



Power Management

Design for Longevity



stay connected

Filter – Power – Redundancy –

Current Monitoring - Buffer:

all available from Murrelektronik

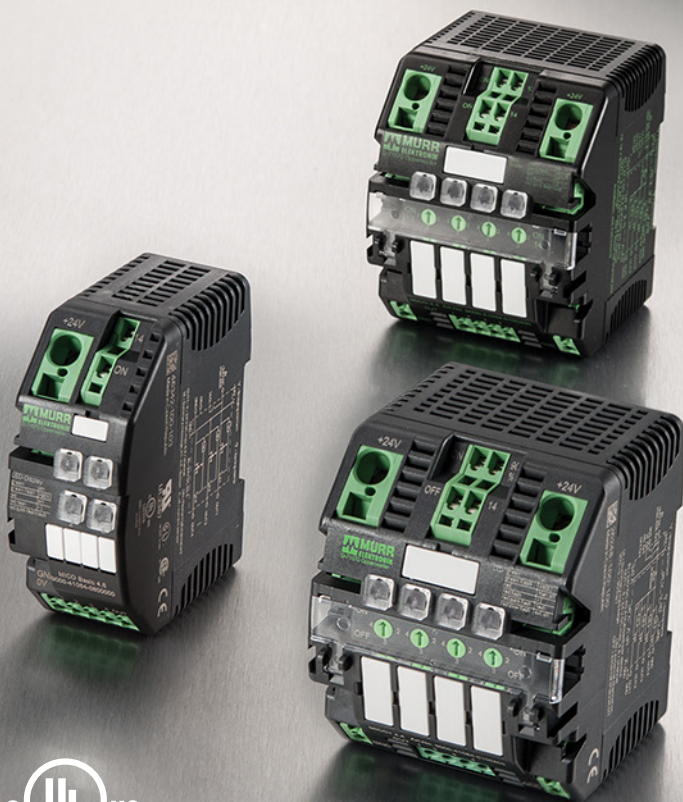
Murrelektronik views power management as the starting point for machine efficiency. Power conditioning, properly sized power supplies, current monitoring, redundancy and energy savings are all considered when we assemble a power management solution for our partners.

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.



MICO

24V DC CIRCUIT MONITORING

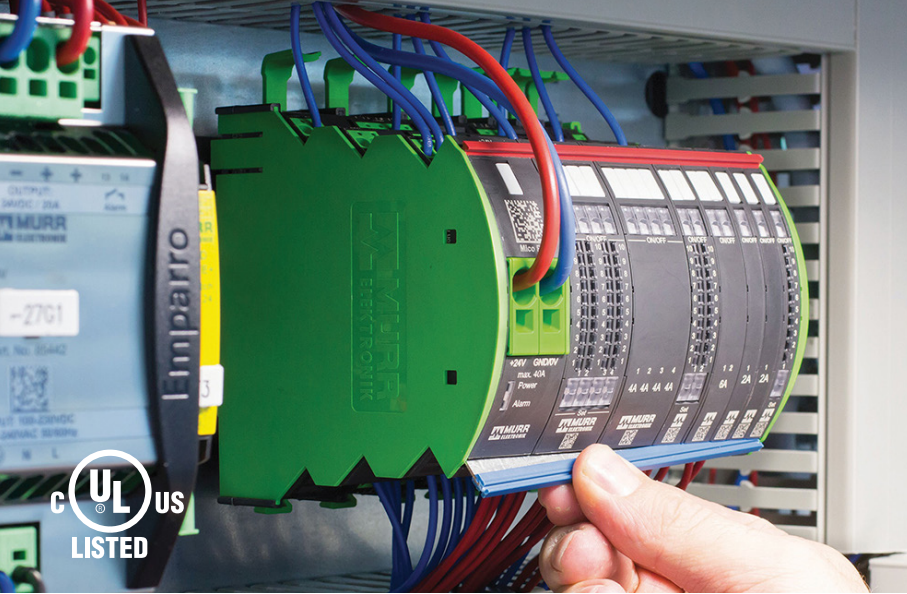


MICO is Murrelektronik's intelligent power distribution module for 24V DC. It monitors currents, indicates when approaching the maximum load and ensures machine availability.

	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	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+	1A, 2A, 3A, 4A	4	9000-41084-0100400
	1A, 2A, 4A, 6A		9000-41084-0100600
	4A, 6A, 8A, 10A		9000-41084-0401000

Models with NEC Class 2 Certification





MICO PRO

MODULAR CURRENT MONITORING

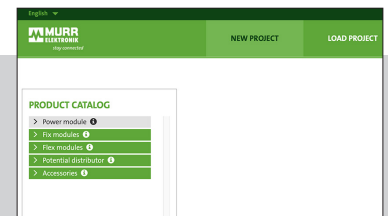
Mico Pro is Murrelektronik's innovative current monitoring system. This modular system enables you to adapt Mico systems to suit specific applications while meeting both space and cost requirements.

Mico Pro guarantees a reliable power supply system. It consistently monitors all load & control currents and identifies critical moments at the right time. The patented tripping process that follows the rule of "as late as possible, as early as necessary" assures machine availability while the integrated potential distribution significantly declutters the switch cabinet wiring.

Power Module	Description		Article Number
Mico Pro PM 24V DC/40A	Power Module, 24V DC, max. 40A		9000-41190-000000
Mico Pro PS 10-100-240/24	Switch-mode power supply single phase 10A		9000-41190-0000110
Mico Pro PS 5-100-240/24	Switch-mode power supply single phase 5A		9000-41190-0000105
Modules with Fixed Tripping Current	Number 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 1.4 CL2		4A	9000-41011-0400001
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		6A	9000-41012-0600000
Mico Pro Fix 4.2	4	2A	9000-41014-0200000
Mico Pro Fix 4.4		4A	9000-41014-0400000
Mico Pro Fix 4.4 CL2		4A	9000-41014-0400001
Mico Pro Fix 4.6		6A	9000-41014-0600000
Modules with Adjustable Tripping Current	Number 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	4		9000-41094-0101000
Accessories	Description		Article Number
Mico Pro 2x12	2 X 12 Potential Distributors, 20A max.		9000-41000-0000212
Mico Pro 2x2x06	2 X 2 x 06 Potential Distributors, 2 x 20A max.		9000-41000-0002206
Mico Pro 1 x Blue, 1 x Red	Unlimited expansion, 40A max., 500mm length		9000-41000-0000002
Packages	Description		Article Number
Power Pack Mico Pro	Mico Pro PM + 2x Mico Pro Flex 4.10 + Mico Pro Plug-In link		9101200
Power Pack PS5	Mico Pro PS 5-100-240/24 + 1x Mico Pro Flex 2.10 + Mico Pro Plug-In link		9101201
Power Pack PS10	Mico Pro PS 10-100-240/24 + 1x Mico Pro Flex 4.10 + Mico Pro Plug-In link		9101203

 Models with NEC Class 2 Certification

Build your own Mico Pro® online
https://micopro.murrelektronik.com/#/en-GB/new_project





Things to Consider When Choosing a Power Supply

Environment

- In-cabinet or field mounted
- Temperature Range
- Vibration

Power In

- Single Phase
- 3-phase

Power Out

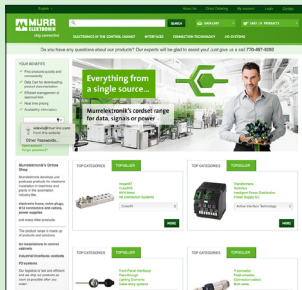
- Voltage, i.e. 12V, 24V, 48V
- Current, i.e. 2.5A, 5A, 10A, 20A, 40A

Mounting

- DIN-rail mounting
- Keyhole wall mounting
- Field frame mounting

Don't see exactly what you're looking for?

Visit our online shop (shop.murrinc.com) to see more slim line, 3-phase and transformer based power supplies



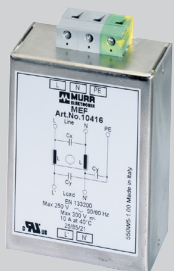
ECO RAIL2: Single Phase 30 - 480W



- 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	85131	90-264V AC	24V DC	131 x 50 x 82mm
2.5A	85132			131 x 50 x 94mm
5A	85133	90-132V AC or 173-264V AC		131 x 50 x 134mm
10A	85135			131 x 68 x 134mm
20A	85137			130 x 105 x 133mm

FILTERS



Corrupted signals can lead to operational faults, production line disruptions or machinery shutdowns. Filters:

- Reduce transient voltages
- Are recommended for all "BUS" installations

Emparro MEF is the matching filter for our Emparro power supplies.



- 1 stage filter
- Wide Attenuation Range - gkHz to 300MHz
- 1mA Leakage Current
- Built in Surge Protection

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	12 - 13.5V DC	132 x 93 x 114mm
10A	85001		24V DC	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
- Power Boost: 50% more power for 4 sec.
- Hyper Boost: 400% more power for 20 mS.
- 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	12-15V DC	123 x 50 x 138mm
5A	85440		24-28V DC	123 x 50 x 138mm
10A	85441			123 x 65 x 138mm
20A	85442			123 x 85 x 138mm
2.5A	85437		48-56V DC	123 x 50 x 138mm
5A	85438			123 x 65 x 138mm
10A	85439			123 x 85 x 138mm

BUFFERS

Emparro Cap is the buffer module for maximum system availability.

- Maintenance Free Ultra Capacitors
- Buffer Time >1 sec at 20A Full Load
- -40°C to 60°C Temperature Range



The Emparro ACCU-control UPS module rounds out the Emparro family.

In the event of a power failure, it automatically switches to battery operation and prevents machine downtimes.

MB Cap: Stable power supply. Safe processes.

Murrelektronik's MB Cap Ultra modules are buffer modules that 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.



EMPARRO: 3-Phase 120 - 960W

EMPARRO67: Single Phase 90 - 190W



- 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



- 94.2% Efficient
- Minimal Power Loss
- Power Boost: 50% more power for 4 sec.
- IP67 Rated
- Active PFC
- Ambient Temp: up to 80°C
- Safe to Touch - Even at Full Load
- Compact Design

For Applications Using SELV

Article Number	Description
9000-11112-1962020	INPUT: 90-265V AC/90-265V DC OUTPUT: 24V DC (SELV), ±2% Current: 4 A
9000-11112-2062020	INPUT: 90-265V AC/90-265V DC OUTPUT: 24V DC (SELV), ±2% Current: 8 A

For Applications Using PELV

Article Number	Description
9000-11112-1862020	3.8A, 4-Pole 7/8" PELV, NEC Class 2

POWER CABLE (Mini (7/8") to Wall Plug)

Jacket Color	Cable Type	Length	Art. Number
Yellow	TPE	2m	7700-A3N01-U1B0200

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.

EMPARRO67 HYBRID: Single Phase 90 - 190W

The innovative Emparro67 Hybrid is a switch mode power supply with many powerful features. It not only allows you to relocate the power supply from the control cabinet to the field but it also monitors currents using two integrated 24V DC load circuit monitoring channels to ensure system reliability. An IO-Link interface permits extensive and transparent communication.



A new dimension of decentralized power supply

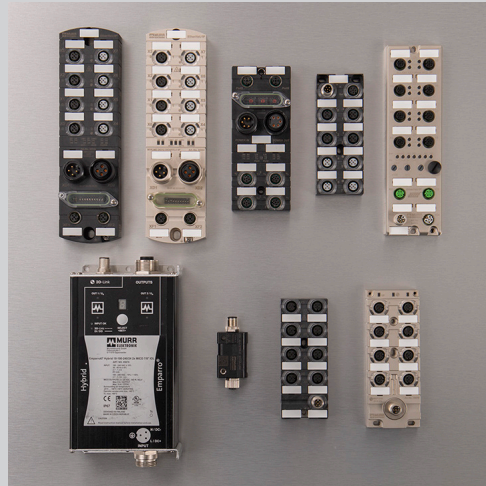
- 93.8% Efficiency Rating
- Voltage conversion (from 230V AC - 24V DC) takes place at the load
- Minimum power loss = lower energy costs
- Relocation of the power supply means smaller control cabinets or possibly no cabinet at all
- Robust Metal Housing

IO-Link Interface

- M12 Connection (IO-Link Interface)
- Communicates as device with a superior IO-Link master
- Use in fully-networked, intelligent applications
- Extensive diagnostic data and operating characteristics collected
- Lifetime monitoring and predictive maintenance functions

MICO (Electronic Current Monitoring) Built In

- Electronic current monitoring for 2 channels
- Separate monitoring of sensor, module and actuator supplies
- Short circuit and overload protection
- Tripping happens “as late as possible, as early as necessary”
- 90% early warning signal
- Switch-on again via button or signal



Connection		Input Voltage	Output Voltage	IO-Link Parameter	IO-Link Diagnostics	Article Number
In: 3p 7/8" Male Out: 5p 7/8" Fem	SELV/PELV*	90 - 265VAC/VDC	24.1V DC ± 2%	ON/OFF; setting tripping current, setting output voltage, and many more	Output current, alarm, life cycle, and many more	85676
In: 3p 7/8" Male Out: 4p 7/8" Fem						85677
In: 3p 7/8" Male, Out: L-code M12	PELV					85679
						85678

* For PELV requirements according to EN60204-1 §6.4.1: Connect either + or - terminal to protective earth (PE)



stay connected

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