MURR ELEKTRONIK

stay connected

- Robust
- Vibration-resistant
- Fully Potted

POWER SUPPLY IP67

Zero Cabinet – on-machine power!

01

High-performace power supply exactly where you need it!

02

On-machine power supplies use shorter cables reducing power loss

03

Emparro67 Hybrid is equipped with IO-Link and LED diagnostics

Zero Cabinet

... is our slogan and we help our customers move components from the control cabinet onto the machine. This concept makes applications transparent, user friendly and cost-efficient. **Increasing your competitive advantage!**

Until now, power supplies for machines and applications are almost exclusively found in the control cabinet. But not anymore! At Murrelektronik, we want to show you how it's possible to move your power supply onto the machine. With on-machine power you gain the advantage of having the power supply directly next to the load.

Customer advantages: Use smaller control cabinets (or no cabinet at all!). Reduce power loss, energy costs and wiring by converting the voltage from 230 V AC to 24 V DC directly next to the load. IP67 approval rating ensures the power supply can stand up to all the on-machine demands.

EMPARRO67 HYBRID

A new dimension of decentralized power supply

The innovative Emparro67 Hybrid switch mode power supply unit is an all-rounder with many powerful features:

It not only relocates power supply from the control cabinet to the industrial field, but it also monitors currents using two integrated channels for 24 VDC load circuit monitoring, thus ensuring high operational reliability. An IO-Link interface permits extensive and transparent communication.

Single-phase, primary switch mode

– Short-circuit- and overload-protected

Emparro67 Hybrid

Ordering Data	Art.-No	Art.-No	Art.-No	Art.-No
	85676	85677	85678	NEC class 2 85679
Current	10 A	10 A	10 A	2x 4 A
Input				
Input voltage	90...265 V AC/V DC			
Input current	1.1 A at 230 V AC			
Inrush current after 1 ms	< 7 A			
PFC	active			
Connection	7/8" 3-pole, male			
Output				
Output voltage	24.1 V DC ± 2 %			
MICO Output	2 outputs, 2-pole switching			
Output current	max. 8 A / channel, max. 10 A total			2x max. 4 A
Efficiency	up to 93.8 %			
Switch-on capacitance	20 000 µF / channel			
Connection	7/8" 5-pole, female	7/8" 4-pole, female	M12 Power, L-coded	7/8" 4-pole, female
IO-Link				
Parameter	ON/OFF; setting tripping current, setting output voltage, and many more			
Diagnostics	Output current, alarm, life cycle, and many more			
Connection	M12, male			
General data				
Mains failure bridging	> 20 ms at 230 V AC			
Standards	EN 60950-1, EN 61204-3, EN 55022, EN 61000-3-2			
MTBF	430 000 h			
Temperature range	–25...+50 °C (storage temperature –40...+85 °C)			
Mounting method	screw mounting			
Dimensions (H × W × D)	212 × 109 × 51 mm			

A new dimension of decentralized power supply

- Voltage conversion relocated to where it happens
- Minimum transmission losses, low energy costs
- Smaller control cabinets or even no control cabinets possible
- Protected from mechanical stress
- The high energy efficiency (93.8 %) allows all devices to be touched during operation

The practical add-on: IO-Link interface

- IO-Link interface (M12 connection)
- Communicates as device with a superior IO-Link master
- Use in fully-networked intelligent applications
- Transport of extensive diagnostic data and operating characteristics
- Enables lifetime monitoring, enabeling module exchange during scheduled maintenance

IO-Link

Electronic current monitoring for high operational reliability

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

EMPARRO67

Power Supply directly next to the load

Emparro67 power supply units are specially designed for applications outside the control cabinet. They withstand extreme environmental conditions and can be installed directly in the field, next to the loads.

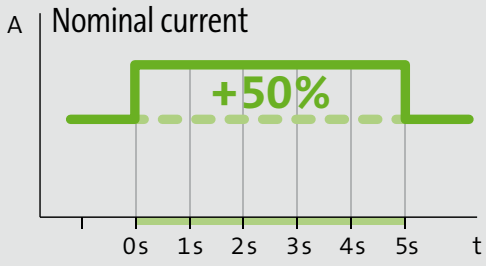
Power loss is reduced to a minimum, because the voltage is converted from 230 V AC to 24 V DC directly at the load. Therefore, the energy costs are reduced and smaller cabinets can be used.

Single phase, primary switched – short circuit and overload protected (Power limiter) – Power Boost 150 %	**Emparro67** 96 W 	**Emparro67** 192 W 	**Emparro67** 91,2 W 
Ordering Data	**Art.-No**	**Art.-No**	**Art.-No**
	9000-11112-1962020	**9000-11112-2062020**	**NEC class 2** **9000-11112-186202**
Current	4 A	8 A	3.8 A
Input			
Input voltage	90...265 V AC/V DC		
Input current	0.5 A at 230 V AC	0.9 A at 240 V AC	
Inrush current after 1 ms	< 9 A	< 7 A	
PFC	active		
Connection	7/8" 3-pole, male		
Output			
Output voltage	24.1 V DC ± 2 %		
Power Boost	150 % for 5 seconds		–
Efficiency	up to 92.4 %	up to 94.2 %	
Protection	short-circuit and overload protected (output), Power Limiter		
Connection	7/8" 5-pole, female		7/8" 4-pole, female
General data			
Mains failure bridging	> 35 ms at 230 V AC	> 35 ms at 230 V AC	
Standards	EN 60950-1, EN 61204-3, EN 55022, EN 61000-3-2		
MTBF	960 000 h	820 000 h	
Temperature range	–25...+60 °C (storage temperature –40...+85 °C)/with derating up to 85 °C		
Mounting method	screw mounting		
Dimensions (H × W × D)	140 × 109 × 51 mm	175 × 109 × 51 mm	

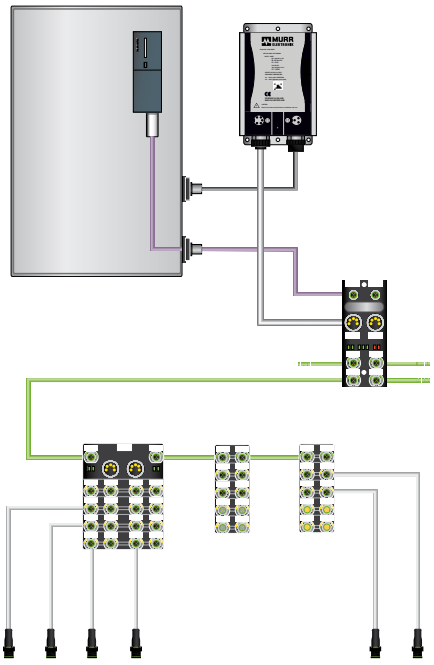
Decentralized Installation

- Extremely rugged, fully potted housing (IP67)
- Very flat, compact design with LED
- High efficiency of up to 94.2 %
- Ambient temperature up to 85 °C
- Active PFC
- Integrated input fuses
- MTBF up to 960 000

Power Boost Function



Emparro67 Topology



ACCESSORIES

Suitable Connectors for Power Supply

Murrelektronik guarantees quality

- All contacts gold-plated
- High IP67 protection as standard
- Shock and vibration resistant
- In-house test center and EMC lab for tested and accredited products
- No use of hazardous materials
- Complies with RoHS requirements

Did You Know?

Every Murrelektronik connector is 100 % tested.

- Electrical check
- High voltage test
- Function check
- Pin assignment test
- Short circuit test
- Visual check

Quality
MADE BY MURRELEKTRONIK

7/8" Connectors – Input Side

Field-wireable	Description	Art.-No
	7/8" 3-pole female, 0°, field wireable, screw terminal unshielded, 6–8 mm, 300 V / 12 A, UL approved	**7000-78191-0000000**
	7/8" 3-pole female, 90°, field wireable, screw terminal unshielded, 6–8 mm, 300 V / 12 A, UL approved	**7000-78291-0000000**
Female open leads	**Description**	**Art.-No**
	7/8" 3-pole female, 0° with open lead, PUR	**7700-A3021-UMByyyy**
	7/8" 3-pole female 90° with open lead, PUR	**7700-A3031-UMByyyy**
Connecting cable	**Description**	**Art.-No**
	7/8" 3-pole male 0° on 0° female, PUR	**7700-A3A01-UMByyyy**
	7/8" 3-pole male 90° on 90° female, PUR	**7700-A3A31-UMByyyy**

7/8" Connectors and M12 Connectors – Output Side

Field-wireable	Description	Art.-No
	7/8" 5-pole female, 0°, field wireable, screw terminal unshielded, 6–8 mm, 300 V / 12 A, UL approved For Art.-No. 85676, 9000-11112-1962020, 9000-11112-2062020	**7000-78081-0000000**
	7/8" 5-pole female, 90°, field wireable, screw terminal unshielded, 6–8 mm, 300 V / 12 A, UL approved For Art.-No. 9000-11112-1962020, 9000-11112-2062020	**7000-78141-0000000**
Male open leads	**Description**	**Art.-No**
	7/8" 4-pole male, 0° with open lead, PUR For Art.-No. 85677, 85679, 9000-11112-1862020	**7700-A4001-UMCyyyy**
	7/8" 4-pole male 90° with open lead, PUR For Art.-No. 85677, 85679, 9000-11112-1862020	**7700-A4011-UMCyyyy**
	7/8" 5-pole male, 0° with open lead, PUR For Art.-No. 9000-11112-1962020, 9000-11112-2062020	**7700-A5001-UMDyyyy**
	7/8" 5-pole male, 90° with open lead, PUR For Art.-No. 9000-11112-1962020, 9000-11112-2062020	**7700-A5011-UMDyyyy**
Connecting cable	**Description**	**Art.-No**
	7/8" 4-pole male 0° with open lead, PUR For Art.-No. 85677, 85679, 9000-11112-1862020	**7700-A4A01-UMCyyyy**
	7/8" 4-pole male 90° with open lead, PUR For Art.-No. 85677, 85679, 9000-11112-1862020	**7700-A4A11-UMCyyyy**
	7/8" 5-pole male, 0° on 0° female, PUR, For Art.-No. 9000-11112-1962020, 9000-11112-2062020	**7700-A5A01-UMDyyyy**
	7/8" 5-pole male, 90° on 90° female, PUR, For Art.-No. 9000-11112-1962020, 9000-11112-2062020	**7700-A5A11-UMDyyyy**
Male open leads	**Description**	**Art.-No**
	M12 Power, 5-pole male, 0° with open lead, PUR For Art.-No. 85678	**7000-P4201-P04yyyy**
	M12 Power, 5-pole male, 90° with open lead, PUR For Art.-No. 85678	**7000-P4211-P04yyyy**
Connecting cable	**Description**	**Art.-No**
	M12 Power, 5-pole male, 0° on 0° female, PUR, For Art.-No. 85678	**7000-P4241-P04yyyy**
	M12 Power, 5-pole male, 90° on 90° female, PUR, For Art.-No. 85678	**7000-P4271-P04yyyy**

IO-Link Connectors

Connecting cable	Description	Art.-No
	M12, 4-pole male 0° on 0° female, PUR 3- and 5-pole versions – see onlineshop	**7000-40021-624yyy**

Further cable types and lengths on request.

Length yyyy in cm: 0150 = 1.5 m, 0300 = 3.0 m, 0500 = 5.0 m

ACCESSORIES

IO-Link Master – suitable for Emparro67 Hybrid

Murrelektronik's compact IO-Link modules are the smartest way to get IO-Link devices connected to Ethernet/IP.

An easy-to-use configuration tool for IO-Link devices helps to decrease installation and maintenance time.

Combined with a large variety of Murrelektronik I/O hubs and IO-Link/analog converters, these modules have their flexibility increased and contribute to a reduction in hardware costs.

IO-Link Master Modules

Input/Output Modules – digital – IP67	SOLID67 PN/E IOL8 	SOLID67 PN/E IOL8 	SOLID67 PN/E IOL8 	Cube67+ DIO12 IOL4 E 8xM12 
Order Data	**Art.-No**	**Art.-No**	**Art.-No**	**Art.-No**
	54504	**54505**	**54506**	**56766**
Description				
Addr. EtherNet IP / Profinet	DHCP, BOOTP or IP address by rotary switch / DCP			Cube67
IO-Link	8 x Master, V1.1.2	8 x Master, V1.1.2	8 x Master, V1.1.2	4 x Master, V1.1.2
Port class	Class 4xA + 4xB (galvanically separated)			Class A + B (not galvanic. separated)
Nominal current L+ (Pin 1 and 3)	max. 500 mA	max. 500 mA	max. 500 mA	max. 700 mA
Nominal current 2L+ (Pin 2 and 5)	max. 2 A per port	max. 4 A per port	max. 4 A per port	max. 1.6 A per port
Connection	M12	M12	M8	M12
Housing	metal			plastic
Supply voltage: Connection	M12 Power, 5-pole, L-coded			via internal system connection
Supply voltage: Operation voltage	24 V DC (18...30.2 V), EN61131-2			24 V DC (18...30.2 V), EN61131-2

Input/Output Modules – digital – IP67 EtherNet/IP	MVK Metal DIO14 DIO2/IOL2 4P	MVK Metal DIO12 DIO4/IOL4 4P	IMPACT67 DIO14 DIO2/IOL2 4P	IMPACT67 DIO12 DIO4/IOL4 4P
				
Order Data	**Art.-No**	**Art.-No**	**Art.-No**	**Art.-No**
	55543	**55544**	**55143**	**55144**
Description				
Addressing	DHCP, BOOTP or IP address by rotary switch			
IO-Link	2 x Master, V1.1.2	4 x Master, V1.1.2	2 x Master, V1.1.2	4 x Master, V1.1.2
Port class	Class B (not galvanically separated)			
Nominal current L+ (Pin 1 and 3)	max. 1 A per port			
Nominal current 2L+ (Pin 2 and 5)	max. 1.6 A per port			
Housing	metal		plastic	
Supply voltage: Connection	7/8", 4-pole, 2 × max. 9 A			
Supply voltage: Operation voltage	24 V DC (18...30.2 V), EN61131-2			

Input/Output Modules – digital – IP67 PROFINET	MVK Metal DIO14 DIO2/IOL2 IRT	MVK Metal DIO12 DIO4/IOL4 IRT	IMPACT67 DIO14 DIO2/IOL2 IRT	IMPACT67 DIO12 DIO4/IOL4 IRT
				
Order Data	**Art.-No**	**Art.-No**	**Art.-No**	**Art.-No**
7/8"	**55531**	**55532**	**55131**	**55132**
M12 Power, L-coded	**55161**	**55162**	**55151**	**55152**
Description				
Addressing	DCP			
IO-Link	2 x Master, V1.1.2	4 x Master, V1.1.2	2 x Master, V1.1.2	4 x Master, V1.1.2
Port class	Class B (not galvanically separated)	Class 2xA + 2xB (not galvanic. sep.)	Class B (not galvanically separated)	Class 2xA + 2xB (not galvanic. sep.)
Nominal current L+ (Pin 1 and 3)	max. 1 A per port			
Nominal current 2L+ (Pin 2 and 5)	max. 1.6 A per port			
Housing	metal		plastic	
Supply voltage: Connection 7/8"	5-pole, 2× max. 9 A			
Supply voltage: Connection M12 Power	4-pole, L-coded, 2× max. 16 A			
Supply voltage: Operation voltage	24 V DC (18...30.2 V), EN61131-2			

Input/Output Modules – digital – IP67 PROFINET	MVK Fusion FDI6/3 FDO2/1 DIO4 IOL2 PP IRT	MVK Fusion FDI6/3 FDO2/1 DIO4 IOL2 PP IRT K	MVK Metal DI6 DO6 IOL IRT PushPull
			
Order Data	**Art.-No**	**Art.-No**	**Art.-No**
	55510	**with heat sink 5551001**	**55516**
Description			
Addressing	DCP		
IO-Link	2 x Master, V 1.1.2		V1.1.2
Port class	Class 1xA + 1xB (galvanically separated)		Class 2xB (galvanically separated)
Nominal current L+ (Pin 1 and 3)	max. 700 mA per port		max. 1 A per port
Nominal current 2L+ (Pin 2 and 5)	max. 2 A per port		
Housing	metal		
Supply voltage: Connection	10/100 Mbit/s; Push Pull RJ45 Data connector		
Supply voltage: Operation voltage	24 V DC (18...30.2 V), EN61131-2		

Power Supply IP67 – Zero Cabinet | 08_19 EN | Art.-No. 9844202

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