

JACKPAC® (IP 67)

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The Concept

The IP 20 Solution

Until now, all signal conditioning tasks were carried out by modules designed to IP 20. For their own protection, these needed to be installed in central switchgear cabinets. However, decentralised solutions that do not require large switchgear cabinets are increasingly being sought for use in modern-day industrial automation technology.

It is true that shielded signals can be fed to the machinery via powerful fieldbus systems; but in each case, however, there remains an interconnecting cable between the subdistribution boards and the sensors/actuators are susceptible to interference from surrounding operations. As has always been the case, signals are still influenced by overvoltages and earth loops; interference pulses are superimposed on sensor signals and malfunctions can be initiated.

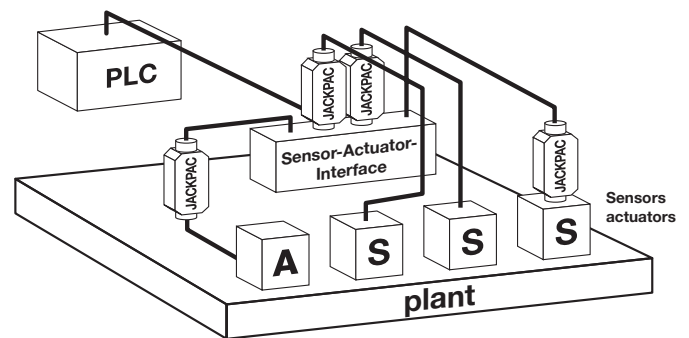
The result is that signal conditioning modules sealed to IP 20 require terminal boxes, such as switchgear cabinets, or even cost-intensive special solutions (for example, sensor-actuator distributors with integrated signal-conditioning functions providing as many functions as possible, even when these are surplus to requirements).

The JACKPAC® Solution

By introducing **JACKPAC®**, the new M12 Signal Box with the high IP 67 ingress protection, Weidmüller can now provide a modular and versatile concept that makes it possible to condition signals in an industrial environment. Requiring no additional enclosures, these modules can be installed directly on the machine, in the production plant, conveyor system or within a process.

The M12 connector, which is standardised all over the world, makes it possible to integrate the **JACKPAC®** at any point in the sensor-actuator cabling. The fixed pin assignment means it is easy to install and is protected against polarity reversal. This versatility really comes into its own when an installation needs to be altered or modernised, simply because no additional enclosures or cabling are required.

By providing this high degree of protection and versatility, **JACKPAC®** renders possible innovative automation concepts based on decentralised applications – without large control cabinets or small distribution boards – for consistent, transparent, efficient and cost-efficient installations.



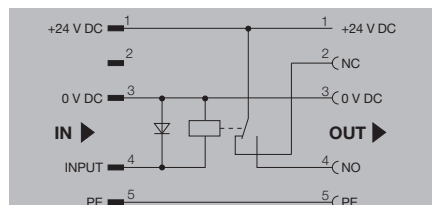
- Easy 'Plug and Play' installation
- Universal and versatile usage
- No additional enclosure required
- Saves time and costs
- Ideal for decentralised concepts and plant modernisation (retrofitting)

Switching amplifiers

- Switching amplifiers are simply built into the actuator system controls
- Switching outputs can be amplified from 24 V DC / 0.5 A to 24 V DC / 2 A
- Galvanic isolation is optional, for insulating between the input and output circuits, which prevents conducted interference on the switching output
- Switched voltage feed at output via T-distributor

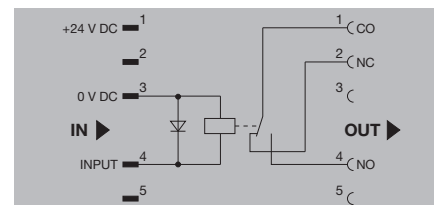
JPR 24 V DC 1C0 M12

without isolation



JPR 24 V DC ISO 1C0 M12

with electrical isolation



Technical data

Input	
Rated control voltage	24 V DC ±20 %
Rated current DC	8 mA
Power rating	200 mW
DC Response/dropout volt	16.8 V / 1.2 V
DC pickup/dropout current	5 mA / 1 mA
Free-wheel diode	Yes
Output	
Max. switching power	24 V / 2 A
Min. switching power	12 V / 10 mA
Contact material	AgSnO
Mechanical service life	10 x 10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Sparkover time / Drop-out time	ca. 5 ms
Insulation coordination (EN 50 178)	
Rated voltage	300
Surge voltage category	III
Pollution severity	2
General data	
Ambient temperature (operational)	-25 °C...+70 °C
Storage temperature	-25 °C...+70 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; GOSTME25

Rated control voltage	24 V DC ±20 %
Rated current DC	8 mA
Power rating	200 mW
DC Response/dropout volt	16.8 V / 1.2 V
DC pickup/dropout current	5 mA / 1 mA
Free-wheel diode	Yes
Max. switching power	24 V / 2 A
Min. switching power	12 V / 10 mA
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Rated control voltage	24 V DC ±20 %
Rated current DC	8 mA
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Approvals	cULus; GOSTME25

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

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Length x width x height	mm
Note	

Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

Ordering data

Type	Qty.	Order No.
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Type	Qty.	Order No.
JPR 24VDC 1C0 M12	1	8771420000

Type	Qty.	Order No.
JPR 24VDC ISO 1C0 M12	1	8771430000

Note

Note

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Accessories

Note

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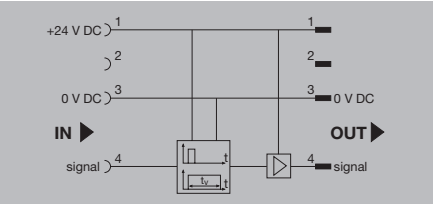
Note

Timer relay

Signal extenders can be easily connected to the cable between the sensor and the input modules. They extend the pulse length from a minimum of 1 ms to 50 ms or 100 ms. This enables short sensor signals to be reliably recognised and evaluated by the controller.

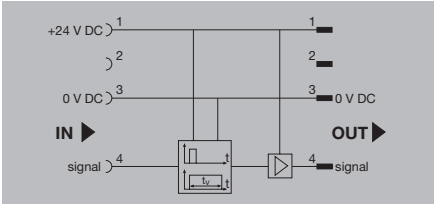
JPTA 50 MS 24VDC PNP M12

Pulse stretching, 50 ms



JPTA 100 MS 24VDC PNP M12

Pulse stretching, 100 ms



Technical data

Input	
Rated control voltage	18...24...30 V DC
Rated current DC	3.5...7.0...10.0 mA
Switch-off delay	50 ms
Output	
Max. switching voltage, DC	30 V
Max. switching current	400 mA
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Surge voltage category	I
Pollution severity	2
General data	
Ambient temperature (operational)	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	CE; cULus; GOSTME25

Rated control voltage	18...24...30 V DC
Rated current DC	3.5...7.0...10.0 mA
Switch-off delay	50 ms
Max. switching voltage, DC	30 V
Max. switching current	400 mA
Rated voltage	32 V
Impulse withstand voltage	330 V
Surge voltage category	I
Pollution severity	2
Ambient temperature (operational)	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	CE; cULus; GOSTME25

Rated control voltage	18...24...30 V DC
Rated current DC	3.5...7.0...10.0 mA
Switch-off delay	100 ms
Max. switching voltage, DC	30 V
Max. switching current	400 mA
Rated voltage	32 V
Impulse withstand voltage	330 V
Surge voltage category	I
Pollution severity	2
Ambient temperature (operational)	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	CE; cULus; GOSTME25

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

Ordering data

Type	Qty.	Order No.
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Type	Qty.	Order No.
JPTA 50MS 24VDC PNP M12	1	8771440000

Type	Qty.	Order No.
JPTA100MS 24VDC PNP M12	1	8836630000

Note

Note

Note

Accessories

Note

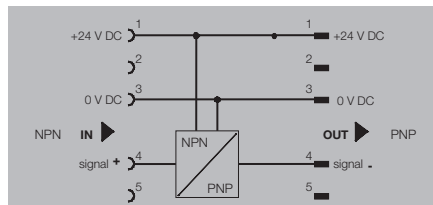
Note
Retaining clip JP CLIP M: 8778490000

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Retaining clip JP CLIP M: 8778490000

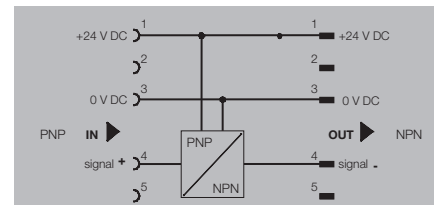
Signal inverter

Signal inverters convert PNP sensor signals to NPN signals and NPN signals back to PNP. This means that existing circuits do not require complex alteration and the existing inputs on the I/O cards can be put to best use. This is particularly well suited for the Asian and North American markets.

JPP NPN PNP 24 V DC



JPP PNP NPN 24 V DC



Technical data

Input
Sensor
Rated control voltage
Input current for sensor
Type of contact
Output
Solid-state type
Rated switching voltage
Rated switching current
Voltage drop at max. load
Insulation coordination (EN 50 178)
Rated voltage
Impulse withstand voltage
Surge voltage category
Pollution severity
General data
Ambient temperature (operational)
Storage temperature
Conductor connection system
Approvals

2-/ 3-Conductor Sensor NPN-type
18...24...30 V DC
< 200 mA
NO contact
Solid state relay
18...30 V DC
400 mA
≤ 1 V
32 V
330 V
I
2
0 °C...+60 °C
-20 °C...+85 °C
M12 plug / socket, A-coded
cULus; GOSTME25

2-/ 3-Conductor Sensor PNP-Type
18...24...30 V DC
< 200 mA
NO contact
Solid state relay
18...30 V DC
400 mA
32 V
330 V
I
2
0 °C...+60 °C
-20 °C...+85 °C
M12 plug / socket, A-coded
CE; cULus; GOSTME25

Dimensions
Clamping range (nominal / min. / max.)
Length x width x height
Note

83 / 36 / 14.4

83 / 36 / 14.4

Ordering data

Type	Qty.	Order No.
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JPP NPN PNP 24VDC	1	8852350000
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JPP PNP NPN 24VDC	1	8857030000
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Note

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Accessories

Note

Retaining clip JP CLIP M: 8778490000

Retaining clip JP CLIP M: 8778490000

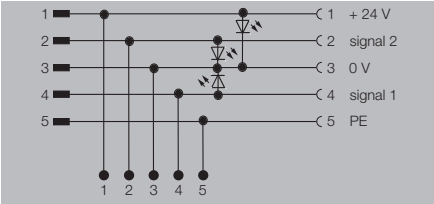
JACKPAC® test

Test adapter

The new JACKPAC® test adapter can be easily integrated at any point on an M12 network and enables quick and easy connection of a testing device via the 5 PUSH IN connections. Status indicators show the status of the 2 signal channels as well as the 24 V DC auxiliary voltage.

JP TEST

with status indication



Technical data

Input	
Rated control voltage	18...24...30 V DC
Rated current DC	2.2 mA (LED)
Status indicator	Green LED
Output	
Continuous current	2 A
Power	2.2 mA at 24 V
General data	
Ambient temperature (operational)	0 °C...+55 °C
Storage temperature	-25 °C...+70 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	CE; GOSTME25

Input	
Rated control voltage	18...24...30 V DC
Rated current DC	2.2 mA (LED)
Status indicator	Green LED
Output	
Continuous current	2 A
Power	2.2 mA at 24 V
General data	
Ambient temperature (operational)	0 °C...+55 °C
Storage temperature	-25 °C...+70 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	CE; GOSTME25

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

83 / 36 / 14.4

Ordering data

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Type	Qty.	Order No.
JP TEST	1	8794120000

Note

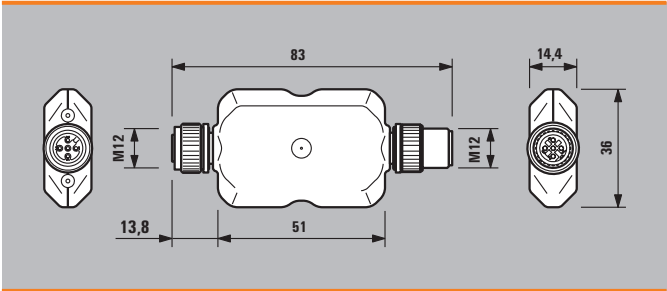
Accessories

Note

Retaining clip JP CLIP M: 8778490000

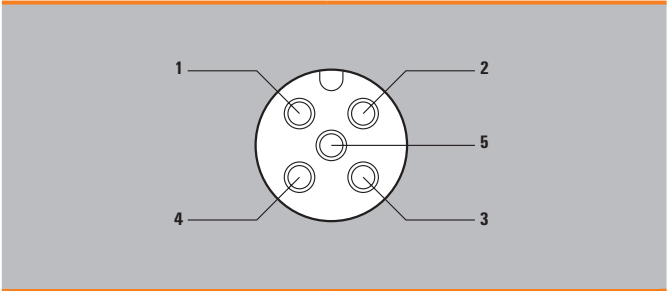
General data

Ingress protection class	IP 67
Housing material	PBT, RAL 7032 (grey)
Flammability class	V0 to UL94
Screw socket	M12, CuZn, nickel plated, A-coded
Rated torque	0.8 ... 1 Nm



Contact assignment (socket)

Pole	Assignment
1	+24 V DC
2	Input / output 2
3	0 V DC
4	Input / output 1
5	PE / Earth



Accessories

Retaining clip



Type	Qty.	Order No.
Stainless steel JP CLIP M	1	8778490000

Twin plug



Type	Qty.	Order No.
5-pole SAIL-Y-5S PARA M12/M12	1	1783430000

Screwty® M12



Type	Qty.	Order No.
With torque SCREWTY M12 DM	1	1900001000

Sensor cables



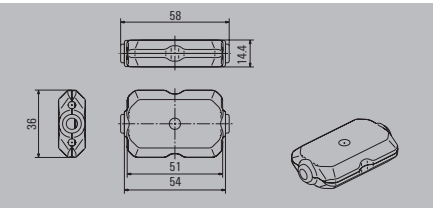
Type	Qty.	Order No.
4-pole, length 0.3 m SAIL-M12G-M12G-4-0.3U	1	1906300030
4-pole, length 0.6 m SAIL-M12G-M12G-4-0.6U	1	1906300050
4-pole, length 1.5 m SAIL-M12G-M12G-4-1.5U	1	1906300150
5-pole, length 0.3 m SAIL-M12G-M12G-5-0.3U	1	9457340030
5-pole, length 0.6 m SAIL-M12G-M12G-5-0.6U	1	9457340060
5-pole, length 1.5 m SAIL-M12G-M12G-5-1.5U	1	9457340150

Additional accessories can be found in the Sensor Actuator Interface catalogue.

Empty housing SAI JACKPAC® for custom built-in components

Empty housing SAI JACKPAC®
for custom built-in components

SAI JP



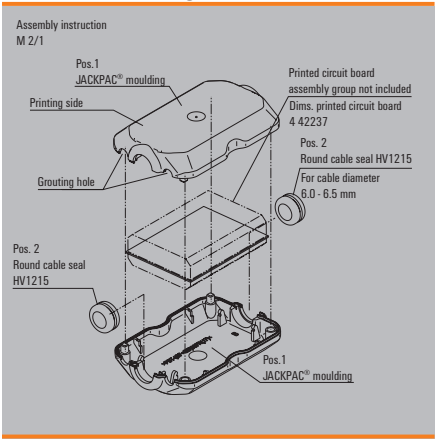
Technical data

General data	
Temperature range	
Connection system	
Contact base material	
Surface finish	

-25 °C ... +70 °C
M12 plug/socket, A-coded
AgSnO
Au

H

Dimensioned drawing SAI JP



Dimensions	
Length x width x height	mm

83 x 36 x 14.4

Note

Ordering data

Housing with M12 connectors	
Contents	1 piece
	1 piece
	100 pieces
	100 pieces

Type	No. of poles	Qty.	Order No.
SAI JP 4P LG	4	1	1915220000
SAI JP 5P LG	5	1	1918520000
SAI JP 4P LG 100	4	1	8794090000
SAI JP 5P LG 100	5	1	8794080000

Housing without M12 connectors SAI JP FC SET 1933680000
1 Qty. = 100 pieces

Accessories

Dimensioned drawing, PCBs

