥	KWh (Dual reset & non- reset registers) kW for commissioning	Cl. 1 kWh	No	1 Pulse ⑦	Panel 96x96	Active
RM303 ③	RM303 kWh Transmitter (Blind unit - No Display)	kWh Metering in control panels Energy Management	3φ Volt & Amp ⑥	KWh	Cl. 1 kWh	No	1 Pulse	Rail 6 unit	Special Order
Power Rail 303	PowerRail 303 kWh Meter	kWh Metering in control panels Energy Management	3φ Volt & Amp ⑥	KWh (Dual reset & non- reset registers) kW for commissioning	Cl. 1 kWh	No	1 Pulse ⑦	Rail 6 unit	Active
XD303F	XD303F kW Transducer kW ⇒ Frequency	Process Control Equipment & White Goods Testing	1φ or 3φ V & I	kW (kWh with an external counter)	±0.2% kW	No	1 Frequency	Rail 6 unit	Active
Power Rail 323	PowerRail 323 kW, kW Demand & kWh Meter	Energy management Control Panels requiring kWh & kW MD	3φ Volt & Amp	kW, kW MD kWh	Cl. 1 kWh	RS485 ⑧	1 Pulse	Rail 6 unit	Active
PowerCube	Power Cube kW, kW Demand & kWh Meter	Energy management Control Panels requiring kWh & kW MD	3φ Volt & Amp	kW, kW MD kWh	Cl. 1 kWh		1 Pulse	Panel 96x96	Active
PM305-1	PM305-1 kW & kWh Meter	Energy Management Control Panels requiring kWh & kW	3φ Volt & Amp ⑦	kW & kWh per φ kW & PF	Cl. 0.5 kWh	No	2 Plse / Alarm 4-20mA ⑧	Panel 96x48	Active
PM305-2	PM305-2 Energy Meter	Energy Management needing kVAh/kvarh in addition to kWh. Control Panels requiring measurement of all Energies	3φ Volt & Amp ⑦	kW, kVA, kvar & Hz kWh, kVAh, kvarh per φ kW & PF	Cl. 0.5 kWh Cl. 1 kvarh	RS485 ⑧ RS422 ⑧ RS232 ⑧	2 Plse / Alarm 4-20mA ⑧	Panel 96x48	Active
PM305-3	PM305-3 All Function (Multifunction) Meter	Energy Management needing kVAh/kvarh in addition to kWh plus Volts & Amps. Control Panels requiring measurement of all Energies plus Volts & Amps.	3φ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz. kWh, kVAh, kvarh Volt, Amp per φ kW & PF	Cl. 0.5 kWh Cl. 1 kvarh	RS485 ⑧ RS422 ⑧ RS232 ⑧	2 Plse / Alarm 4-20mA ⑧	Panel 96x48	Active
PM305-4	PM305-4 kW & kWh Meter with Volts & Amps	Control Panels requiring measurement of kWh plus Volt & Amps. kW also available. Energy Management	3φ Volt & Amp ⑦	PF, kW, kWh, Volt, Amp & Hz per φ kW & PF	Cl. 0.5 kWh	RS485 ⑧ RS422 ⑧ RS232 ⑧	2 Plse / Alarm 4-20mA ⑧	Panel 96x48	Active



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PM305-5	PM305-5 Energy and MD Meter	Energy Management needing kVAh/kvarh Control Panels requiring measurement of all Energies In both cases with kW & kVA MD	3 ϕ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz. RTC kWh, kVAh, kvarh per ϕ kW & PF. kW & kVA MD	Cl. 0.5 kWh Cl. 1 kvarh	RS485 [®] RS422 [®] RS232 [®]	2 Plse / Alarm 4-20mA [®]	Panel 96x48	Active
PM305-6	PM305-6 All Function (Multifunction) MD Meter	Energy Management needing kVAh/kvarh Control Panels requiring measurement of all Energies In both cases with V & I measurement and kW & kVA MD	3 ϕ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz. RTC kWh, kVAh, kvarh Volt, Amp per ϕ kW & PF. kW & kVA MD	Cl. 0.5 kWh Cl. 1 kvarh	RS485 [®] RS422 [®] RS232 [®]	2 Plse / Alarm 4-20mA [®]	Panel 96x48	Active
PM305-7	PM305-7 Import/Export Energy Meter	Energy Management needing kVAh/kvarh Control Panels requiring measurement of all Energies In both cases both Import & Export Energies	3 ϕ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz kWh, kVAh, kvarh per ϕ kW & PF	Cl. 0.5 kWh Cl. 1 kvarh	RS485 [®]	2 Plse / Alarm 4-20mA [®]	Panel 96x48	Active
PM305-8	PM305-8 All Function (Multifunction) Import/Export Meter	Energy Management needing kVAh/kvarh Control Panels requiring measurement of all Energies In both cases with V & I measurement and both Import & Export Energies	3 ϕ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz kWh, kVAh, kvarh Volt, Amp per ϕ kW & PF	Cl. 0.5 kWh Cl. 1 kvarh	RS485 [®] RS422 [®] RS232 [®]	2 Plse / Alarm 4-20mA [®]	Panel 96x48	Active
PM390	PM390 Multifunction Meter	Control Panels requiring a high accuracy unit to replace all Panel Indicators & Energy Meters. Import & Export energies measured.	3 ϕ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz; Volt & Amp Peak V & I kWh, kVAh, kvarh per ϕ kW , kVA, kvar & PF	Cl. 0.5 kWh Cl. 1 kvarh	RS485 [®] RS422 [®] RS232 [®]	2 Plse / Alm [®] 4-20mA [®]	Panel 96x96	Active
PM390MD	PM390 Multifunction Maximum Demand Meter	Control Panels requiring a high accuracy unit to replace all Panel Indicators & Energy Meters, and an MD indicator. Import & Export energies measured.	3 ϕ Volt & Amp ⑦	kW, kVA, kvar, PF & Hz; Volt & Amp Peak V & I. RTC. kWh, kVAh, kvarh per ϕ kW , kVA, kvar & PF. kW & kVA MD	Cl. 0.5 kWh Cl. 1 kvarh	RS485 [®] RS422 [®] RS232 [®]	2 Plse / Alm [®] 4-20mA [®]	Panel 96x96	Active



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MultiCube 1	MultiCube 1 Panel Indicator	Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW & PF. 3 ϕ kW, PF & Hz	$\pm 0.2\%$ V & I $\pm 0.4\%$ Watt	RS422 / RS485 [®]	None 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active
MultiCube 2	MultiCube 2 Indicator & Meter	Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators plus kWh Meter, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW & PF. kWh 3 ϕ kW, PF & Hz.	Cl.1 kWh	RS422 / RS485 [®]	1 Pulse 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active
MultiCube 3	MultiCube 3 Indicator & Meter	Control Panels - replacement for Volt, Amp, kW, kvar, PF & Frequency Indicators, kW Demand Meter plus kWh & kvarh Meters, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW, kvar & PF 3 ϕ kW, kvar, PF & Hz. kW MD kWh & kvarh	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [®]	2 Pulse 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active
MultiCube 4	MultiCube 4 Indicator & Meter	Control Panels - replacement for Volt, Amp, kW, kVA, kvar, PF, Frequency & Neutral Current Indicators, kW Demand Meter plus kWh & kvarh Meters, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW, kVA, kvar & PF. kW MD. 3 ϕ kW, kVA, kvar, PF & Hz. kWh & kvarh. Neutral Current. Peak V & I	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [®]	2 Pulse 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active
MultiCube 6	MultiCube 4 Indicator & Meter (Power & Harmonic)	Control Panels - replacement for Volt, Amp, kW, kVA, kvar, PF, Frequency & Neutral Current Indicators, kW Demand Meter plus kWh & kvarh Meters, also Amp & Volt Demand Meters and Harmonic Measurement	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW, kVA, kvar & PF. kW, kVA & kvar MD. 3 ϕ kW, kVA, kvar, PF & Hz. kWh & kvarh. Neutral Current. Peak V & I. %THD V & I	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [®]	2 Pulse 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active
MultiCube 9.1	MultiCube 9.1 Import & Export Indicator & Meter	Generators & Co-gen Systems Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators plus kWh Meter, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, kW & PF. Imp & Exp kWh & kvarh 3 ϕ kW, PF & Hz.	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [®]	2 Pulse 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active
MultiCube 9.2	MultiCube 9.2 Import & Export Indicator & Meter	Generators & Co-gen Systems Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators plus kWh Meter, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, kW, kvar & PF Imp & Exp kWh & kvarh. 3 ϕ kW, kVA, kvar, PF & Hz.	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [®]	2 Pulse 4-20mA [®] 0 - 5V [®]	Panel 96x96	Active



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MultiCube 9.3	MultiCube 9.3 Import & Export Indicator & Meter	Generators & Co-gen Systems Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators plus kWh Meter, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I, kW, kVA, kvar, & PF. Imp & Exp kWh & kvarh. 3 ϕ kW, kVA, kvar, PF & Hz.	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [Ⓞ]	2 Pulse [Ⓞ] 4-20mA [Ⓞ] 0 - 5V [Ⓞ]	Panel 96x96	Active
MultiCube 9.4	MultiCube 9.4 Import & Export Indicator & Meter	Generators & Co-gen Systems Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators plus kWh Meter, also Amp & Volt Demand Meters	3 ϕ Volt & Amp	Per ϕ V, I & I Demand. kW, kVA, kvar & PF. 3 ϕ kW, kVA, kvar, PF & Hz. kW MD. Imp & Exp kWh & kvarh. Peak V & I. Neutral Current.	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 [Ⓞ]	2 Pulse [Ⓞ] 4-20mA [Ⓞ] 0 - 5V [Ⓞ]	Panel 96x96	Active
MultiRail	DIN rail mounted Power Multimeter	Control Panels - replacement for Volt, Amp, kW, kVA, kvar, PF, Frequency & Neutral Current Indicators, kW Demand Meter plus kWh & kvarh Meters, also Amp & Volt Demand Meters. Digital Data Acquisition systems, including SCADA, BMS, etc. Provides all power parameters using MODBUS [Ⓞ] protocol via an RS485 link.	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW, kVA, kvar, PF plus THD for V & I 3 ϕ kW, kVA, kvar, PF & Hz. kW MD kWh & kvarh. Neutral Current. Peak V & I	Cl.1 kWh Cl. 2 kvarh	RS485	2 Pulse [Ⓞ]	DIN rail 6 Unit	Active
Rail RTU	DIN rail mounted Power Relay & Multi-Transducer	Digital Data Acquisition systems, including SCADA, BMS, etc. Provides all power parameters using MODBUS [Ⓞ] protocol via an RS485 link.	3 ϕ Volt & Amp	Per ϕ V, I, V & I Demands, kW, kVA, kvar, PF plus THD for V & I 3 ϕ kW, kVA, kvar, PF & Hz. kW MD kWh & kvarh. Neutral Current. Peak V & I	Cl.1 kWh Cl. 2 kvarh	RS485	2 Pulse [Ⓞ]	DIN rail 6 Unit	Active

NOTES

All Meters measuring Maximum Demand (MD) also measure & store the Peak Demand.
 All 3 ϕ kWh & kW Demand Meters can be used on single phase - application note available.
 Ⓞ Option available at extra cost.
 ① Not yet available.
 ② Target Markets listed in perceived order at time of design.
 ③ Available to Special Order Only.
 ④ Obsolescent Meter. Not for new installations.

Ⓞ Best available accuracy quoted.
 Ⓞ Also available for Single Phase and 3 ϕ Balanced Load to special order.
 Ⓞ Can be used as standard on 3 ϕ Balanced Loads - application note available.



Northern Design Metering Equipment - Single Phase

Model	Single Phase Values																			Outputs			Options			
	kWh	Energy				Demand				Instantaneous							Single Pulse	Dual Pulse	RS485 Comms	Quad Analogue O/p	RS232 Comms	RS422/485 Comr	RS485 Comms			
	Total kvarh	Export kWh	Export kvarh	Import kvarh	Amp	Peak Amp	Rolling kW	PK Rolling kW	kW	kVA	kvar	PF	Frequency	Volts	Peak Volt	Amps	Peak Amp	% THD Volt & Air	Real Time Clock							
RM10	0																			0						
MultiCube S.1	0								0			0	0	0	0	0	0			0		0		0	0	0
MultiCube S.2	0			0					0	0	0	0	0	0	0	0	0			0		0		0	0	0
MultiCube S.3	0			0	0	0			0	0	0	0	0	0	0	0	0			0		0		0	0	0
MultiCube S.4	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0			0		0		0	0	0
MultiCube S.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0		0		0	0	0

Model	Brief Description	Main application ②	Inputs	Parameters	Accuracy	PC Comms	Outputs	Size	Status
RM10	40 Amp whole current Meter	kWh metering in control panels Energy Management	Live & Neutral	kWh	Cl. 2 kWh	No	1 Pulse ⑥	Rail 2½ unit	Active
MultiCube S.1	MultiCube S.1 Panel Indicator & Meter	Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators, also kWh Meters	Volt & Amp	V, I, kW, PF & Hz Peak V & I. kWh	±0.2% V & I ±0.4% Watt Cl.1 kWh	RS422 / RS485 ⑥	2 Pulse 4-20mA ⑥ 0 - 5V ⑥	Panel 96x96	Active
MultiCube S.2	MultiCube S.2 Panel Indicator & Meter	Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators, also kWh & kvarh Meters	Volt & Amp	V, I, kW, kvar, PF & Hz Peak V & I. Import kWh & kvarh	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 ⑥	1 Pulse 4-20mA ⑥ 0 - 5V ⑥	Panel 96x96	Active
MultiCube S.3	MultiCube S.3 Panel Indicator & Meter	Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators, also Amp Demand, kWh & kvarh Meters	Volt & Amp	V, I, kW, kVA, kvar, PF & Hz. Amp Demand. Peak V & I. Imp kWh & kvarh	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 ⑥	2 Pulse 4-20mA ⑥ 0 - 5V ⑥	Panel 96x96	Active
MultiCube S.4	MultiCube S.4 Import & Export Panel Indicator & Meter	Generators & Co-gen Systems Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators, also kW & Amp Demand, kWh & kvarh Meters	Volt & Amp	V, I, kW, kVA, kvar, PF & Hz. Peak V & I. KW & Amp Demands. Import kWh & kvarh. Exp kWh	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 ⑥	2 Pulse 4-20mA ⑥ 0 - 5V ⑥	Panel 96x96	Active
MultiCube S.5	MultiCube S.5 Import & Export Panel Indicator & Meter	Generators & Co-gen Systems Control Panels - replacement for Volt, Amp, kW, PF & Frequency Indicators, also kW & Amp Demand, kWh & kvarh Meters	Volt & Amp	V, I, kW, kVA, kvar, PF & Hz. Peak V & I. KW & Amp Demands. Import & Export kWh & kvarh.	Cl.1 kWh Cl. 2 kvarh	RS422 / RS485 ⑥	2 Pulse 4-20mA ⑥ 0 - 5V ⑥	Panel 96x96	Active