

ATOM and MicroFUSION Feature Comparison



1-PHASE FEATURES

- = Product ships with this feature
- = Feature not available on this product
- = Feature is an option either at time of order or available as an in-service upgrade

Single Phase Controllers	ATOM	uFUSION HX
Universal Line Voltage Input (24-600 VAC)	●	●
Maximum AC Line Voltage	600	600/690
Frame Sizes Maximum Amperage @ 50° C [122° F]	16-65A	8-400A
VDC Contactor (4.5-32 VDC) Setpoint Input	●	—
4-20mA or POT / 0-5 / 1-5 / 0-10 VDC Setpoint Input	10 BIT	16 BIT
Field Scalable Analog Setpoint Input	○	●
Dual Analog Setpoint Inputs	—	○
Pulse Width Modulation	—	○
Dual 4-20mA or 0-5 / 1-5 / 0-10 VDC Retrasmits	—	○
Field Scalable Analog Retransmit	—	●
RMS Voltage Feedforward Control	●	●
RMS Load Voltage Control	—	●
AVG Load Voltage Control	—	●
RMS Current Control	—	●
True Power Control	—	●
Adjustable Control Response	●	●
Proportional Control (Variable Time Based)	●	●
High Resolution Control Loop	—	●

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FEATURES (CONTINUED)

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Single Phase Controllers <i>(continued)</i>	ATOM	uFUSION HX
Monitor Current	○	●
Monitor Voltage	–	●
Monitor Power	–	●
Monitor KWH	–	●
Monitor Load Resistance	–	●
Linearity from 5-100% of Output Range	4%	1%
Temperature Drift Output per Degree C	0.1%	0.02%
Load Voltage/Current Accuracy	5%	0.5%
Load Power Accuracy	–	1%
Line Voltage Compensation	●	●
Trans-Guard	●	●
Sync-Guard	DIGITAL ONLY	○
Heater Bakeout	– ¹	●
Current Source Gate Drive	–	●
Isolated I/O	–	○
Hardware Run/Stop (Enable)	–	●
General Purpose Input	–	○
Firing Modes		
Phase Angle Output	○	●
Zero Cross	●	●
Fast Zero Cross Mode	●	●
Zero Cross Transformer Firing Mode	–	●
Hiper Firing Mode	–	●
SSR Random/Zero Cross Firing Mode	●	–
1/2 Cycle DC Output	●	–
Limits		
Voltage Limit	●	●
Current Limit (Fixed at 105% of frame rating)	●	●
Current Limit (Adjustable)	○	○

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Single Phase Controllers <i>(continued)</i>	ATOM	uFUSION HX
Alarms and Monitors		
Alarm Relay	○	●
LED Bar Graph	–	●
Over-Current Trip	FIXED	ADJUSTABLE
Over Temperature Alarm	●	●
Shorted SCR Alarm	●	●
Shorted SCR Alarm Output	●	●
Open Load/Heater Alarm	●	●
Partial Load Fault Detection	●	●
Communications & Connectivity		
USB Connection	USB-C	MICRO USB
CCI-Link Connectivity	–	●
Fieldbus options: ModbusTCP, EtherNET I/P, Profinet	○	○
Fieldbus option: EtherCAT	○	VIA GATEWAY
Free Control Panel Software	●	●
Remote Display	–	○
Hardware and Certifications		
DIN Rail Mount	●	UP TO 32A
Panel Mount	●	●
24 VDC Control Powered	●	●
Electrically Touch-Safe	●	●
SCCR / UL / cUL / RoHS / CE (with filter)	●	●

¹ Heater Bakeout is a potential future addition on ATOM products

3-PHASE FEATURES

- = Product ships with this feature
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Three Phase Controllers	ATOM	uFUSION SX	uFUSION HX
Universal Line Voltage Input (24-600 VAC)	●	●	●
Maximum AC Line Voltage	600	600/690	600/690
Frame Sizes Maximum Amperage @ 50° C [122° F]	16-80A	8-400A	8-400A
VDC Contactor (4.5-32 VDC) Setpoint Input	●	–	–
4-20mA or POT / 0-5 / 1-5 / 0-10 VDC Setpoint Input	10 BIT	16 BIT	16 BIT
Field Scalable Analog Setpoint Input	○	●	●
Dual Analog Setpoint Inputs	–	○	○
Pulse Width Modulation	–	○	○
Dual 4-20mA / 0-5 / 1-5 / 0-10 VDC Retrasmits	–	–	○
Field Scalable Analog Retransmit	–	–	●
RMS Voltage Feedforward Control	●	●	●
RMS Load Voltage Control	–	–	●
AVG Load Voltage Control	–	–	●
RMS Current Control	–	–	●
True Power Control	–	–	●
Adjustable Control Response	● ¹	●	●
Proportional Control (Variable Time Based)	●	●	●
Monitor Current	○	●	●
Monitor Voltage	–	–	●
Monitor Power	–	–	●
Monitor KWH	–	–	●
Monitor Load Resistance	–	–	●
Linearity from 5-100% of Output Range	4%	4%	1%
Temperature Drift Output per Degree C	0.1%	0.05%	0.02%
Load Voltage/Current Accuracy	5%	3%	0.5%
Load Power Accuracy	–	3%	1%
Line Voltage Compensation	●	●	●

¹ Adjustable Control Response is not available in Zero-Cross firing mode on ATOM controllers.

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Three Phase Controllers (<i>continued</i>)	ATOM	uFUSION SX	uFUSION HX
Trans-Guard	●	●	●
Sync-Guard	● ²	○	○
Heater Bakeout	– ³	●	●
Current Source Gate Drive	–	●	●
Isolated I/O	–	○	○
Hardware Run/Stop (Enable)	–	●	●
General Purpose Input	–	○	○
Firing Modes			
Phase Angle Output	○	● ⁴	● ⁴
Zero Cross	●	●	●
Fast Zero Cross Mode	●	●	●
Zero Cross Transformer Firing Mode	–	●	●
Hiper Firing Mode	–	●	●
SSR Random/Zero Cross Firing Mode	●	–	–
Limits			
Voltage Limit	●	●	●
Current Limit (Fixed at 105% of frame rating)	● ⁵	●	●
Current Limit (Adjustable)	○ ⁵	●	●
Alarms and Monitors			
Alarm Relay	○	●	●
LED Bar Graph	–	●	●
Over-Current Trip	FIXED	ADJUSTABLE	ADJUSTABLE
Over Temperature Alarm	●	●	●

² Sync-Guard is only available on ATOM Digital

³ Heater Bakeout is a potential future addition on ATOM products

⁴ MicroFUSION 3-Leg only

⁵ Operates on a single phase of the three phase controller only

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Three Phase Controllers <i>(continued)</i>	ATOM	uFUSION SX	uFUSION HX
Shorted SCR Alarm	●	●	●
Shorted SCR Alarm Output	●	●	●
Open Load/Heater Alarm	●	●	●
Partial Load Fault Detection	●	●	●
Communications & Connectivity			
USB Connection	USB-C	MICRO USB	MICRO USB
CCI-Link Connectivity	–	●	●
Fieldbus options: ModbusTCP, EtherNET I/P, Profinet	○	○	○
Fieldbus option: EtherCAT	○	VIA GATEWAY	VIA GATEWAY
Free Control Panel Software	●	●	●
Remote Display	–	○	○
Hardware and Certifications			
DIN Rail Mount	●	UP TO 32A	UP TO 32A
Panel Mount	●	●	●
24 VDC Control Powered	●	●	●
Electrically Touch-Safe	●	●	●
SCCR / UL / cUL / RoHS / CE (with filter)	●	●	●

CONTACT / TECHNICAL SUPPORT

TEL: (952) 474 - 6200
FAX: (952) 474 - 6070

(800) 765 - 2799
www.ccipower.com

8077 Century Blvd, Chanhassen, MN 55317, USA