

POWER MANAGEMENT

Design for Longevity





Murrelektronik views power management as the starting point for machine efficiency. Power conditioning, properly sized power supplies, current monitoring, redundancy and energy savings are all considered when we assemble a power management solution for our partners.

The combined technologies offered by Murrelektronik help you to achieve a power management solution tailored to your application, your budget and your peace of mind.

**Filter – Power – Redundancy –
Current Monitoring - Buffer :
all available from Murrelektronik**



Murrelektronik is your system partner:

From the control cabinet via the interface, active or passive into the field. We have a widely diversified product range and can supply you with well thought-out solutions that are made to fit your industrial automation applications - from a single source.

Murrelektronik's U.S. office and warehouse are located in the suburbs of Atlanta, GA. Our team is customer oriented and we strive to give our customers the very best in product, price, delivery and service. Backed up by a skilled technical support team and a distribution network across the country, we can provide detailed product and application advice from concept to completion.

| FILTERS



Corrupted signals can lead to faults in operations, the disruption of a production line, or the shutdown of machinery.

- Reduce transient voltages
- Recommended for all "BUS" installations

| BUFFERS



Emparro Cap is the buffer module for maximum system availability.

- Maintenance Free Ultra Capacitors

MB Cap: Stable power supply. Safe processes.

Murrelektronik's MB Cap Ultra modules are buffer modules that ensure a stable power supply thus guaranteeing secure industrial processes. They store energy and bridge voltage fluctuations of up to 38 seconds at 10A, or for several minutes at 1A, thanks to maintenance-free ultra capacitors.



| REDUNDANCY



MB Diode is a decoupling module for use with redundant power supplies.

MB Redundancy Balance

Murrelektronik's active redundancy module decouples two independent power supplies and generates a redundant 24V DC control voltage. It ensures an automatic 50:50 balancing power between the two units.



7 MICO Models with NEC Class 2 Approval



MICO PRO MODULAR CURRENT MONITORING

Mico Pro is Murrelektronik's innovative new current monitoring system. This modular system enables you to adapt Mico systems to suit specific applications while meeting both space and cost requirements.



MICO - 24V DC CIRCUIT MONITORING

Combine your power supplies with MICO, the intelligent power distribution system.

MICO is the intelligent power distribution module from Murrelektronik for 24V DC. It monitors currents, indicates when approaching the maximum load and ensures machine availability.

	Current Range	Monitored Circuits	Art. No.
MICO Basic	2A	4	9000-41064-0200000
	4A		9000-41064-0400000
	6A		9000-41064-0600000
	2A	8	9000-41068-0200000
	4A		9000-41068-0400000
	6A		9000-41068-0600000
MICO Classic	Current Range	Monitored Circuits	Art. No.
	1A, 2A, 3A, 4A	2	9000-41042-0100400
	1A, 2A, 4A, 6A		9000-41042-0100600
	4A, 6A, 8A, 10A		9000-41042-0401000
	1A, 2A, 3A, 4A	4	9000-41034-0100400
	1A, 2A, 4A, 6A		9000-41034-0100600
	4A, 6A, 8A, 10A		9000-41034-0401000
	Channels 1 & 2: 1A, 2A, 3A, 4A Channels 3 & 4: 4A, 6A, 8A, 10A		9000-41034-0101000
4A, 6A, 8A, 10A	9000-41034-0401005		
MICO+	Current Range	Monitored Circuits	Art. No.
	1A, 2A, 3A, 4A	4	9000-41084-0100400
	1A, 2A, 4A, 6A		9000-41084-0100600
	4A, 6A, 8A, 10A		9000-41084-0401000

	Description		Article Number
Mico Pro PM 24V DC/40A	Power Module, 24V DC, max. 40A		9000-41190-0000000
	No. of Channels	Tripping Current	Article Number
Mico Pro Fix 1.2	1	2A	9000-41011-0200000
Mico Pro Fix 1.4		4A	9000-41011-0400000
Mico Pro Fix 1.6		6A	9000-41011-0600000
Mico Pro Fix 1.8		8A	9000-41011-0800000
Mico Pro Fix 1.10		10A	9000-41011-1000000
Mico Pro Fix 1.16		16A	9000-41011-1600000
Mico Pro Fix 2.2	2	2A	9000-41012-0200000
Mico Pro Fix 2.4		4A	9000-41012-0400000
Mico Pro Fix 2.6	4	6A	9000-41012-0600000
Mico Pro Fix 4.2		2A	9000-41014-0200000
Mico Pro Fix 4.4		4A	9000-41014-0400000
Mico Pro Fix 4.6	4	6A	9000-41014-0600000
	No. of Channels	Tripping Current	Article Number
Mico Pro Flex 1.10	1	1-10A in 1A Increments	9000-41091-0101000
Mico Pro Flex 1.20		11-20A in 1A Increments	9000-41091-1102000
Mico Pro Flex 2.10	2	1-10A in 1A Increments	9000-41092-0101000
Mico Pro Flex 4.10			9000-41094-0101000
	Description		Article Number
Mico Pro 2x12	2 X 12 Potential Distributors, 20A max.		9000-41000-0000212
Mico Pro 2 x Blue	Unlimited expansion, 40A max., 500mm length		9000-41000-0000000
Mico Pro 2 x Red			9000-41000-0000001
Mico Pro 1 x Blue, 1 x Red			9000-41000-0000002

| ECO RAIL2: SINGLE PHASE 30 - 480W



- DIN Rail Mounting
- Slim Design = Small Space Requirement
- Adjustable Output Voltage: 23 - 28V
- Easily Adjustable Voltage Input
- Screw Terminals
- Full Power with Ambient Temperatures up to 40°C (105°F)
- Metal Housing

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
1.3A	85001	90-264V AC	24V DC	131 x 50 x 82mm
2.5A	85002	132V AC or 175-264V AC		131 x 50 x 94mm
5A	85003			131 x 50 x 134mm
10A	85004			131 x 68 x 134mm
20A	85005			130 x 105 x 133mm

COMING SOON

| EVOLUTION: 3-PHASE 120 - 960W



- Nominal input voltage range from 360-572V AC
- DC Voltage input 480-745V
- Power Boost: 50% more power for 4 sec.
- Extended temperature range from -25- +70°C (-13 - 158°F)
- Compact design, efficient cooling
- Adjustable output power rated for 22-28V DC
- Parallel and Series connections possible
- Two/Three Phase Operation
- 5, 10, 20 & 40A Models

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
20A	85016	3 x 324 - 572V AC 480 - 745V DC	24V DC	132 x 93 x 114mm
5A	85000			132 x 83 x 98mm
10A	85001			132 x 93 x 114mm
20A	85002			132 x 113 x 136mm
40A	85004			132 x 164 x 142mm

| EMPARRO: SINGLE PHASE 120 - 480W



- Up to 95% efficiency rating
- 50% Power Boost for up to 4 seconds
- Metal housing with optimum EMC characteristics
- No derating from -40° to +60°C
- Narrow (50 - 85mm) width
- High mains failure bridging time
- Spring clamp terminals

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
10A	85434	85-265V AC 90-250V DC	24-28V DC	123 x 50 x 138mm
5A	85440			123 x 50 x 138mm
10A	85441			123 x 65 x 138mm
20A	85442			123 x 85 x 138mm
2.5A	85437			123 x 50 x 138mm
5A	85438	48-56V DC	123 x 65 x 138mm	
10A	85439		123 x 85 x 138mm	

| EMPARRO: 3-PHASE 120 - 960W



- Up to 95% efficiency rating
- Power and Hyper Boost functions for starting large loads
- Continuous 2-phase operation
- Parallel operation (Connect up to five units to each other)
- Alarm contact & LED
- MTBF of 1,000,000 hours
- Integrated gas discharge valve protects from interference pulses
- Permanently overload protected – up to 20%

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
5A	85690	3x324-572V AC or 3x450-745V DC	24 - 28V DC	123 x 50 x 143mm
10A	85691			123 x 65 x 143mm
20A	85692			123 x 65 x 162mm
40A	85693			131 x 109 x 176mm

| EMPARRO67: SINGLE PHASE 90 - 190W



- 94.2% Efficient
- Minimal Power Loss
- IP67 Rated
- Active PFC
- Ambient Temp: up to 80°C
- Safe to Touch - Even at Full Load
- Compact Design

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
4A	9000-11112-1962020	90 - 265V AC 90 - 345V DC	24.1V DC ± 2%	141 x 111 x 54 mm
8A	9000-11112-2062020			176 x 111 x 54 mm

| EMPARRO67 HYBRID: SINGLE PH. 90 - 190W



- 93.8% Efficient
- I/O Link Interface
- Communicates as a device with an IO-Link master
- Extensive diagnostic and operating data
- Electronic current monitoring for 2 channels
- 90% Early warning signal
- Tripping happens “as late as possible, as early as necessary”

IO-Link

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
10A	85676	90 - 265V AC 90 - 345V DC	24.1V DC ± 1%	217 x 110 x 53 mm

- Two integrated channels for electronic current monitoring
- Separate monitoring of sensor, module and actuator supplies
- 2-pole switch-off of short circuits and overload
- Tripping happens “as late as possible, as early as necessary”
- 90% early warning signal
- Switch-on again via button or signal

MICO Inside

| PICCO: SINGLE PHASE 10 - 100W



- 8 models
- Screw Terminal
- 12V or 24V Output Voltage
- 10, 30, 60 or 100W
- Power Limiter (U/I Characteristics)
- Automatic Incoming Voltage Selection
- Low EMC Emissions (EMI - Class B)
- Compact Sizes

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
.85A	87012	100 - 240V AC; 120 - 370V DC	12V DC ± 1%	91 x 23 x 57mm
2.5A	87014			91 x 53 x 57mm
4.5A	87016			91 x 71 x 57mm
6A	87018			91 x 90 x 57mm
.42A	87011		24V DC ± 1%	91 x 23 x 57mm
1.25A	87013			91 x 53 x 57mm
2.5A	87015			91 x 71 x 57mm
4.2A	87017			91 x 90 x 57mm

| MPL: 3-PHASE 240 - 960W



- Transformer based power supply
- More Robust and Less Prone to Failure due to Spikes or Overloads
- Generates Less EMI Than a Primary Switch Mode Power Supply
- Available in Wide and High Current Range (10 - 50A)
- Wide Input Voltage Range: 3-phase 208-520V AC

	Art. Number	Input Voltage inc. Tolerance	Output Voltage	Dimension (HxWxD)
10A	85925	3 x 380 - 420V AC	24V DC	185 x 78 x 188mm
15A	85927			220 x 82 x 208mm
25A	85931			220 x 103 x 213mm
40A	85935			280 x 124 x 313

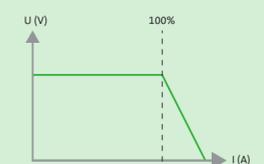
| FAILURE MODES

- Powers down in case of error
- Restarts automatically when error is fixed
- Available on A



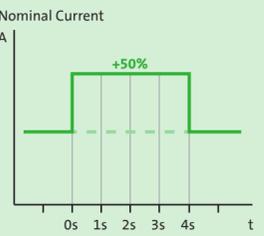
| POWER LIMITER

- Starts large loads reliably
- Limited function in case of error
- Available on G



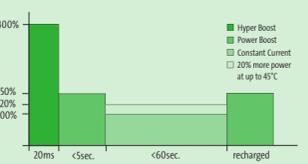
| POWER BOOST

- The Power Boost function provides up to 50% more power for up to 4 sec. This allows you to start higher loads and capacities without having to have a second power supply.
- Available on B, C, D, E



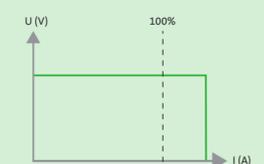
| HYPER BOOST

- Hyper Boost provides up to 400% more power for up to 20ms
- Available on C, D



| CURRENT LIMITER

- Starts large loads reliably
- Limited function in case of error
- Power Boost function
- Available on C, D, E

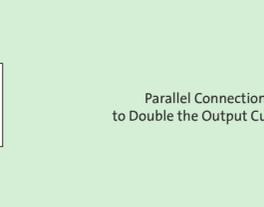
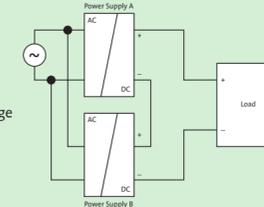


| APPROVALS

	A	B	C	D	E	F	G	H
UL	X	X	X	X	X	X	X	X
GL		X		X				
CE	X	X	X	X	X	X	X	X

| FOR REFERENCE

- Series Connection to Double the Output Voltage
- Parallel Connection to Double the Output Current





stay connected

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