

ELECTRON[®]



Product Catalog 2018

About Electron

Established in 1982, Electron invented the first ever Automatic Changeovers, bringing to market a product that is now ubiquitous in electrical installations across India (and even coined the name “ACCL”, now an industry standard!). More than 35 years later, Electron continues to be the leader and pioneer in ACCL technology, with a reputation for being a company which excels at turning unconventional ideas into successful products.

Along the way, the Electron brand has set milestone after milestone, and earned customer satisfaction incessantly with a proven track record of delivering premium, innovative, quality products. Today, customers in over two million homes and offices have their lives made easier by an Electron product.

Apart from ACCLs, Electron offers a number of unique products such as the OLP-3+ AC starter, Fridge-Guard & TV-Guard. Each of our products is designed and produced in coherence with our core values as a company – innovation, simplicity, customer and environmental friendliness, and an unwavering commitment to quality.

In order to meet scaling industry demands, we have now set up a new unit in Calcutta.

Some of our prestigious clients include :

- Indian Railways
- Brigade Group
- Prestige Group
- Alcove Group
- Ashiana Group
- Sobha Developers
- Space Group
- Adani Group
- Among many others.

Automatic Changeover-cum-Current Limiter (ACCL)

ACCL is a fully automatic, high precision system installed in apartments, residential complexes and commercial buildings. It has the following functions:

- The ACCL allows unrestricted power on Mains. If both EB and DG supplies are available, EB is given preference.
- When EB fails and the standby Generator is ON it transfers the load to DG and begins monitoring the load.
- While on DG, if the load current exceeds a pre-set limit, the output trips. Other consumers who are within limits continue enjoying uninterrupted DG power. After 8/10/12 seconds, the load is reconnected and monitored again. If the current drawn has been reduced by switching off unneeded appliances, supply continues, else, it trips again.
- When EB gets restored, the ACCL automatically disconnects the load from DG and transfers to EB.

Features and benefits:

- Microcontroller based design for superior performance, replacing outdated manual systems at no extra cost.
- No separate wiring required.
- Available in single-phase and 3-phase configurations, up to 125A capacity.
- DG metering (Class 1.0) models with RS-485 connectivity available.
- Assured availability of allotted current - no less, no more. Ensures equitable rationing of generator power.
- DIN channel mountable enclosures save space and make installation hassle-free.
- Display of key parameters such as current, voltage, pre-trip and trip indication.
- Best-in-class design and aesthetics.
- Fire-retardant polycarbonate body for increased safety.
- Simple operation with clear indication of states – set it and forget it!

Single Phase ACCLs



M304

- TP MCB size ACCL with LED indication of operational states.
- All new design and aesthetics.
- Ultra-low self-consumption of power.

Rated Loads	30A (EB); 20A (DG)
Suited for	Lighting loads only.
Dimensions (WxHxD)	54 x 85 x 75 mm
Switching device	Relay



M305 - SP ACCL with Display

- In-built display of current, trip setting, and fault indication.
- Under/over-voltage protection on DG.
- TP MCB size (54 mm), DIN-channel mounting.
- DB compatible design for in-home installation.

Rated Loads	30A (EB); 20A (DG)
Suited for	Lighting loads only.
Dimensions (WxHxD)	54 x 85 x 75 mm
Switching device	Relay



M32D

- Heavy-duty, all-new contactor+relay hybrid design for single-phase mixed loads up to 32A.
- FP MCB width (72 mm) - saves panel space.
- DIN-channel mounting.

Rated Loads	32A (EB); 32A (DG)
Suited for	Lighting + power loads.
Dimensions (WxHxD)	72 x 147 x 132 mm
Switching device	Contactor+Relay (Hybrid)



M50D

- Interlocked dual contactor design for increased robustness.
- Suitable for lighting + power loads up to 50A.

Rated Loads	50A (EB); 50A (DG)
Suited for	Lighting + power loads.
Dimensions (WxHxD)	121 x 132 x 134 mm
Switching device	Contactor

Three Phase ACCLs



M28F+/M45F+ - ACCL with Meter

- ACCL with full class 1.0 DG kWh meter built-in.
- Backlit LCD for display of all DG parameters – kWh, kW, kVAh, currents, voltages, power factors, etc.
- RS-485 connectivity for integration with BMS/cloud.
- DIN-channel mounting.

Rated Loads	28A/45A (EB); 28A/45A (DG)
Suited for	Lighting + power loads.
Dimensions(WxHxD)	122x157x148 mm
Switching device	Contactor



M28F/M45F

- Time-tested 3 phase ACCLs with interlocked contactor design
- Pure white FR polycarbonate enclosure with fine, custom-made terminals for better operation and aesthetics.

Rated Loads	28A/45A (EB); 28A/45A (DG)
Suited for	Lighting + power loads.
Dimensions(WxHxD)	121x132x134/122x157x148mm
Switching device	Contactor



M63F/M70F

- High current capacity ACCLs for luxury residential and commercial projects.
- Fire-retardant polycarbonate body—unique in its class!
- Option for both DIN-channel and surface mounting.

Rated Loads	63A/70A (EB); 63A/70A(DG)
Suited for	Lighting + power loads.
Dimensions(WxHxD)	185 x 220 x 180 mm
Switching device	Contactor



ATS 80/ATS 125

- ATS models monitor all three phases continuously and give priority to DG in case any of the EB phases are unhealthy, acting as a mains single-phasing preventer (when DG is on). The ATS 80 comes in the same FRPC body as M70F, whereas the ATS 125 is built in a robust sheet-metal enclosure.

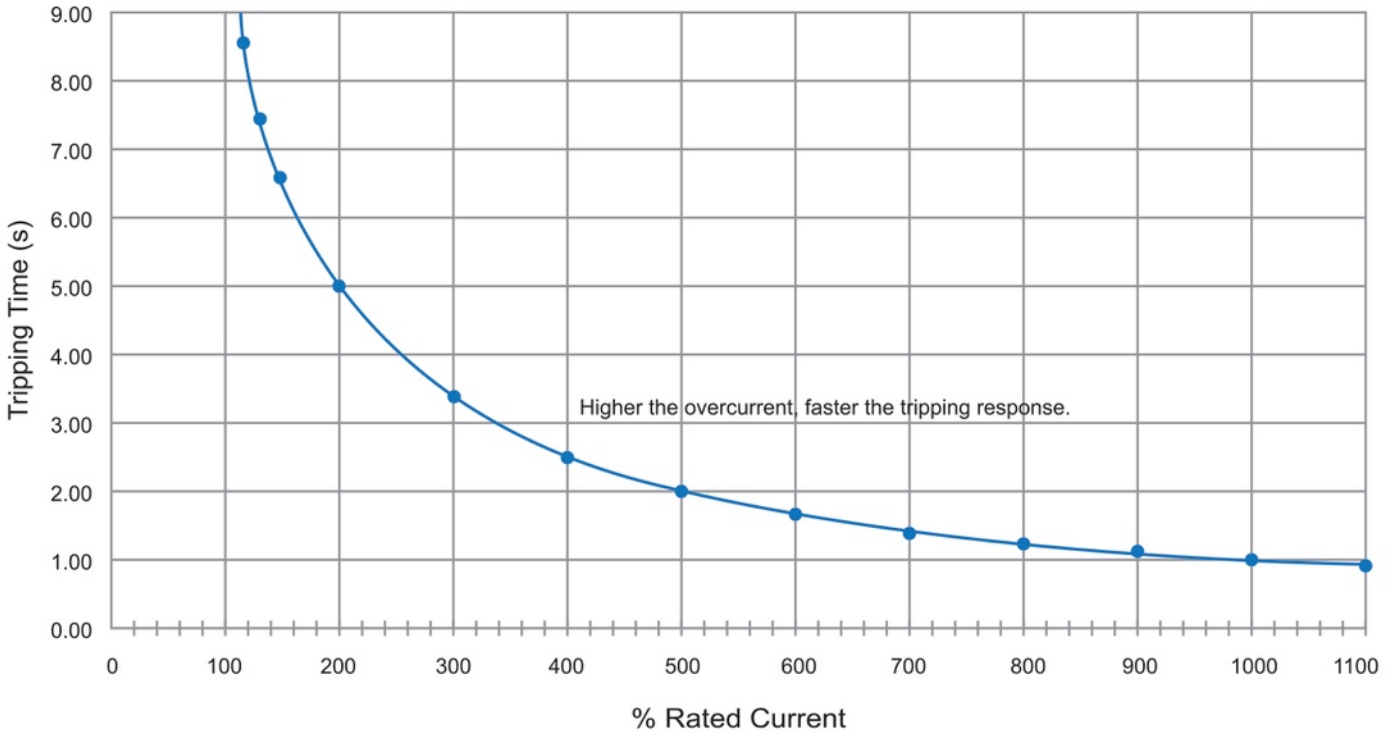
Rated Loads	80A/125A
Suited for	Lighting + power loads.
Dimensions (WxHxD)	185x220x180/265x250x165 mm
Switching device	Contactor

Technical Specifications

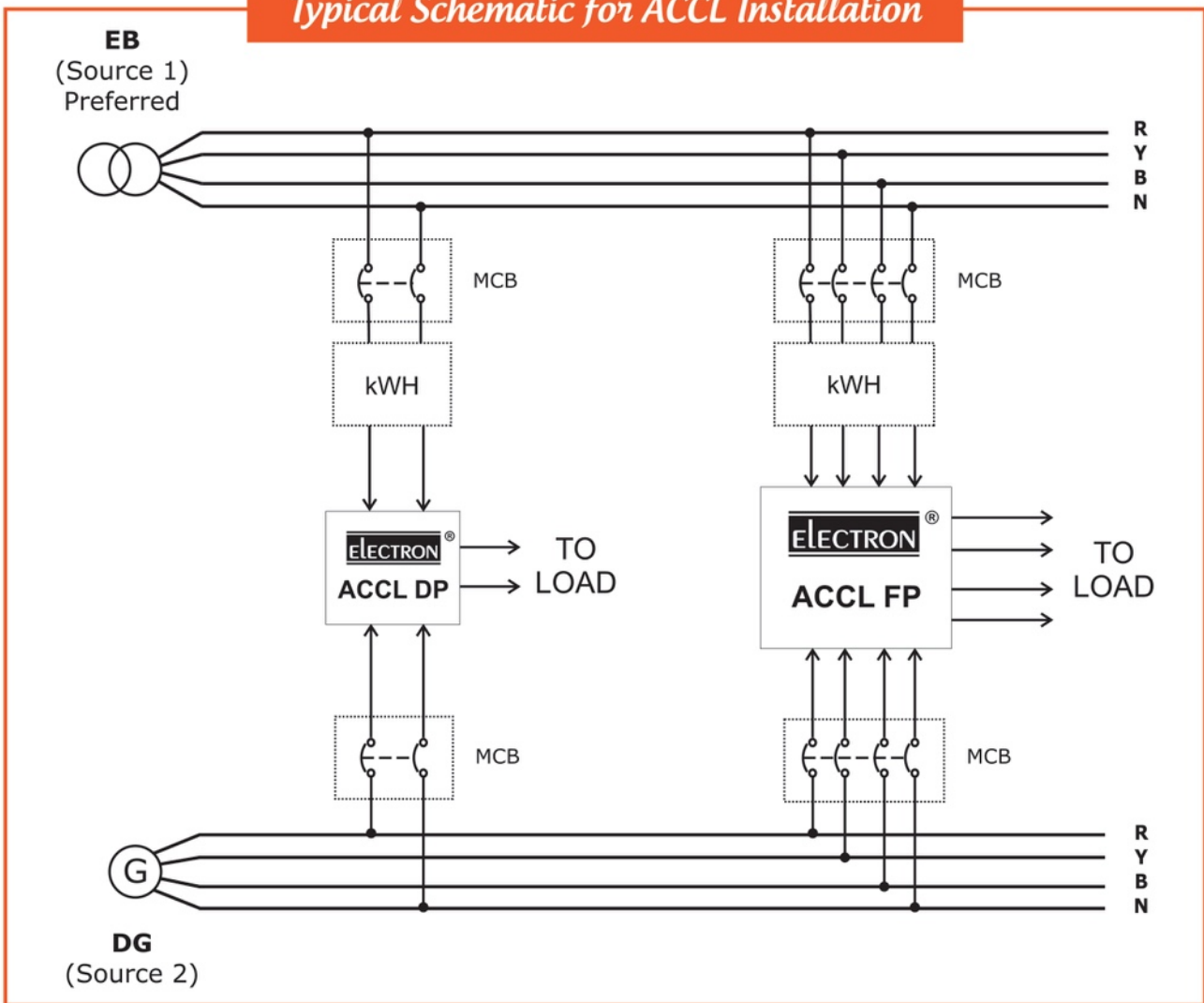
	Single Phase ACCLs		Three Phase ACCLs			ATS Models				
	M304	M305	M32D	M50D	M28F/M28F+		M45F/M45F+	M63F	M70F	ATS 80
No. of Poles	2 (1P+N)									
Rated Voltage	240V, 50 Hz.									
Mains Rated Current (AC1)	30A	30A	32A	50A	28A	45A	63A	70A	80A	125A
Mains Rated Current (AC3)	-	-	18A	30A	18A	25A	40A	50A	65A	95A
Generator Trip Range (AC1)	0.5-20A	1-20A	1-30A	1-45A	1-25A	1-40A	1-50A	1-63A	1-80A	1-125A
Operating Voltage Range (Mains, P-N)	70-320V									
Operating Voltage Range (Gen, P-N)	170-250V									
Generator output on-delay	4-12 seconds									
Transfer Time	0.5 seconds	2 seconds		1 second						
Self-resetting Time (after tripping)	4-10 seconds									
Under/over-voltage Protection (Mains)	-									
Under/over-voltage Protection (Gen)	Yes, 170-270V									
Utilisation Category	AC1/AC7a									
Electrical Endurance (Operations)	100,000									
Enclosure Material	Polycarbonate (Fire-retardant)									
Mounting Type	DIN (35mm)		DIN (35mm / 75 mm)		DIN (35mm / 75 mm)		DIN (35mm / 75 mm) / Surface			
Terminal Capacity	6 mm ²		16 mm ²		16 mm ²		35 mm ²			
Dimensions in mm (W x H x D)	54 x 85 x 75 (3-module)		72 x 147 x 132		121 x 132 x 134		122 x 157 x 148		185 x 220 x 180	
Conformity	IEC 60947-4 / IEC 60947-6-1									
Protection Class	IP20									
Ambient Temperature	-10° - 65°C									
Rated Insulation Voltage	1.1 kV									
Load Switching Device	Relay		Hybrid (Contactor + Relay)		Interlocked Dual Contactor					
Short-circuit withstand capacity	3kA									
Optional on-demand features	Generator output lock-out; Site-recalibration; Automatic generator on/off command.									
Display	-	Yes	Optional	-	Optional/Yes					
Display Parameters	-	Current, trip setting, fault status indication.	Optional	-	Voltage, Current, kVA, KW, kWh, Frequency, PF, RS-485 Bus ID #					
DG Energy Metering	-	-	-	-	Yes, Class 1.0 with RS-485 #					

MxxF+ models only.
Due to continuous improvements, specifications are subject to change without prior notice.

ACCL Tripping Time vs. % Rated Current



Typical Schematic for ACCL Installation



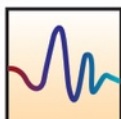
Installation notes :

1. RCCB should be connected at outgoing of ACCL.
2. Use copper terminations only and tighten all screws completely.



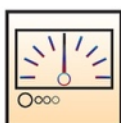
OLP 3+ Air-conditioner Starters

Today, air-conditioners are usually the highest energy-consuming appliance in a home, and also one of the most expensive. The all-new OLP 3+ is an advanced microprocessor-controlled motor starter designed to ensure safety and long life of your air-conditioner using the time-tested combination of VOLTCHECK, AMPCHECK, and TIMECHECK. The vivid 3-digit display shows all operational parameters such as voltage, current, reason for trip, and time remaining till reset, for user interest and awareness of their AC's consumption characteristics. Available in 11A, 16A, 21A, 25A, 27A and 30A configurations.



VOLTCHECK :

OLP 3+ monitors the line voltage and trips if safe limits (160-270V) are breached. If tripped, the reason (Hi/Lo) and value of unsafe voltage are shown.



AMPCHECK :

Current drawn by the AC is monitored continuously, and the output is disconnected if this exceeds a pre-set limit. This protects the compressor from damage due to rotor locking or excessively long start-up time. Tripping follows an inverse time-current characteristic - higher the overload, faster the tripping response. After tripping, the overload current is shown on the display.



TIMECHECK :

On tripping, OLP 3+ holds the output open for a duration of 3 minutes from the time of last compressor operation, and then restarts the AC automatically. This is important safety measure for the compressor. When TIMECHECK is active, the display indicates the number of minutes left for AC to restart, along with trip information.

Rated Voltage	240V (P-N), 50 Hz., 1-phase
Rated Current (AC1)	Upto 30A
Operating Voltage Range	90-320V
Under/over-voltage Protection	160-270V
Electrical Endurance (Operations)	100,000
Enclosure Material	Polycarbonate (Flame-retardant)
Mounting Type	4-module box
Mounting Centre	120 mm
Terminal Capacity	10 mm ²
Dimensions in mm (W x H x D)	146 x 88 x 44
Protection Class	IP20
Ambient Temperature	-10° - 65°C
Display Parameters	Line Voltage, Current, Fault indication, Time before restart.
Protection Features	VOLTCHECK, AMPCHECK, TIMECHECK



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