Measurement Availability

Presentation

Measurements can be displayed through the following interfaces:
- On the MicroLogic X display screen
- With the EcoStruxure Power Device app through Bluetooth or USB OTG connection.
- With EcoStruxure Power Commission software
- On the FDM128 display
- By a remote controller using the communication network
- On the IFE/EIFE webpages

The following tables indicate which measurements are displayed on each interface.

Current

The availability of parameters depends on the type of interface used to display data. All parameters are not displayed on all interfaces.

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time phase current values I1, I2, I3	✓	✓	✓	✓	✓	✓
Maximum phase current values I1 MAX, I2 MAX, I3 MAX	✓	✓	✓	✓	✓	✓
Real-time maximum of RMS current of phases I1, I2, I3, IN	–	–	–	✓	✓	–
Maximum of maximum phase current values	–	–	–	–	✓	–
Minimum phase current values I1 MIN, I2 MIN, I3 MIN	–	✓	✓	✓	✓	✓
Minimum of minimum phase current values	–	–	–	–	✓	–
Real-time neutral current value IN(1)	✓	✓	✓	✓	✓	✓
Maximum neutral current value IN MAX(1)	✓	✓	✓	✓	✓	✓
Minimum neutral current value IN MIN(1)	–	✓	✓	✓	✓	✓
Real-time average current value Iavg	✓	✓	✓	✓	✓	✓
Maximum average current value Iavg MAX	–	✓	✓	✓	✓	✓
Minimum average current value Iavg MIN	–	✓	✓	✓	✓	✓
Real-time ground-fault current value	✓	✓	✓	✓	✓	✓
Maximum value of the ground-fault current	✓	✓	✓	✓	✓	✓
Minimum value of the ground-fault current	–	✓	✓	✓	✓	✓
Real-time earth-leakage current value(2)	✓	✓	✓	✓	✓	✓
Maximum value of the earth-leakage current(2)	✓	✓	✓	✓	✓	✓
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENCT wired and configured. (2) Applies to MicroLogic 7.0 X control unit. Values for current related to ground-fault current Ig are not available.						

Current Unbalance

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time phase current unbalance values I1 unbal, I2 unbal, I3 unbal	–	–	✓	–	✓	–
Maximum values of the 3 phase current unbalances I1 unbal MAX, I2 unbal MAX, I3 unbal MAX	–	–	✓	–	✓	–
Real-time maximum of 3 phase current unbalances	✓	✓	✓	✓	✓	–
Maximum of maximum of 3 phase current unbalances	✓	✓	✓	✓	✓	–

Voltage

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time phase-to-phase voltage values V12, V23, V31	✓	✓	✓	✓	✓	✓
Maximum values of phase-to-phase voltages V12 MAX, V23 MAX, V31 MAX	✓	✓	✓	✓	✓	✓
Minimum values of phase-to-phase voltages V12 MIN, V23 MIN, V31 MIN	✓	✓	✓	✓	✓	✓
Real-time phase-to-neutral voltages V1N, V2N, V3N(1)	✓	✓	✓	✓	✓	✓
Maximum values of phase-to-neutral voltages V1N MAX, V2N MAX, V3N MAX(1)	✓	✓	✓	✓	✓	✓
Minimum values of phase-to-neutral voltages V1N MIN, V2N MIN, V3N MIN(1)	✓	✓	✓	✓	✓	✓
Real-time average phase-to-phase voltage Vavg LL	✓	✓	✓	✓	✓	✓
Maximum average phase-to-phase voltage Vavg LL MAX	–	✓	✓	✓	✓	✓
Minimum average phase-to-phase voltage Vavg LL MIN	–	✓	✓	✓	✓	✓
Real-time average phase-to-neutral voltage Vavg LN(1)	✓	–	✓	✓	✓	✓
Maximum average phase-to-neutral voltage Vavg LN MAX(1)	–	–	✓	✓	✓	✓
Minimum average phase-to-neutral voltage Vavg LN MIN(1)	–	–	✓	✓	✓	✓
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Voltage Unbalance

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time phase-to-phase voltage unbalances V12unbal, V23unbal, V31unbal	–	–	✓	–	✓	–
Maximum values of the 3 phase-to-phase voltage unbalances V12unbal MAX, V23unbal MAX, V31unbal MAX	–	–	✓	–	✓	–
Real-time maximum of 3 phase-to-phase voltage unbalances	✓	✓	✓	✓	✓	–
Maximum of maximum of 3 phase-to-phase voltage unbalances	✓	✓	✓	✓	✓	–
Real-time phase-to-neutral voltage unbalances V1Nunbal, V2Nunbal, V3Nunbal(1)	–	–	✓	–	✓	–
Maximum values of the 3 phase-to-neutral voltage unbalances V1Nunbal MAX, V2Nunbal MAX, V3Nunbal MAX(1)	–	–	✓	–	✓	–
Real-time maximum of 3 phase-to-neutral voltage unbalances(1)	✓	✓	✓	✓	✓	–
Maximum of maximum of 3 phase-to-neutral voltage unbalances(1)	✓	✓	✓	✓	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Power

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time active power for each phase P1, P2, P3(1)	✓	–	✓	✓	✓	–
Maximum values of active power for each phase P1 MAX, P2 MAX, P3 MAX(1)	–	–	✓	✓	✓	–
Minimum values of active power for each phase P1 MIN, P2 MIN, P3 MIN(1)	–	–	✓	✓	✓	–
Real-time total active power Ptot	✓	✓	✓	✓	✓	✓
Maximum value of total active power Ptot MAX	✓	✓	✓	✓	✓	✓
Minimum value of total active power Ptot MIN	–	✓	✓	✓	✓	✓
Real-time reactive power for each phase Q1, Q2, Q3(1)	✓	–	✓	✓	✓	–
Maximum values of reactive powers for each phase Q1 MAX, Q2 MAX, Q3 MAX(1)	–	–	✓	✓	✓	–
Minimum values of reactive powers for each phase Q1 MIN, Q2 MIN, Q3 MIN(1)	–	–	✓	✓	✓	–
Real-time total reactive power Qtot	✓	✓	✓	✓	✓	✓
Maximum value of total reactive power Qtot MAX	✓	✓	✓	✓	✓	✓
Minimum value of total reactive power Qtot MIN	–	✓	✓	✓	✓	✓
Real-time apparent power for each phase S1, S2, S3(1)	✓	–	✓	✓	✓	–
Maximum values of apparent powers for each phase S1 MAX, S2 MAX, S3 MAX(1)	–	–	✓	✓	✓	–
Minimum values of apparent powers for each phase S1 MIN, S2 MIN, S3 MIN(1)	–	–	✓	✓	✓	–
Real-time total apparent power Stot	✓	✓	✓	✓	✓	✓
Maximum value of total apparent power Stot MAX	✓	✓	✓	✓	✓	✓
Minimum value of total apparent power Stot MIN	–	✓	✓	✓	✓	✓
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Operating Indicators

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Operating quadrant	–	–	–	–	✓	–
Phase rotation	–	✓	–	✓	✓	–
Type of load	✓	–	✓	✓	✓	–

Power Factor PF and cos φ

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time total power factor PF	✓	✓	✓	✓	✓	✓
Maximum value of the total power factor PF MAX	–	✓	✓	✓	✓	✓
Minimum value of the total power factor PF MIN	–	✓	✓	✓	✓	✓
Real-time power factors for each phase PF1, PF2, PF3(1)	–	–	✓	✓	✓	–
Maximum power factor for each phase PF1 MAX, PF2 MAX, PF3 MAX(1)	–	–	✓	✓	✓	–
Minimum power factor for each phase PF1 MIN, PF2 MIN, PF3 MIN(1)	–	–	✓	✓	✓	–
Real-time total cos φ	✓	✓	✓	✓	✓	–
Maximum value cos φ MAX	–	✓	✓	✓	✓	–
Minimum value cos φ MIN	–	✓	✓	✓	✓	–
Real-time cos φ for each phase cos φ 1, cos φ 2, cos φ 3(1)	–	–	✓	✓	✓	–
Maximum cos φ for each phase cos φ 1 MAX, cos φ 2 MAX, cos φ 3 MAX(1)	–	–	✓	✓	✓	–
Minimum cos φ for each phase cos φ 1 MIN, cos φ 2 MIN, cos φ 3 MIN(1)	–	–	✓	✓	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Total Harmonic Distortion Compared to the Fundamental (THD) of Currents

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time total harmonic distortion (THD) of current for each phase THD(I1), THD(I2), THD(I3)	✓	✓	✓	✓	✓	–
Real-time total harmonic distortion (THD) of neutral current THD(IN)(1)	✓	✓	✓	✓	✓	–
Maximum value of total harmonic distortion (THD) of neutral current THD(IN) MAX(1)	✓	✓	✓	✓	✓	–
Minimum value of total harmonic distortion (THD) of neutral current THD(IN) MIN(1)	–	✓	✓	✓	✓	–
Real-time average total harmonic distortion (THD) of the 3 phase currents	✓	✓	✓	–	✓	–
Maximum value of the average total harmonic distortion (THD) of the 3 phase currents	✓	✓	✓	–	✓	–
Minimum value of the average total harmonic distortion (THD) of the 3 phase currents	–	✓	✓	–	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Total Harmonic Distortion Compared to the Fundamental (THD) of Voltages

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time total harmonic distortion (THD) of phase-to-phase voltage THD(V12), THD(V23), THD(V31)	✓	✓	✓	✓	✓	–
Real-time total harmonic distortion (THD) of phase-to-neutral voltage THD(V1N), THD(V2N), THD(V3N)(1)	✓	✓	✓	✓	✓	–
Real-time average total harmonic distortion (THD) of the 3 phase-to-phase voltages	✓	✓	✓	–	✓	–
Maximum value of the average total harmonic distortion (THD) of the 3 phase-to-phase voltages	✓	✓	✓	–	✓	–
Minimum value of the average total harmonic distortion (THD) of the 3 phase-to-phase voltages	–	✓	✓	–	✓	–
Real-time average total harmonic distortion (THD) of the 3 phase-to-neutral voltages(1)	✓	✓	✓	–	✓	–
Maximum value of the average total harmonic distortion (THD) of the 3 phase-to-neutral voltages(1)	✓	✓	✓	–	✓	–
Minimum value of the average total harmonic distortion (THD) of the 3 phase-to-neutral voltages(1)	–	✓	✓	–	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Total Harmonic Distortion Compared to the RMS Value (THD-R) of Currents

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time total harmonic distortion (THD-R) of current for each phase THD-R(I1), THD-R(I2), THD-R(I3)	–	✓	✓	–	✓	–
Real-time total harmonic distortion (THD-R) of neutral current THD-R(IN)(1)	–	✓	✓	–	✓	–
Maximum value of total harmonic distortion (THD-R) of neutral current THD-R(IN) MAX(1)	–	✓	✓	–	✓	–
Minimum value of total harmonic distortion (THD-R) of neutral current THD-R(IN) MIN(1)	–	✓	✓	–	✓	–
Real-time average total harmonic distortion (THD-R) of the 3 phase currents	–	✓	✓	–	✓	–
Maximum value of the average total harmonic distortion (THD-R) of the 3 phase currents	–	✓	✓	–	✓	–
Minimum value of the average total harmonic distortion (THD-R) of the 3 phase currents	–	✓	✓	–	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Total Harmonic Distortion Compared to the RMS Value (THD-R) of Voltages

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Real-time total harmonic distortion (THD-R) of the phase-to-phase voltage THD-R(V12), THD-R(V23), THD-R(V31)	–	✓	✓	–	✓	–
Real-time total harmonic distortion (THD-R) of the phase-to-neutral voltage THD-R(V1N), THD-R(V2N), THD-R(V3N)(1)	–	✓	✓	–	✓	–
Real-time average total harmonic distortion (THD-R) of the 3 phase-to-phase voltages	–	✓	✓	–	✓	–
Maximum value of the average total harmonic distortion (THD-R) of the 3 phase-to-phase voltages	–	✓	✓	–	✓	–
Minimum value of the average total harmonic distortion (THD-R) of the 3 phase-to-phase voltages	–	✓	✓	–	✓	–
Real-time average total harmonic distortion (THD-R) of the 3 phase-to-neutral voltages(1)	–	✓	✓	–	✓	–
Maximum value of the average total harmonic distortion (THD-R) of the 3 phase-to-neutral voltages(1)	–	✓	✓	–	✓	–
Minimum value of the average total harmonic distortion (THD-R) of the 3 phase-to-neutral voltages(1)	–	✓	✓	–	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Frequency

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Frequency	✓	✓	✓	✓	✓	✓
Maximum frequency	✓	✓	✓	✓	✓	✓
Minimum frequency	✓	✓	✓	✓	✓	✓

Current Demand and Peak Values

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Phase (I1, I2, I3) current demand values	–	✓	✓	✓	✓	✓
Phase (I1, I2, I3) peak current demand values	–	✓	✓	✓	✓	–
Neutral (IN) current demand value(1)	–	✓	✓	✓	✓	✓
Neutral (IN) peak current demand value(1)	–	✓	✓	✓	✓	–
Average (Iavg) current demand value	–	✓	✓	✓	✓	–
Average (Iavg) peak current demand value	–	✓	✓	✓	✓	–
(1) Applies to 4-pole circuit breakers or 3-pole circuit breakers with ENVT wired and configured.						

Power Demand and Peak Values

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Demand value (P dmd) of the total active power (Ptot)	–	✓	✓	✓	✓	✓
Peak demand value (P dmd max) of the total active power (Ptot)	–	✓	✓	✓	✓	✓
Demand value (Q dmd) of the total reactive power (Qtot)	–	✓	✓	✓	✓	✓
Peak demand value (Q dmd max) of the total reactive power (Qtot)	–	✓	✓	✓	✓	–
Demand value (S dmd) of the total apparent power (Stot)	–	✓	✓	✓	✓	✓
Peak demand value (S dmd max) of the total apparent power (Stot)	–	✓	✓	✓	✓	–

Resettable Energy Meters

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Total active energy value Ep	✓	✓	✓	✓	✓	✓
Total active energy values: Epdelivered, and Epreceived	✓	✓	✓	✓	✓	–
Total reactive energy value Eq	✓	✓	✓	✓	✓	✓
Total reactive energy values: Eqdelivered, and Eqreceived	✓	✓	✓	✓	✓	–
Total apparent energy value Es	✓	✓	✓	✓	✓	✓

Non-Resettable Energy Meters

Measurement	MicroLogic X HMI	EcoStruxure Power Device app	EcoStruxure Power Commission software	FDM128	Communication	IFE/EIFE webpages
Total active energy value Ep	–	–	✓	–	✓	–
Total active energy values: Epdelivered, and Epreceived	–	–	✓	✓	✓	–
Total reactive energy value Eq	–	–	✓	–	✓	–
Total reactive energy values: Eqdelivered, and Eqreceived	–	–	✓	–	✓	–
Total apparent energy value Es	–	–	✓	–	✓	–