

E-POWER

ECM800 Series

Intelligent Motor Protection and Control Devices

ECM801

➔ ECM800



35mm DIN rail mounting

Reliable electromagnetic compatibility

Optional display module for local operation

Pluggable terminals, easy to install and maintain

Measurement, protection, control and communication

E-Power Technology Ltd.

<http://www.e-powertech.ca>

ECM800 series function configuration

= standard

= optional

Protection	ECM800	ECM801
Start overtime		
Overload		
Overcurrent		
Phase failure		
Current unbalance		
Short circuit		
Earth fault		
Underload		
External fault		
Leakage current		
Temperature (PTC/NTC)		
Overvoltage		
Undervoltage		
Under power		
Phase sequence error		
EEx e overload(tE)		
Analog input		
Motor Starting Control Mode	ECM800	ECM801
Protection mode		
Direct starter		
Reversing direct starter (Rev_DS)		
Star/delta starter with 2 relays (S/D Starter)		
Loop-open star/delta starter with 3 relays (S/D_3R_Open)		
Loop-close star/delta starter with 3 relays (S/D_3R_Close)		
Autotransformer starter with 2 relays (Autotf starter)		
Loop-open autotransformer starter with 3 relays (Autotf_3R_Open)		
Loop-close autotransformer starter with 3 relays (Autotf_3R_Close)		
Breaker direct starter		
DI	ECM800	ECM801
DIs in main module	8	9
Extended digital module can provide 11 DIs at the most.		

DO	ECM800	ECM801
DOs in main module	4	5
Extended digital module can provide 4 DOs at the most.		
Measurements	ECM800	ECM801
Three phases current		
Zero phase sequence current		
Current unbalance rate		
Three phase/phase voltage		
Active power, Reactive power		
Power factor		
Frequency		
Active energy		
Leakage current		
Communication	ECM800	ECM801
MODBUS-RTU		
The other MODBUS-RTU		
PROFIBUS-DP		
Analog Output	ECM800	ECM801
4 ~ 20mA analog output; Analog parameter can be programmed		
Analog Input	ECM800	ECM801
Extended analog module can provide 2 route of 4~20mA analog input at the most		
Trip Events	ECM800	ECM801
8 trip events including the trip reasons and the trip time can be stored.		
Statistic Information	ECM800	ECM801
Total running time		
Total stopped time		
Total stop operation times		
Total trip times		
Restart Function	ECM800	ECM801
In case of a voltage dip, motor can be restart after the restoration in certain cases.		

ECM800 Low Voltage Motor Protection and Control Device

Description

ECM800 low voltage motor protection and control device is designed for protecting the low voltage motors from various fault conditions. It is an intelligent unit with high cost-effective and stability. It integrates relay protection, measurement, control and communication all in one,

ECM800 samples the 3- phase current, 3-phase voltage, zero-sequence current. The data are then applied to the algorithms and compared to the device's configuration information. Based on the result of the comparison, the controller may trip one or more of the on-board control relays.



Application

- Low voltage AC motors, motor control centers

Feature






- Compact designed integrates measurement, protection, control and communication
- Provides 7 types of standard protection functions and 8 types of optional protection functions
- Provides 10 types of motor starting mode
- Build-in CTs for rated current up to 100A
- LED indicators in main module
- Optional panel for local operation
- Reliable electromagnetic compatibility
- DIN rail mounting

Performance Index

- Power frequency withstand voltage: AC2kV/ min. ~1mA
- Insulation resistance > 50M
- Impulse withstand voltage: 5kV (peak), 1.2/50uS
- Digital input: 8 routes, external power supply. (internal power supply is available upon special require in order.)
- Relay output: 4 relays, 3NO, 1NC
- capacity of control relay output:250VAC/10A or 30VDC/ 5A
- Analog output load resistance: 350
- Power supply input: 85~265VAC, 80~ 300VDC
- Communication protocol: RS485 port/ MODBUS protocol, or PROFIBUS-protocol
- Electrical fast transient/burst immunity test: IEC61000-4-4, Level 3
- Surge immunity test: IEC61000-4-5, Level-3
- Electrostatic discharge immunity test: IEC61000-4-2, Level 3
- Radiated immunity test: IEC61000-4-3, Level 3
- Operating temperature: -20~ 55 , humidity: 10~90%, non-condensing
- Storage temperature: -40~70 , humidity: 10~95%, non-condensing

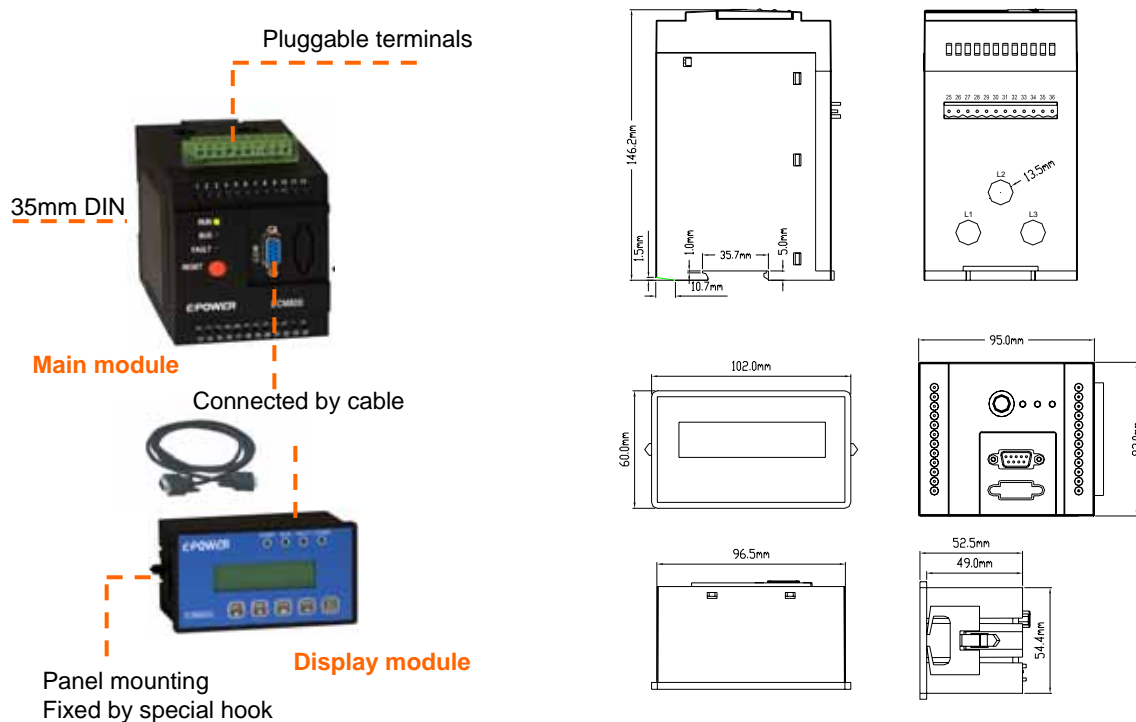
ECM800 -- Components

The whole components include:

Main Module	Measurements, control, protection and communication functions etc.	
Display Module	Read parameters from main module, set parameters to main module, or send control command to main module.	
Power Supply Module	If a system has AC and DC power supply to the device at the same time, the power supply module can be selected.	
Leakage Current Transformer	The leakage current transformer is used to measure leakage current of a motor circuit. It is needed, if the leakage current protection function is selected.	
External Current Transformer	When the rated current of a motor is over 100A, external CTs are needed to measure the current of motor.	

Note: Not all the above components are necessary. They can be selected according to requirements.

Dimension and Installation



Order Information

ECM800-- -- -- -- (main unit)

: Rated Current		: Protection Function	
2	2A	S	<i>Standard Protection</i>
6.3	6.3A	C	<i>Leakage Current Protection</i>
25	25A	X	<i>EEEx e Overload Protection</i>
100	100A	L	<i>Underload Protection</i>
: Rated Voltage		T	<i>Temperature Protection</i>
0	No Voltage Measurement	V	<i>Voltage Protection</i>
380	380V	: Auxiliary Function	
: Communication Protocol		A	<i>One 4-20mA Analog Output</i>
N	No communication	E	<i>Trip Events</i>
M	MODBUS-RTU	S	<i>Statistic Information</i>
P	PROFIBUS-DP		

Optional Module

External CTs	3 CTs for motor's current 100A
ECM800D2	Display panel for local control

Note:

- The functions dedicated with italics can be selected together.
- The standard protections include start overtime protection, overload protection, overcurrent protection, phase failure protection, current unbalance protection, earth fault protection, short circuit protection.
- Voltage protections include overvoltage protection, undervoltage protection, under power factor protection, phase sequence error protection.
- When the rated current of motor is over 100A, external CTs are needed. The CT ratio can be set in the main module. The overload capacity of CT should be over 8 times of the motor's rated current. And the rated current of ECM800 should be selected as 2A or 6.3A to match the external CTs. The external CTs can be provided by the users or by E-Power Technology Co., Ltd..

How to choose the rated current of ECM800 to match your motors?

Rated Power of Motor (kW)	External CTs	Rated Current of ECM800
0.1—1.1	None	2A
1.1—3.1	None	6.3A
3.1--11	None	25A
11--45	None	100A
Above 45kW	Equip the external CTs according to the rated current of motors	If CT secondary output is 1A, choose 2A, If CT secondary output is 5A, choose 6.3A

Typical Connection

