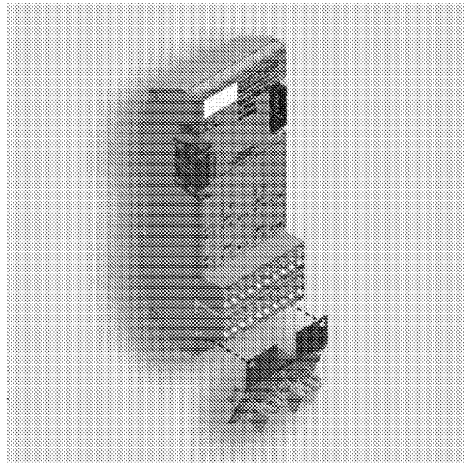


DIOLINE local-bus expansion module with 4 analogue outputs, DC -10 ... 10 V



Preliminary

Identification	Type	DL-LB-AO-4-U-12 +/-10V
	Part-No.	746427

Product version	
Hardware revision	C
Software version	1.00
Datasheet version	00

Use/Application/Properties	
Description	DIOLINE local-bus expansion module with 4 analog outputs for use on rail vehicles

Bus interface	
Bus system	Lütze bus
Data capacity in process image	8 byte analog outputs
Transmission medium	Flat conductor, 10-pin
Connection type, incoming bus	Socket connector IDE, 10-pin
Connection type, continuing bus	Plug connector IDE, 10-pin

Electronic module supply	
Rated current (at U_N)	nom. 90 m A

Outputs	
Number	4
Connection, analog output 1	X1, pin 1-5, clamp-type terminal, 10-pin
Connection, analog output 2	X2, pin 1-5, clamp-type terminal, 10-pin
Connection, analog output 3	X1, pin 6-10, clamp-type terminal, 10-pin
Connection, analog output 4	X2, pin 6-10, clamp-type terminal, 10-pin
Output current	max. 5 mA
Connection	Spring terminal: 0.14 – 2.5 mm ² , AWG 22 – 12 Stripping Length: 11 mm Screwdriver: 3,5 × 0,6 mm
Electrical isolation	AC 500 V local bus - analog outputs

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**DIOLINE local-bus expansion module with 4 analogue outputs,
DC -10 ... 10 V**

Voltage outputs	
Output signal	Voltage DC -10 ... 10 V
Output current	max. 5 mA
Resolution	12 Bit, 1 LSB = DC 4.88 mV
Data capacity in process image	4 × 16 bit analog output
Measured-value representation	16 Bit signed Intel format
	-10 V → F800 hex
	0 V → 0 hex
	10 V → 07FF hex

Accuracy	±0.5 %
Update frequency	100 Hz (10 ms)
Protective measure	PTC overcurrent protection

Diagnostics	
Diagnosis indications	The module status flag of the local bus is set to "1" by corrupt calibration data which are occurring during the module initialization

Electrical isolation	
Isolating voltage	AC 500 V outputs and electronics

Technical data	
Dimensions (w × h × d)	57.0 × 141.5 × 48.0 mm
Weight (kg/piece)	0.200 kg/piece
Protection class	IP 20 (if all connectors are plugged in)
Field installation	DIN rail mounting
Installation position	top: 5 mm (for assembly) bottom: 5 mm (for assembly) side: 0 mm
Operating temperature	-40 °C to +70 °C (+85 °C for 10 min) corresponds to EN 50155 category Tx
Storage temperature range min/max	-40 °C to +85 °C

PE connection	
Connection tab	6.3 mm × 0.8 mm

Standards	EN 50155:2007-07
	Railway applications – Electronic equipment used on rolling stock
	EN 50121-3-2:2006-07
	Railway applications – Electromagnetic compatibility – Part 3-2: Rolling stock – Apparatus
	EN 50124-1:2001-03
	Railway applications – Insulation coordination – Part 1: Basic requirements, Clearances and creepage distances for all electrical and electronic equipment
	EN 61373:2010-09
	Railway applications – Rolling stock equipment – Shock and vibration tests
	HN_Isolationsprüfung:2012-02
	Company standard insulation testing

Failure Rate Prediction (MTBF)

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DIOLINE local-bus expansion module with 4 analogue outputs, DC -10 ... 10 V

Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at -40 °C	2184 fit
Failure rate at +40 °C	2469 fit
Failure rate at +70 °C	3563 fit
	1 fit equals one failure per 10 ⁹ component hours
	The indicated temperature is the mean component ambient temperature.
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances

Accessories	EMC - screen clamp set, article number 746894 Not contained in scope of delivery Screwless terminal set, article number 745862 Contained in scope of delivery
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Technical drawing of the DIOLINE Z0 L-Bus analog module, showing front and side views with dimensions.

Front View Dimensions:

- Top width: 57 mm
- Left side height: 72 mm
- Right side height: 141.5 mm
- Bottom width: 48 mm

Front View Labels:

- Top left: **LEITZ** logo, "Technik mit System"
- Top center: **DIOLINE Z0**, "L-Bus analog"
- Top right: \ominus U₀, U_{RM}
- Center: **OUTPUT** label with arrows pointing to terminals X1 and X2.
- Terminal X1: A01, 1, 2, 3, 4, PE
- Terminal X2: A02, 1, 2, 3, 4, PE
- Terminal X3: A03, 1, 2, 3, 4, PE
- Terminal X4: A04, 1, 2, 3, 4, PE
- Bottom left: **X0**
- Bottom center: \oplus and \ominus polarity symbols

Side View Dimensions:

- Top width: 36 mm
- Bottom width: 48 mm

Note	An EMC performance according to the standards is only possible if the EMC shield clip set is mounted.
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01	DIOLINE EXPANS MODULE SAL. ANALOG.			1	LÜTZE			0.200	
	DIOLINE EXPANS MODULE USC. ANALOG.				746409				
MARCA	DESCRIPCIÓN			CANT.	CÓDIGO O NORMA	MATERIAL O REFERENCIA	PESO	DIMENSIONES	
MARCA	DESCRIZIONE			QUANT.	CÓDICE O NORMA	MATERIALE O REFERENZA	PESO (Kg)	DIMENSIONES (mm)	

LOCOMOTIVA E401										ISO 2768-cK DIN ISO 13920-BF	0.200	A2	BEASAIN	OT	Y
A	Modificar cajetín	2016-07-04	96411												
Ed.	Descrizione	Date	Nome												

X:X	Disegnato	26/05/2015	10221	DIOLINE EXPANS MODULE SAL. ANALOG. DIOLINE EXPANS MODULE USC. ANALOG.
 	Comprovato	26/05/2015	10988	
	Verificato	26/05/2015	14422	
	Date	Nome		
				

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