

BEDIA®

MOTORENTECHNIK



DC/DC CONVERTER

- TYPE SPW 003
- TYPE SPW 005
- TYPE SPW 008
- TYPE SPW 010
- TYPE SPW 015
- TYPE SPW 020
- TYPE SPW 030

THOUGHT-OUT SOLUTIONS AT THE HIGHEST LEVEL



ISO 9001
Certified
Quality Management System
www.tuv-sud.com/ms-cert



ISO 14001
Certified Environmental
Management System
www.tuv-sud.com/ms-cert

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BEDIA

The company

Measuring with system and passion

As a high performance and innovative company BEDIA develops, produces and distributes well thought out solutions for level and temperature monitoring.

We have been concentrating our skills in the domain of measuring filling levels and temperatures under extreme operating conditions. We are able to offer customized solutions to the specific requirements of our clients for small to large series. In doing so we are combining tried and tested technologies with innovative product ideas. Our expertise and flexibility are well demonstrated in the development of customer specific solutions.

One thing that all our products have in common is the nonexistence of moving or adjustable parts; our parts are not subject to mechanical interference and exhibit exceptional operational reliability.

Since 1986 BEDIA Motorentechnik is a valued partner of numerous manufacturers of agricultural and construction machinery, compressors, engines, power train control systems and utility vehicles.

The high quality requirements of our world wide operating customers are our motivation for the constant improvement of our products and processes. The stable customer relationships of many years standing express the high quality of our products and the satisfaction of our customers.

We hope you will get a comprehensive overview of our products from this catalog. Please feel free to contact us, we will be happy to assist you with our advice and experience.



Company history at a glance

2020	currently about 140 employees
2016	30th company anniversary
2012	Foundation of BEDIA Sensors USA in Austin, Texas
2009	Relocation of BEDIA Motorentechnik and BEDIA Kabel to the new corporate building in Altdorf in the industrial park near the A6.
2008	Takeover of the production for sensors from the business entity E-T-A in Altdorf
2006	Spin-off of the new BEDIA Kabel business unit from BEDIA Motorentechnik GmbH & Co. KG into BEDIA Kabel GmbH & Co. KG.
2005	Reorganization of BEDIA Motorentechnik GmbH into BEDIA Motorentechnik GmbH & Co. KG, preparation and the transfer of business administration to Holger Schultheis.
2000	Sale of the water treatment business unit to Aqua-Concept GmbH.
1994	Transfer of the Sensor Systems and Water Treatment business unit from BEDIA Maschinenfabrik to BEDIA Motorentechnik.
1986	Foundation of BEDIA Motorentechnik in Leinburg. Core focus business with vehicle wiring cables and delivery of sensor parts for the Bedia Maschinenfabrik in Bonn.

Our products at a glance

- capacitive level sensors for a versatile range of applications:
 - CLS 20/25 for railway applications tested according to DIN EN 50155
 - CLS 40/45 for off- and onroad applications with E1-type approval of the KBA
 - CLS 50/55 for maritime applications with approvals of the classification societies
- intelligent, analog tank sensors for fuels and oils
- intelligent, analog hot wire sensors for monitoring oil sump fill levels
- temperature sensors
- mechanical temperature switches
- electronic temperature switches
- electronic temperature sensors
- DC/DC converters

We are certified in accordance with
ISO 9001:2015 and ISO 14001:2015.





GENERAL DESCRIPTION

Non-isolated switched mode DC/DC converters

These converters are used to reduce a 24V battery voltage to a lower voltage

The devices are specifically suited to install e.g. car stereos, two-way radios or cool boxes in trucks, busses, construction vehicles, etc.

In order to preserve battery and alternator, it is vital to keep energy consumption as low as possible. Also, generation of heat should be avoided. Both can be achieved with switched mode conversion, through which the voltage is nearly halved and the current is doubled. Power dissipation in the device is very low, which means that its efficiency is 92%. These are advantages compared to linear power supplies.

The converters are encased in a robust metal casing. They are short-circuit-protected, current-limited, protected against load-dump. They provide a stable output voltage for a variety of application.

The converters are RoHS-compliant and have the E1 automotive certified no. 10R - 046944. CE-marking and ISO-9001 certification guarantee the highest quality standards.

Installation advice

The device should be installed at a well ventilated and dry location. For installation note that the DC/DC converter should be mounted on a metal part of the chassis.

CONNECTORS AND DESIGNS

DC/DC converter



- SPW 003
cable with 2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 9



- SPW 005
cable with 2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 9



- SPW 010
cable with 2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 9



- SPW 015
cable with 2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 9

TECHNICAL DATA

for converters with cable and 2-pole connector
blade terminal 6,3 x 0,8

Technical Data

Input voltage	18 - 32 VDC
Output voltage	13,5 VDC (-1 V / +0,5 V)
	13,5 VDC (-4,5 V / +0,5 V)
Voltage ripple on the output	< 50 mV
Output current (max)	see order number overview
Output current (continuously)	see order number overview
Idle current consumption	< approx. 5 mA
Efficiency	up to 92%
Frequency	72 kHz
Ambient temperature range	-40 °C to +80 °C
IP protection	IP 40
Short-circuit proof	yes
Current-limited	yes
Load-drop protected	yes
Dimensions L x B x H [mm]	see order number overview
Weight	see order number overview
RoHS - compliant	yes
E1 approval number	10R – 046944
CE-approval	yes

ORDER NUMBER OVERVIEW

Converters with cable and 2-pole connector blade terminal 6,3 x 0,8

Output current (continuous)	Output current (max 3 min.)	Dimensions LxBxH (in mm)	Weight (in g approx.)	Order number
3 A	4 A	43 x 150 x 60	240	422 384
5 A	6 A	58 x 150 x 60	340	422 385
10 A	15 A	88 x 150 x 60	550	422 386
15 A	20 A	128 x 150 x 60	760	422 387

CONNECTORS AND DESIGNS

DC/DC converter



■ SPW 020 / SPW 030
cable without connector
protection class IP40 according to DIN 40050

» [Order number overview at page 11](#)

TECHNICAL DATA

for converters with cable without connector

Technical Data

Input voltage	18 - 32 VDC
Output voltage	13,5 VDC (-1 V / +0,5 V)
> -20 °C	
< -20 °C	13,5 VDC (-4,5 V / +0,5 V)
Voltage ripple on the output	< 50 mV
Output current (max)	see order number overview
Output current (continuously)	see order number overview
Idle current consumption	< approx. 5 mA
Efficiency	up to 92%
Frequency	72 kHz
Ambient temperature range	-40 °C to +80 °C
IP protection	IP 40
Short-circuit proof	yes
Current-limited	yes
Load-drop protected	yes
Dimensions L x B x H [mm]	see order number overview
Weight	see order number overview
RoHS - compliant	yes
E1 approval number	10R – 046944
CE-approval	yes

ORDER NUMBER OVERVIEW

Converters with cable without connector

Output current (continuous)	Output current (max 3 min.)	Dimensions LxBxH (in mm)	Weight (in g approx.)	Order number
20 A	30 A	128 x 150 x 60	820	422 388
30 A	40 A	128 x 150 x 60	840	422 389

CONNECTORS AND DESIGNS

DC/DC converter



- SPW 003
2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 13



- SPW 005
2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 13



- SPW 010
2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 13



- SPW 015
2-pole connector blade terminal 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 13

TECHNICAL DATA

for converters with 2-pole connector blade terminal 6,3 x 0,8

Technical Data

Input voltage	18 - 32 VDC
Output voltage	13,5 VDC (-1 V / +0,5 V)
	13,5 VDC (-4,5 V / +0,5 V)
Voltage ripple on the output	< 50 mV
Output current (max)	see order number overview
Output current (continuously)	see order number overview
Idle current consumption	< approx. 5 mA
Efficiency	up to 92%
Frequency	72 kHz
Ambient temperature range	-40 °C to +80 °C
IP protection	IP 40
Short-circuit proof	yes
Current-limited	yes
Load-drop protected	yes
Dimensions L x B x H [mm]	see order number overview
Weight	see order number overview
RoHS - compliant	yes
E1 approval number	10R – 046944
CE-approval	yes

ORDER NUMBER OVERVIEW

Converters with 2-pole connector blade terminal 6,3 x 0,8

Output current (continuous)	Output current (max 3 min.)	Dimensions LxBxH (in mm)	Weight (in g approx.)	Order number
3 A	4 A	58 x 150 x 60	340	422 372
5 A	6 A	58 x 150 x 60	340	422 373
10 A	15 A	88 x 150 x 60	550	422 374
15 A	20 A	128 x 150 x 60	760	422 375

CONNECTORS AND DESIGNS

DC/DC converter



- SPW 003
connector blade terminal strip 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 15



- SPW 005
connector blade terminal strip 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 15



- SPW 010
connector blade terminal strip 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 15



- SPW 015
connector blade terminal strip 6,3x0,8
protection class IP40 according to DIN 40050

» Order number overview at page 15

TECHNICAL DATA

for converters connector blade terminal strip 6,3x0,8

Technical data

Input voltage	18 - 32 VDC
Output voltage	13,5 VDC (-1 V / +0,5 V)
> -20 °C	
< -20 °C	13,5 VDC (-4,5 V / +0,5 V)
Voltage ripple on the output	< 50 mV
Output current (max)	see order number overview
Output current (continuously)	see order number overview
Idle current consumption	< approx. 5 mA
Efficiency	up to 92%
Frequency	72 kHz
Ambient temperature range	-40 °C to +80 °C
IP protection	IP 40
Short-circuit proof	yes
Current-limited	yes
Load-drop protected	yes
Dimensions L x B x H [mm]	see order number overview
Weight	see order number overview
RoHS - compliant	yes
E1 approval number	10R – 046944
CE-approval	yes

ORDER NUMBER OVERVIEW

Converters with connector blade terminal strip 6,3x0,8

Output current (continuous)	Output current (max 3 min.)	Dimensions LxBxH (in mm)	Weight (in g approx.)	Order number
3 A	4 A	43 x 150 x 60	240	422 393
5 A	6 A	58 x 150 x 60	340	422 394
10 A	15 A	88 x 150 x 60	550	422 395
15 A	20 A	128 x 150 x 60	760	422 396
20 A	30 A	128 x 150 x 60	820	422 655

CONNECTORS AND DESIGNS

DC/DC converter



■ SPW 008

Connector bayonet according to ISO 15170
protection class IP40 according to DIN 40050

» [Order number overview at page 17](#)

TECHNICAL DATA

for converters connector bayonet according to ISO 15170

Technical Data

Input voltage	18 - 32 VDC
Output voltage	13,5 VDC (-1 V / +0,5 V)
> -20 °C	
< -20 °C	13,5 VDC (-4,5 V / +0,5 V)
Voltage ripple on the output	< 50 mV
Output current (max)	see order number overview
Output current (continuosly)	see order number overview
Idle current consumption	< approx. 5 mA
Efficiency	up to 92%
Frequency	72 kHz
Ambient temperature range	-40 °C to +80 °C
IP protection	IP 40
Short-circuit proof	yes
Current-limited	yes
Load-drop protected	yes
Dimensions L x B x H [mm]	see order number overview
Weight	see order number overview
RoHS - compliant	yes
E1 approval number	10R – 046944
CE-approval	yes

ORDER NUMBER OVERVIEW

Converters with connector bayonet according to ISO 15170

Output current (continuous)	Output current (max 3 min.)	Dimensions LxBxH (in mm)	Weight (in g approx.)	Order number
3 A	4 A	58 x 150 x 60	340	422 378
5 A	6 A	58 x 150 x 60	340	422 379
8 A	10 A	88 x 150 x 60	560	422 399

APPLICATION EXAMPLES



APPLICATION EXAMPLES



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