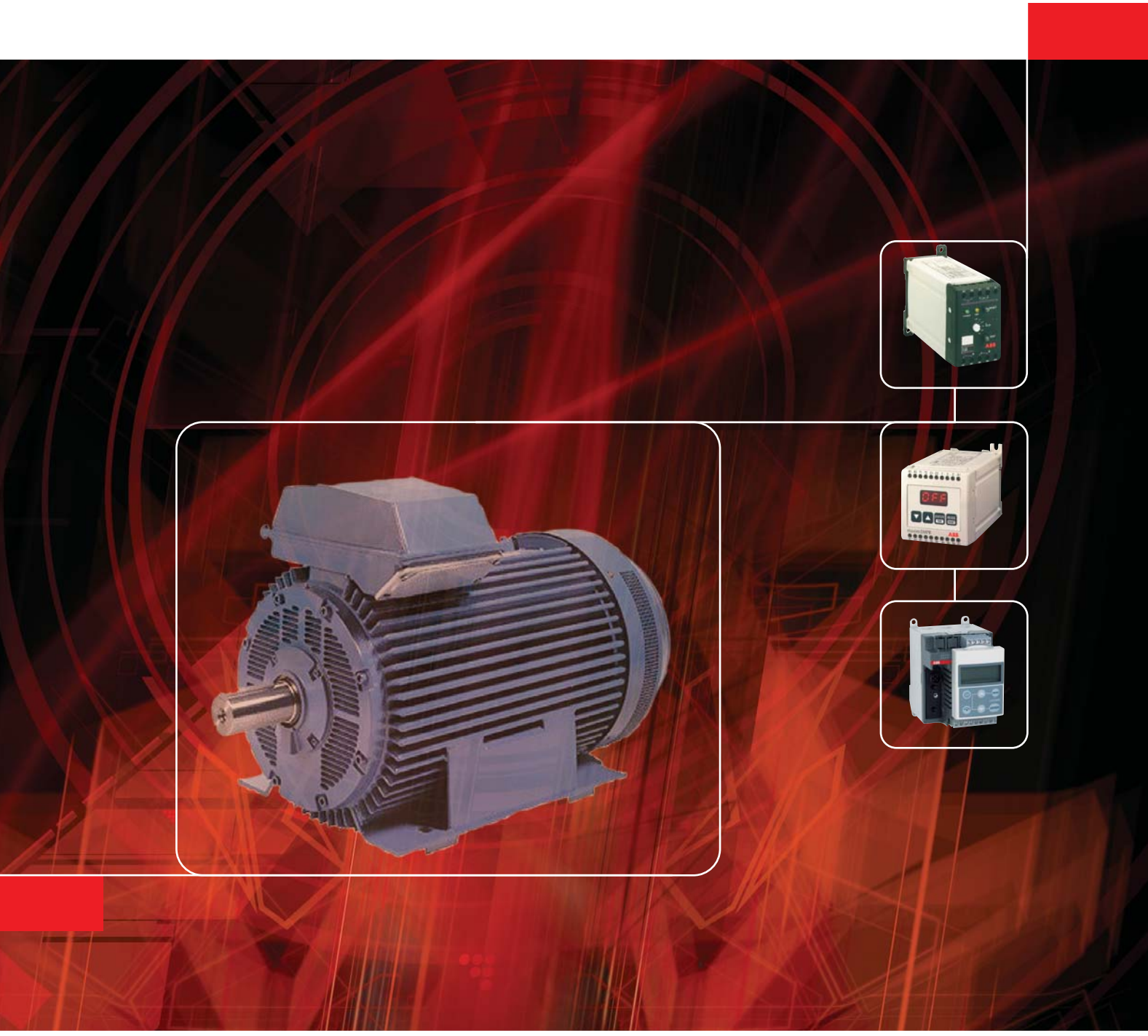
Maxim and UMC Devices

Universal Motor Control and Protection

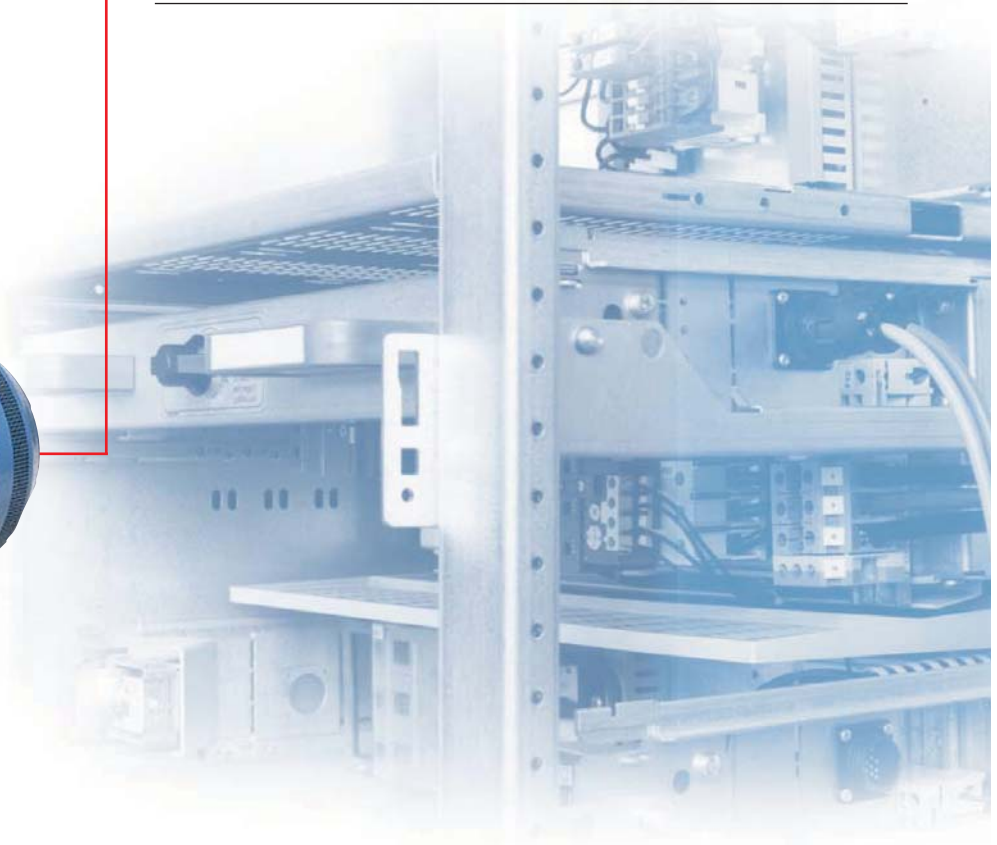


Maxim - UMC22 Motor Protection & Control

Maxim Protection

UMC Control, Protection & Communications

Selection



Maxim Electronic Motor Protection

Why Protect your Motor?

50% of motor failures are triggered by overheating due to overload, phase failure or insulation breakdown.

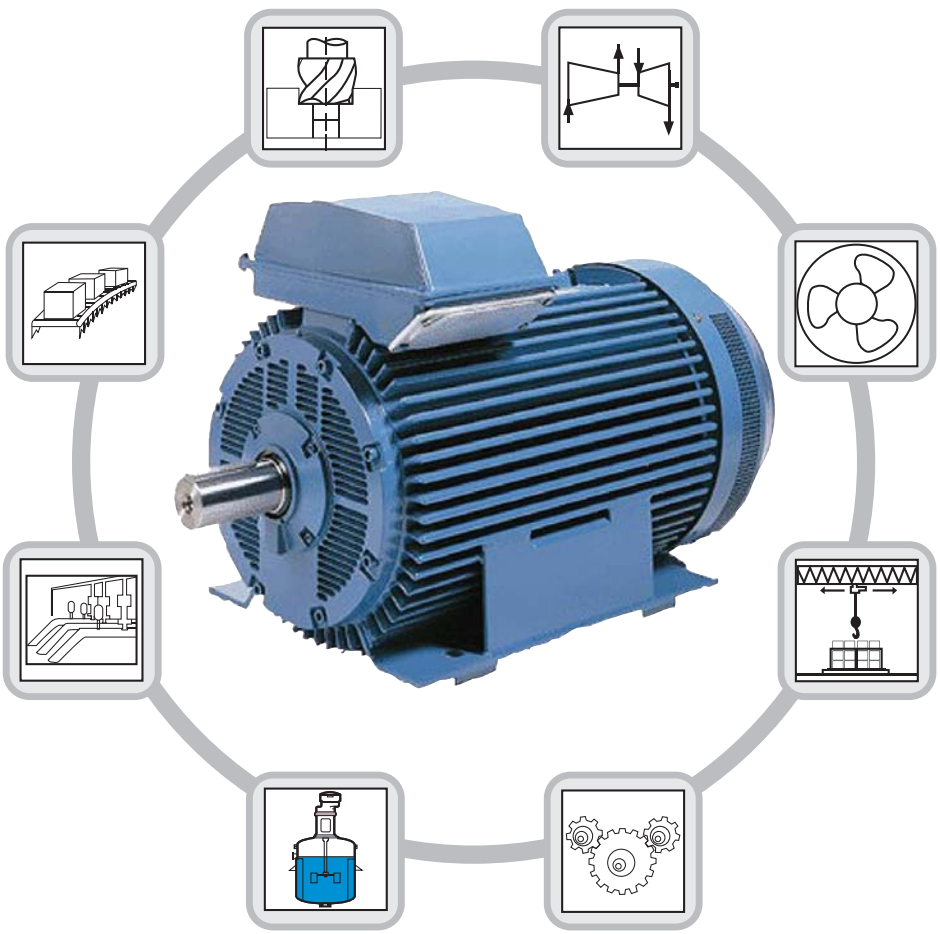
A 10% temperature rise reduces your motor life by 50%

The Maxim Range of products protect your motor against the cause of temerature rise.

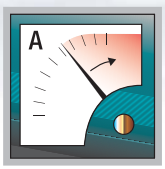
Devices within the range also provide protection against other causes of motor and equipment damage.

For Example:

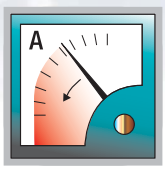
- Belt break on conveyor or fan
- Excess conveyor loading
- Mixer jamming
- Dry Pump



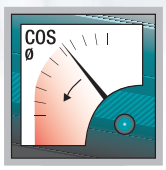
Comprehensive Protection within ONE RANGE



Overcurrent



Undercurrent

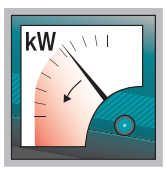


Power Factor

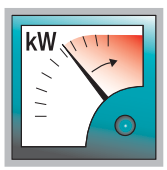
Overvoltage

Undervoltage

Frequency High/Low



Power Low



Power High

Phase Loss


Thermistor

Phase Imbalance


Earth Fault

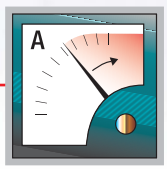
Features:

- Controling
- Monitoring
- Protecting
- Networking

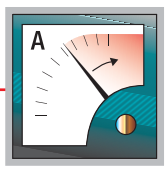
Integrated Motor Modules
Motor protection Modules

Maxim Integrated Motor Protection

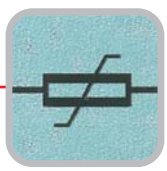
The **Maxim EMPR** combines five of the most common types of protection providing a complete solution within one compact, easy to use unit.



Overcurrent

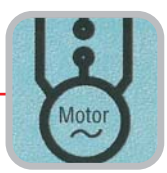


Undercurrent



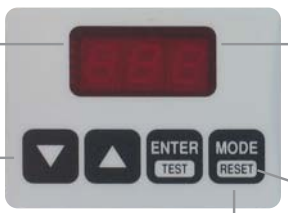
Thermistor

Earth Fault



Phase Loss

- LED display of status
- Easy programming via membrane keypad
- Din rail mounting
- Retentive trip memory
- Four alarm relays for fault indication



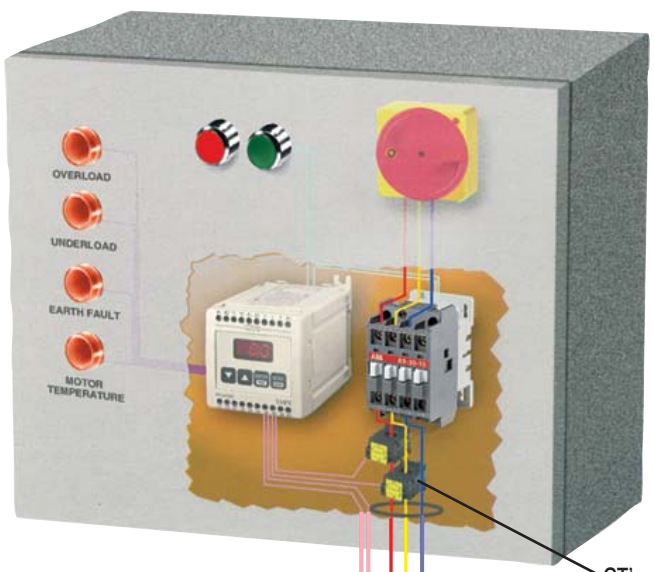
- Selectable overload protection classes
- Start, fault and reset delay setting options

- Display of running current a % of FLC
- Fault code display when in trip condition

- Security code to protect settings
- Full set up programming for all protection values

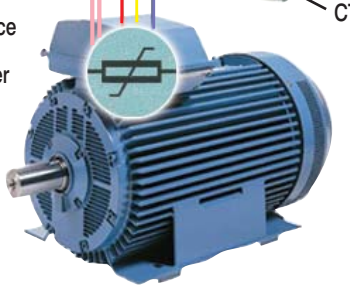
Dimensions

H - 84mm
W - 66mm
D - 116mm
Kg - 0.35kg



CT's

Core Balance Current Transformer (optional)



Part Number	Supply	Latch	Core Balance CT	Current Transformers
EMPR 115L000	115V	YES	75kw - 11.000587.100	75kw - 11.000587.100
EMPR 230L000	230V	YES	250kw - 11.000587.200	20A - 01.000158.221
			630kw - 11.000587.300	50A - 01.000158.222
				100A - 01.000158.223
				200A - 01.000158.505•
				500A - 01.000158.300•
				1000A - 01.000158.302•
				2000A - 01.000158.303•
				3000A - 01.000158.304•

Notes: For earth fault detection one CT is required (optional)

• Extended CT's - Part Number 01.000158.221 also required

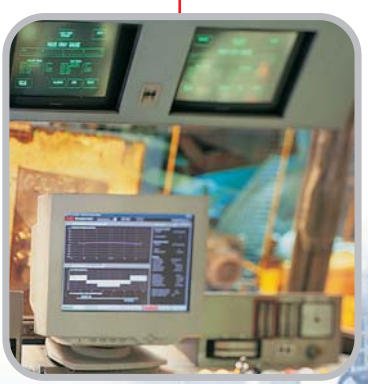
Two CT's are required for general applications

Maxim Motor Protection Modules

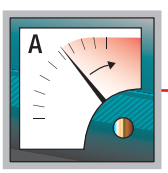
The Maxim Range of motor protection modules offer nine units which you can select to provide the required protection for your system.

other features:

- Remote or auto reset
- Memory retentive versions on power loss - latching relay
- Selectable trip delay



DMPO



Overcurrent

Basic overload protection

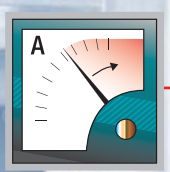
Part Number	Latch	Supply	Extended CT's
DMPO 230S000	NO	90-264V	130A - 01.000158.505
DMPO 400S000	NO	195-480V	325A - 01.000158.300
DMPO 230L000	YES	90-264V	650A - 01.000158.302
DMPO 400L000	YES	195-480V	1300A - 01.000158.303
			30000A - 01.000158.304

Notes: Two CT's are required for general applications

Integral CT's up to 32A

Dimensions - H84 W66 D116mm
Weight - 0.65kg

DMPR



Overcurrent

Thermistor

Phase Loss

Advanced overload protection

Part Number	Supply	Latch	Current Transformers
DMPR 230S000	115-230V	NO	40A - 01.000158.221
DMPR 400S000	400V	NO	100A - 01.000158.222
DMPR 230L000	115-230V	YES	200A - 01.000158.223
DMPR 400L000	400V	YES	500A - 01.000158.300•
			1000A - 01.000158.302•
			2000A - 01.000158.303•
			3000A - 01.000158.304•

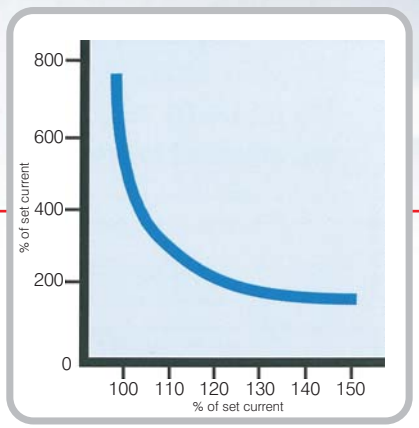
Notes: Two CT's are required for general applications

Integral CT's up to 32A

Dimensions - H84 W66 D116mm
Weight - 0.65kg

• Extended CT's - Part Number 01.000158.221 also required

Maxim Motor Protection Modules



ELM

Earth Fault

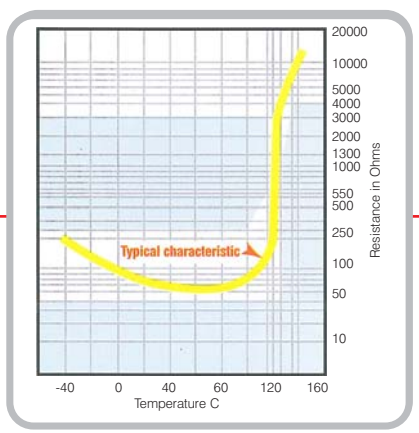
Earth Fault detection

Part Number	Supply	Latch	Core Balance CT's
ELM 115.S000	115V	NO	75kw - 11.000587.100
ELM 230.S000	230V	NO	250kw - 11.000587.200
ELM 400.S000	400V	NO	630kw - 11.000587.300
ELM 115.L000	115V	YES	
ELM 230.L000	230V	YES	
ELM 400.L000	400V	YES	

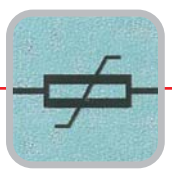
Notes:

Dimensions:
H - 84mm W - 45mm D - 116mm
Weight - 0.30kg

One CT is required



TOL



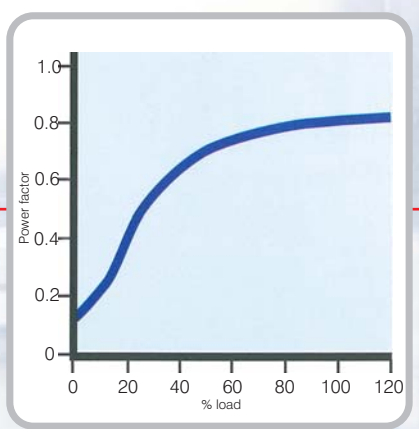
Thermistor

Motor Temperature monitoring

Part Number	Supply	Latch
TOL+115L000	115V	YES
TOL+230L000	230V	YES
TOL+400L000	400V	YES

Notes:

Dimensions:
H - 84mm W - 45mm D - 116mm
Weight - 0.30kg



PHANGLE

Power Factor

Underload detection

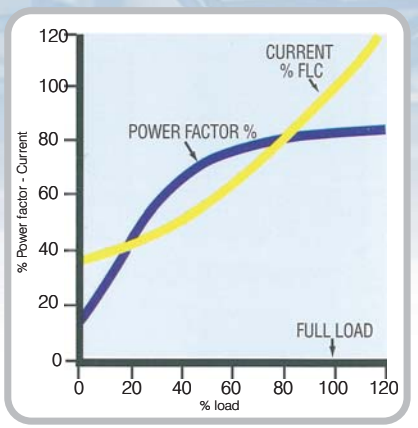
Part Number	Supply	Latch	Extended CT's
PHAN 400L000	400V	YES	100A - 01.000158.401
			250A - 01.000158.402
			500A - 01.000158.403
			800A - 01.000158.404
			1600A - 01.000158.405

Notes:

Dimensions:
H - 84mm W - 45mm D - 116mm
Weight - 0.22kg

Internal CT up to 32A

One CT is required



PAIR

Overcurrent

Power Factor

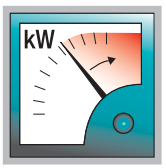
Overload and Underload protection

Part Number	Supply	Latch	Current Transformers
PAIR400L000	400V	YES	320A - 01.000158.505
			800A - 01.000158.300
			1600A - 01.000158.302
			2000A - 01.000158.303
			3000A - 01.000158.304

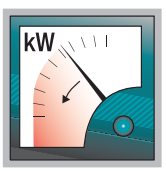
Notes: Dimensions:
H - 84mm W - 66mm D - 116mm
Weight - 0.30kg

Two CT's are required for general applications

LPM



Power High



Low Power

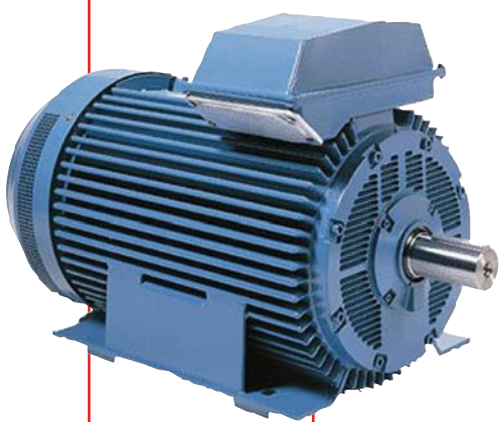
Overload and Underload detection-true power monitoring

Part Number	Supply	Latch	Current Transformers
LPM 400L000	400V	YES	200A - 01.000158.505
			500A - 01.000158.300
			1000A - 01.000158.302
			2000A - 01.000158.303
			3000A - 01.000158.304

Notes: Dimensions:
H - 84mm W - 66mm D - 116mm
Weight - 0.40kg

Internal CT up to 5A

One CT is required



Trip Limit and Timed Reset Inhibit

Part Number	Supply	Latch
PTLR 115L000	115V	YES
PTLR 230L000	230V	YES
PTLR 400L000	400V	YES

Notes: Dimensions:
H - 84mm W - 45mm D - 116mm
Weight - 0.28kg

Dimensions A	B	C	Weight	Part Number
97.5	80	22	0.24kg	01.000158.220
82	60	38	0.24kg	01.000158.221
82	60	38	0.24kg	01.000158.222
82	60	38	0.24kg	01.000158.223
125	100	71	1.00kg	01.000158.300
168	135	70	2.00kg	01.000158.302
168	135	70	2.00kg	01.000158.303
168	135	70	2.00kg	01.000158.304
137	95	30	0.79kg	01.000158.401

Dimensions A	B	C	Weight	Part Number
137	95	25	0.56kg	01.000158.402
137	95	25	0.42kg	01.000158.403
137	108	25	0.40kg	01.000158.404
137	120	30	0.45kg	01.000158.405
125	100	31	0.65kg	01.000158.505
70	97	15	0.11kg	01.000158.100
175	165	32	1.50kg	01.000158.200
203	195	32	2.50kg	01.000158.300

For maximum conductor size see data sheets

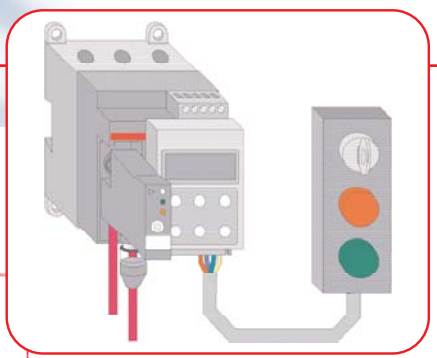
UMC22 Overview

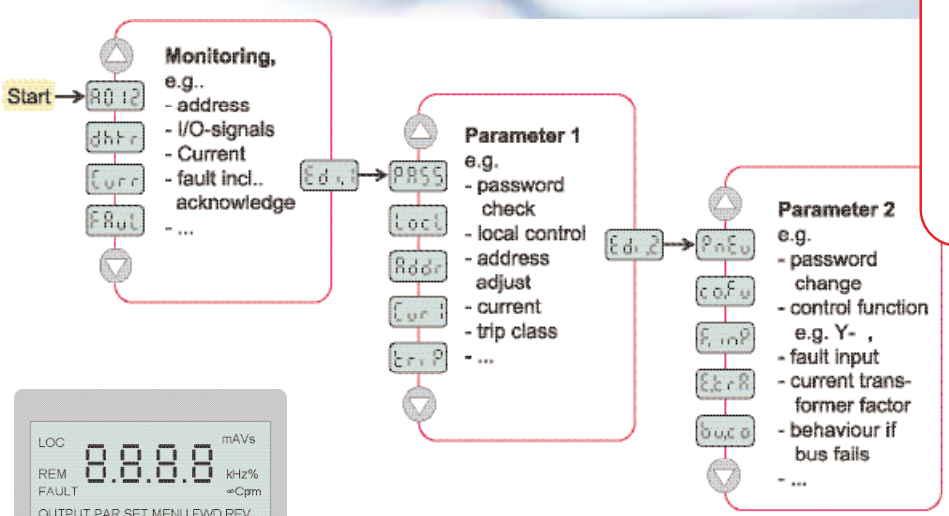
1. Mounting by four screws M4 or DIN rail
2. Current path
3. Terminals for digital outputs
4. Control Panel
5. FieldBusPlug interface (Fieldbus Neutral)
6. Terminals for digital inputs
7. Terminals for external supply voltage

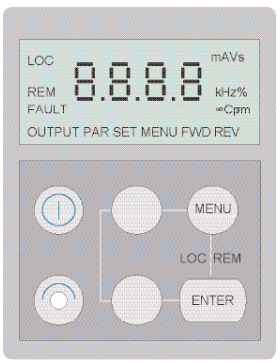
Features

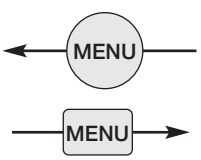
- Integrated motor control and protection
- Current range of 0.24 to 63A within one device
- Connection of current transformers for higher currents upto 850A
- 6 digital inputs (24 V DC) and 3 relay outputs (230 V AC)
- FieldBusPlug interface (Fieldbus neutral)
- Control Panel mountable on the front or door mounted
- Different control functions selectable, e.g. direct starter, reversing starter, star-delta starter, ...
- Electronic overload protection
- Trip classes 5, 10, 20, 30
- Phase loss protection
- Locked rotor / Shearpin protection
- Multi-function Inputs (x3) for eg. external devices, timing functions, fault reset, test, etc.
- Control
  - Via control system and fieldbus
  - Manual via mountable Control Panel
  - Manual via digital inputs with switches/pushbuttons

Control Panel (optional)







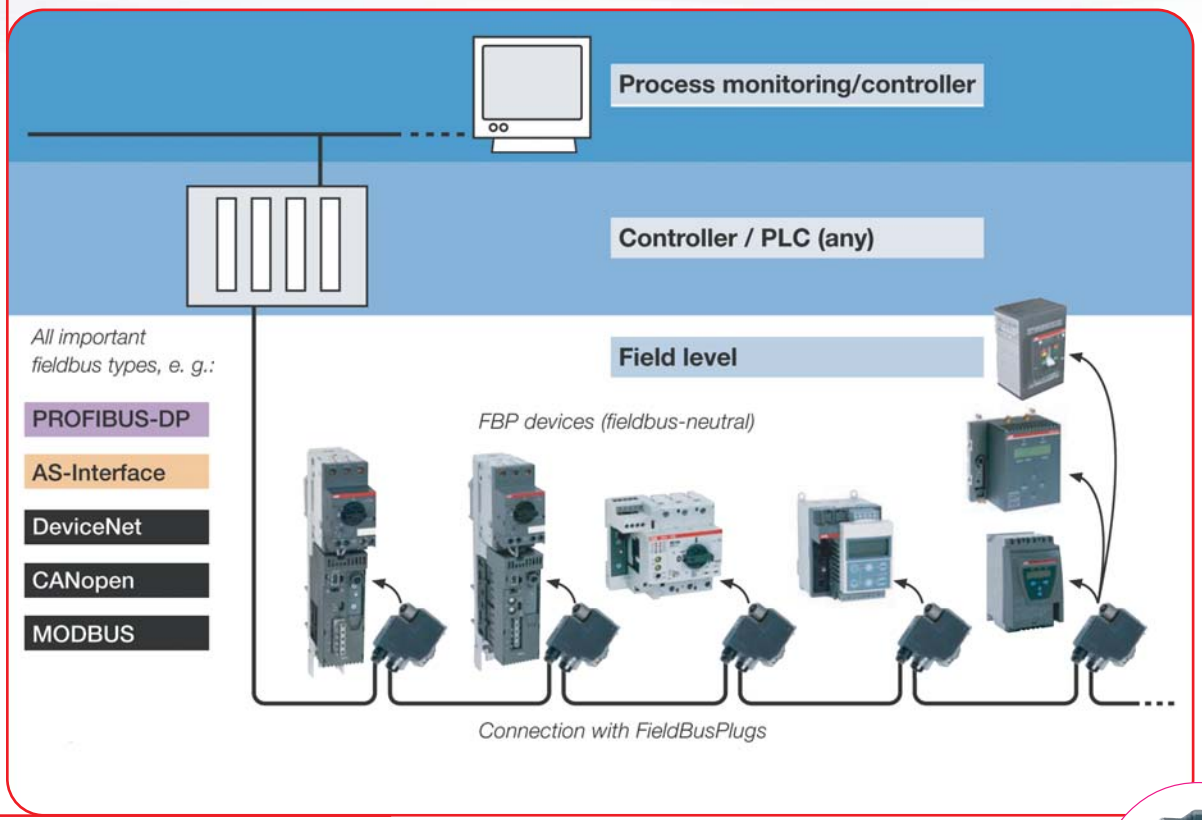


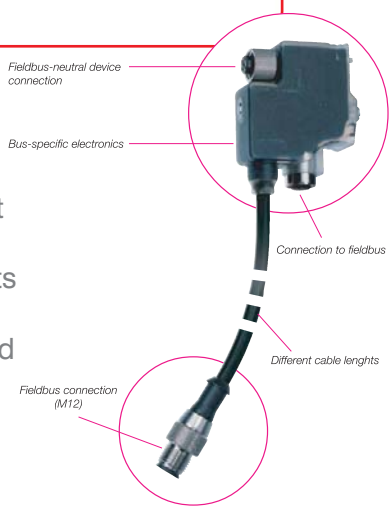
Accessories (optional)

- Mounting set for e.g. drawer unit, IP65 including 3m cable between UMC22-FBP and Control Panel

The FieldBusPlug concept for UMC22

This new ABB product family is a communication device range with switching and automation components which can be combined easily with standard fieldbus systems.





One device for all fieldbus types

Each complete device, and each function module within the product family, has a fieldbus-neutral interface. A specially prefabricated connection cable establishes the communications connection with its bus-specific plug interface. In this way, flexibility, transparency and reliability in the process are achieved. The connecting, operating and diagnostic elements are placed at the front of all devices providing increased ease of installation.

The components

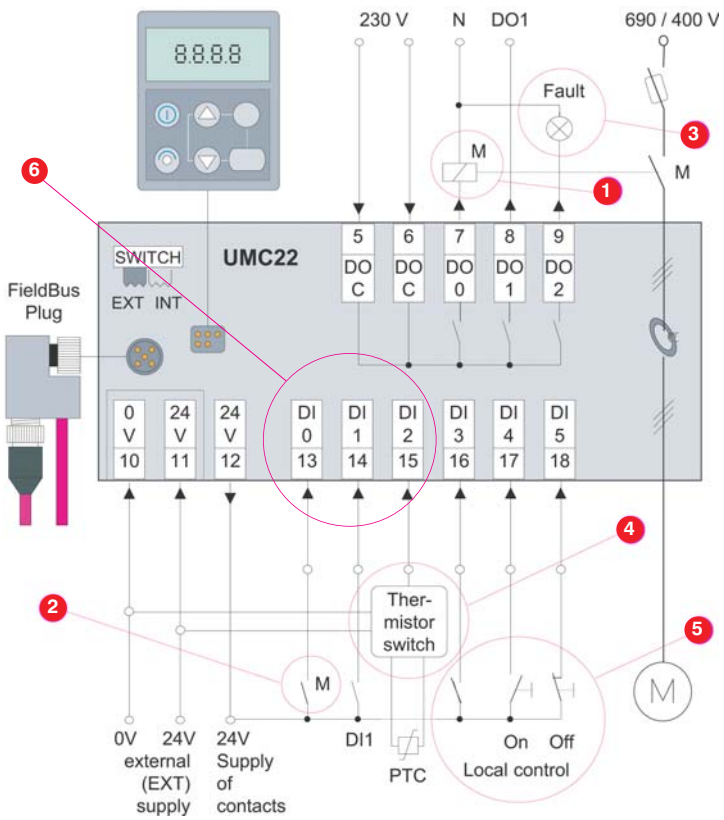
The fieldbus plug (FieldBusPlug) is the central communications element of the new product family. It connects devices and device combinations of different functions and characteristics as well as simple sensors with automation devices. A great variety of switching and automation modules belong to the product family seperated into similar performance characteristics, e.g. devices for motor protection, motor control and standard sensors.

UMC22 Motor Control and Protection

Supported Fieldbus:

- AS-i
- Profibus
- CANopen
- Devicenet
- Modbus

Example of Parameters



Direct Starter with all functions

Parameters Options:

1. Control function
2. Check-back via auxiliary contact
3. Fault output, e.g. to lamp
4. Fault signal input, e.g. for thermistor
5. Local control via inputs
6. Multi function inputs

Monitoring, Command and Diagnosis Signals

Commands

- Run Forward
- Off
- Run Reverse
- Auto Mode
- Fault Reset

Monitoring Signals

- Run Forward
- Off
- Run Reverse
- Local Control
- Fault
- Warning
- Reversing lock-out time

Diagnosis

- Self test failed
- External fault
- Overload fault
- Motor blocked
- Communication fault
- Parameter out of range
- Current check-back fault
- Relay 1-3 check-back fault
- Motor current high/low threshold
- Cooling time running
- Reversing Lock-out time running
- Parameter number

UMC Outputs

- Digital Output DO0
- Digital Output DO1
- Digital Output DO2

UMC Inputs

- Digital Input DI0
- Digital Input DI1
- Digital Input DI2
- Digital Input DI3
- Digital Input DI4
- Digital Input DI5

Description	Part Number
Universal Motor Control UMC22-FBP	1SAJ 510 000 R0300
Control Panel ACS100-PAN	1SAJ 510 001 R0001
Control Extension Cable ACS100-CAB	1SAJ 510 002 R0001

Maxim - UMC22 Selection

	DMPO	DMPR	TOL+	ELM	Phangle	PTLR	LPM	PAIR	EMPR	UMC22
Protection Function										
Current High	•	•						•	•	•
Current Low									•	•
Motor Temperature		•	•						•	
Shearpin		•							•	•
Earth Leakage				•					•	
Phase Loss		•								•
Power High							•			
Power Low							•			
Starts per Hour										•
Trip Limit						•				
Power Factor					•			•		
Trip Classes										•
Additional Controls										
Programmable Relay										•
Trip Delay		•					•	•	•	•
Start Delay	LINK	•					•	•	•	•
Reset Time	LINK	•				•		•	•	
Restart Time										•
Auto Reset	•	•	•	•	•		•	•	•	•
Reset Pushbutton	•	•	•	•	•	•	•	•	•	•
Auto Restart										•
Remote Restart	•	•	•	•	•	•	•	•	•	•
Indication										
Supply	•	•	•	•	•	•	•	•	•	•
Alarm	•	•	•			•		•	•	•
Trip Status	•	•	•	•	•	•	•	•	•	•
Alphanumeric Display									•	•
Special Features										
Analogue Setting	•	•		•	•	•	•	•		
Keypad Programming									•	•
Integral CT	•				•		•	•		•
Test Button	•	•	•	•				•	•	•
Alarm Relay									•	•
Auto Reset Timer		•				•		•	•	
Number of starts										•
Latch Option	•	•	•	•	•		•	•	•	
Trip Memory						•			•	•
Operating Hours										•
Automatic Restart ('Hot Swap')										•
Communications										
As-i										•
Profibus										•
Devicenet										•
Modbus										•
CANopen										•

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