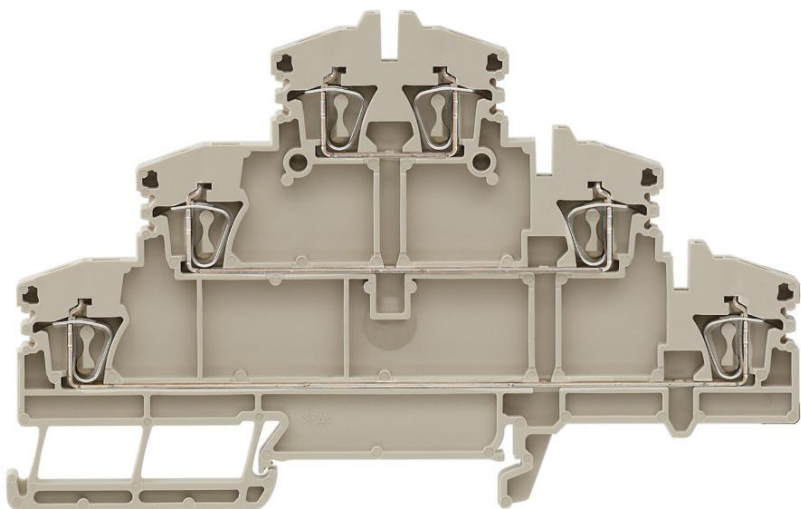


Feed-through and PE Terminal Blocks ZDLD

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmüller.com



General data

Reference product 1782300000 ZDLD 2.5-2N

Description of the product

The Weidmüller ZDLD series comprises multi-level terminal blocks for the connection and distribution of electrical circuits in control cabinets and distribution systems. Their compact multi-tier design enables high wiring density and efficient use of installation space while maintaining clear circuit separation. Depending on the application, the terminal blocks integrate feed-through and protective earth (PE) functions on separate levels. The series supports safe and structured wiring in industrial automation and electrical distribution applications.

Functional unit

Connect 2 clamping units between 2 or more wires for a rated cross-section 2.5 mm² with rated voltage 630 V, rated current 32 A and a voltage drop 2.1167 mV, according to the appropriate use scenario, and for the reference service life of the product of 20 years.

Other products covered

1131750000

1131760000

1718360000

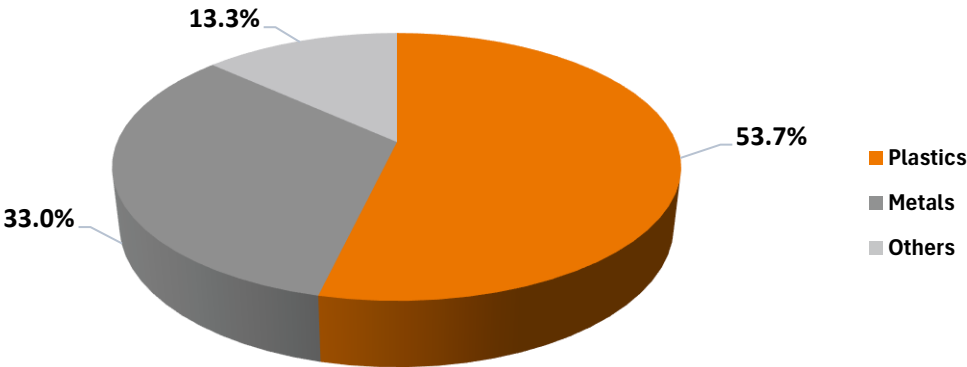
1782310000

1782320000

1782330000

Constituent Materials

The total weight of the reference product is 19,1 g (including packaging material). The constituent materials are distributed as follows:



Categorisation according to the material classes of IEC 62474:

Plastics			Metals			Other		
M-208	Polyamide (PA)	53,7 %	M-121	Copper and its alloys	24,7 %	M-341	Paper	13,3 %
			M-100	Stainless steel	8,4 %			
Plastics in total		53,7 %	Metals in total		33 %	Others in total		13,3 %

The products are in compliance with RoHS (EU Directive 2011/65/EU).

According to the REACH Regulation 1907/2006, the ECHA publishes on its website which substances are to be classified as so-called substances of very high concern (SVHC). As soon as an article contains SVHC above the respective threshold values for the declaration obligation according to Article 33, the affected articles and the SVHC they contain are published in the online product catalogue at each product.

The online product catalogue site of the reference product can be accessed via the link:

<https://eshop.weidmueller.com/p/1782300000>

Additional Environmental Information

Manufacture	This stage includes the manufacturing of the product and its packaging as well as the transport to the manufacturer's last logistics platform located in Hörselbach-Hainich (Germany). The final assembly site is located in Germany and has an ISO 14001 and ISO 50.001 certified environmental management system. Transport packaging, used in addition to product packaging when required for delivery, is excluded from the system boundaries.
Distribution	The shipment is made from the distribution centre to the customer by truck. The transport route to the customer was assumed to be 3500 km by lorry. Transport was modelled using an ecoinvent dataset reflecting average European load rates. The load rate is not explicitly specified in the dataset.
Installation	Only the disposal of the packaging is considered in this phase, as the installation is carried out manually with non-electrical tools.
Use	No maintenance or utilities are required during use. The power consumption was calculated according to the use scenario below.
End of Life	The end-of-life stage is modelled based on the data from Eurostat. The transport route to the disposal company was assumed to be 1000 km by lorry.

Environmental Impacts

Reference Service Lifetime	20 years								
Product category	Electrical switchgear and control gear solutions								
Installation elements	No special installation elements required.								
Use scenario	During the use phase, the product dissipates some electricity due to power losses. The average power loss was calculated using the following assumptions according PSR: - RSL of 20 years; - Load rate: 30 % of the rated current - Use rate: 90 % RSL. For variants combining feed-through and protective earth (PE) functions, the electrical losses associated with the feed-through and PE paths are assessed separately and summed for the life cycle assessment. The primary function of the products covered by this declaration is evaluated according to IEC 60947-7-1. Integrated PE functions, where present, are additionally assessed based on the requirements of IEC 60947-7-2. PE functions can be identified by the suffix “PE” in the product designation. The average power loss for PE function was calculated using the following assumptions according PSR: During the use phase, the product dissipates some electricity due to power losses. The average power loss was calculated using the following assumptions according PSR: - RSL of 20 years; - Load rate: 100 % of the short time withstand current - Use time: 3 seconds								
Geographical representativeness	Europe								
Software	GreenDelta openLCA 2.6.1								
Database	ecoinvent 3.12, EN15804 add-on (ecoinvent 3.12), carbon minds plastics technology 2024								
Energy model	<table><tr><th>Manufacture*</th><th>Installation</th><th>Use</th><th>End of Life</th></tr><tr><td>Germany</td><td>-</td><td>Europe</td><td>Europe</td></tr></table>	Manufacture*	Installation	Use	End of Life	Germany	-	Europe	Europe
Manufacture*	Installation	Use	End of Life						
Germany	-	Europe	Europe						

*Energy model of the final assembly site.

The following tables represent the impact values of the reference product according to DIN EN 15804:2022-03 except for the environmental indicators of output flows and information on the biogenic carbon content of the product and the associated packaging.

Environmental impact indicators

Indicator	Unit	Total*	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End of Life C1-C4	Benefits and Loads D
Climate change - total	kg CO ₂ eq.	6,17E+00	1,47E-01	1,34E-02	1,28E-03	5,99E+00	1,99E-02	-1,21E-01
Climate change - fossil	kg CO ₂ eq.	6,14E+00	1,46E-01	1,34E-02	1,24E-03	5,96E+00	1,97E-02	-1,21E-01
Climate change - biogenic	kg CO ₂ eq.	1,37E-02	6,60E-04	2,81E-06	2,49E-05	1,30E-02	9,74E-05	-2,00E-04
Climate change - land use and land use change	kg CO ₂ eq.	1,69E-02	2,30E-04	4,37E-06	1,16E-05	1,66E-02	5,58E-05	-9,90E-05
Ozone depletion	kg CFC 11 eq.	9,89E-08	2,25E-09	3,03E-10	4,61E-11	9,61E-08	1,94E-10	-7,10E-10
Acidification	mol H ⁺ eq.	3,36E-02	4,60E-03	2,77E-05	4,60E-06	2,89E-02	4,65E-05	-4,34E-03
Eutrophication - freshwater	kg P eq.	6,31E-04	3,04E-05	1,01E-07	3,03E-08	6,00E-04	5,09E-07	-2,10E-05
Eutrophication - marine aquatic	kg N eq.	4,19E-03	2,60E-04	6,93E-06	1,15E-06	3,91E-03	9,38E-06	-3,00E-04
Eutrophication - terrestrial	mol N- eq.	4,79E-02	3,62E-03	7,62E-05	1,17E-05	4,41E-02	9,62E-05	-3,36E-03
Photochemical ozone formation	kg NMVOC	1,49E-02	1,03E-03	4,69E-05	4,51E-06	1,38E-02	3,71E-05	-9,60E-04
Resource use, mineral and metals	kg Sb eq.	7,00E-05	5,70E-05	4,74E-08	1,01E-08	1,28E-05	8,48E-08	-5,20E-05
Resource use, fossils	MJ	1,31E+02	2,19E+00	1,89E-01	2,33E-02	1,29E+02	1,68E-01	-1,70E+00
Water use	m ³	3,39E+00	7,65E-02	9,90E-04	1,78E-03	3,31E+00	3,83E-03	-1,19E-01

Additional environmental impact indicators

Indicator	Unit	Total*	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End of Life C1-C4	Benefits and Loads D
Particulate matter	Disease incidences	9,79E-08	1,11E-08	9,97E-10	1,44E-10	8,51E-08	4,76E-10	-1,26E-08
Ionising radiation, human health	kBq U235 eq.	1,13E+00	1,15E-02	8,21E-05	1,70E-04	1,12E+00	8,60E-04	-2,34E-03
Ecotoxicity, freshwater	CTUe	1,92E+01	5,00E+00	2,83E-02	5,41E-03	1,41E+01	4,87E-02	-4,66E+00
Human toxicity, cancer	CTUh	1,45E-09	4,52E-10	2,11E-12	6,80E-13	9,71E-10	1,99E-11	-4,25E-10
Human toxicity, non-cancer	CTUh	9,02E-08	4,47E-08	1,16E-10	1,25E-11	4,52E-08	2,13E-10	-4,25E-08
Land Use	-	2,10E+01	1,69E+00	1,14E-01	2,11E-02	1,91E+01	7,18E-02	-1,33E+00

Resources use indicators

Indicator	Unit	Total*	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End of Life C1-C4	Benefits and Loads D
Use of renewable primary energy	MJ	3,05E+01	3,24E-01	3,14E-03	1,03E-02	3,01E+01	3,11E-02	-2,10E-01
Use of renewable primary energy as raw materials	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy resources	MJ	3,05E+01	3,24E-01	3,14E-03	1,03E-02	3,01E+01	3,11E-02	-2,10E-01
Use of non-renewable primary energy	MJ	1,31E+02	2,19E+00	1,89E-01	2,33E-02	1,29E+02	1,68E-01	-1,70E+00
Use of non-renewable primary energy as raw materials	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-renewable primary energy resources	MJ	1,31E+02	2,19E+00	1,89E-01	2,33E-02	1,29E+02	1,68E-01	-1,70E+00
Input of secondary material	kg	1,82E+00	1,09E-02	1,60E-04	1,15E-05	1,81E+00	7,50E-04	-2,88E-03
Use of renewable secondary fuels	MJ	1,07E+00	5,75E-03	4,35E-05	4,10E-06	1,06E+00	4,30E-04	-5,90E-04
Use of non-renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m³	7,92E-02	2,22E-03	2,26E-05	4,12E-05	7,68E-02	8,78E-05	-3,21E-03

Waste category indicators

Indicator	Unit	Total*	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End of Life C1-C4	Benefits and Loads D
Hazardous waste disposed	kg	2,17E+00	1,51E+00	1,17E-03	3,00E-04	6,55E-01	6,30E-03	-1,47E+00
Non-hazardous waste disposed	kg	3,04E+01	1,98E+00	1,54E-02	3,09E-03	2,83E+01	3,73E-02	-1,27E+00
Radioactive waste disposed	kg	8,69E-04	8,82E-06	5,30E-08	3,08E-09	8,60E-04	3,80E-07	-1,43E-06
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,79E+00	1,28E-02	1,70E-04	1,15E-05	1,77E+00	9,70E-04	-3,68E-03
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported electrical energy	MJ	6,53E-01	2,09E-03	3,55E-05	2,13E-06	6,51E-01	3,00E-04	-2,60E-04
Exported thermal energy	MJ	1,42E-02	6,53E-03	4,49E-05	1,74E-06	7,57E-03	4,45E-05	-7,50E-04

*In accordance with the current Product Category Rules (PCR), the values presented in the 'Total' column do not include the benefits and loads beyond the system boundaries as represented in 'Module D'.

The following table represents the environmental impact indicators for products other than the reference product covered by this Environmental Product Declaration (EPD).

Product number	Life Cycle Phase	Climate change - total	Climate change - fossil	Climate change - biogenic	Climate change -land use and land use change	Ozone depletion	Acidification	Eutrophication - freshwater	Eutrophication - marine	Eutrophication - terrestrial	Photochemical ozone formation	Resource use, mineral and metals	Resource use, fossils	Water use
1131750000	Total*	2,33E+00	2,32E+00	5,91E-03	6,20E-03	3,76E-08	2,03E-02	2,56E-04	1,98E-03	2,39E-02	7,25E-03	1,35E-04	4,80E+01	1,29E+00
	Manufacturing	1,91E-01	1,89E-01	1,21E-03	2,90E-04	3,20E-09	1,01E-02	4,50E-05	5,90E-04	8,16E-03	2,30E-03	1,30E-04	2,49E+00	1,18E-01
	Distribution	1,60E-02	1,60E-02	3,36E-06	5,22E-06	3,62E-10	3,31E-05	1,21E-07	8,28E-06	9,12E-05	5,60E-05	5,67E-08	2,26E-01	1,19E-03
	Installation	1,60E-03	1,56E-03	3,13E-05	1,45E-05	5,78E-11	5,76E-06	3,80E-08	1,44E-06	1,47E-05	5,65E-06	1,26E-08	2,92E-02	2,23E-03
	Use	2,10E+00	2,09E+00	4,55E-03	5,83E-03	3,37E-08	1,01E-02	2,10E-04	1,37E-03	1,55E-02	4,84E-03	4,50E-06	4,51E+01	1,16E+00
	End of Life	2,34E-02	2,33E-02	1,20E-04	5,97E-05	2,29E-10	5,45E-05	5,53E-07	1,10E-05	1,10E-04	4,47E-05	9,33E-08	1,98E-01	4,20E-03
	Module D	-1,86E-01	-1,85E-01	-3,80E-04	-2,20E-04	-1,54E-09	-9,55E-03	-4,39E-05	-5,50E-04	-6,95E-03	-1,97E-03	-1,20E-04	2,52E+00	-1,73E-01
1131760000	Total*	2,48E+00	2,46E+00	6,22E-03	6,61E-03	3,99E-08	2,10E-02	2,76E-04	2,08E-03	2,49E-02	7,57E-03	1,35E-04	5,12E+01	1,37E+00
	Manufacturing	1,89E-01	1,88E-01	1,21E-03	2,90E-04	3,16E-09	1,01E-02	4,50E-05	5,90E-04	8,11E-03	2,29E-03	1,30E-04	2,47E+00	1,18E-01
	Distribution	1,55E-02	1,55E-02	3,26E-06	5,06E-06	3,51E-10	3,21E-05	1,17E-07	8,02E-06	8,83E-05	5,43E-05	5,49E-08	2,19E-01	1,15E-03
	Installation	1,60E-03	1,56E-03	3,13E-05	1,45E-05	5,78E-11	5,76E-06	3,80E-08	1,44E-06	1,47E-05	5,65E-06	1,26E-08	2,92E-02	2,23E-03
	Use	2,25E+00	2,24E+00	4,86E-03	6,24E-03	3,61E-08	1,09E-02	2,30E-04	1,47E-03	1,66E-02	5,18E-03	4,82E-06	4,83E+01	1,24E+00
	End of Life	2,23E-02	2,21E-02	1,20E-04	5,58E-05	2,18E-10	5,18E-05	5,18E-07	1,05E-05	1,10E-04	4,27E-05	8,76E-08	1,88E-01	3,95E-03
	Module D	-1,81E-01	-1,80E-01	-3,80E-04	-2,20E-04	-1,54E-09	-9,53E-03	-4,37E-05	-5,40E-04	-6,91E-03	-1,96E-03	-1,20E-04	2,44E+00	-1,67E-01
1718360000	Total*	4,07E+00	4,05E+00	1,00E-02	1,09E-02	6,54E-08	3,19E-02	4,52E-04	3,18E-03	3,79E-02	1,16E-02	1,88E-04	8,47E+01	2,26E+00
	Manufacturing	2,87E-01	2,85E-01	1,77E-03	4,60E-04	4,74E-09	1,38E-02	7,14E-05	7,10E-04	1,01E-02	2,86E-03	1,80E-04	3,99E+00	1,80E-01
	Distribution	1,50E-02	1,50E-02	3,15E-06	4,89E-06	3,39E-10	3,11E-05	1,13E-07	7,76E-06	8,54E-05	5,25E-05	5,32E-08	2,12E-01	1,11E-03
	Installation	1,28E-03	1,24E-03	2,49E-05	1,16E-05	4,61E-11	4,60E-06	3,03E-08	1,15E-06	1,17E-05	4,51E-06	1,01E-08	2,33E-02	1,78E-03
	Use	3,74E+00	3,72E+00	8,09E-03	1,04E-02	6,01E-08	1,81E-02	3,80E-04	2,45E-03	2,76E-02	8,63E-03	8,02E-06	8,03E+01	2,07E+00
	End of Life	2,21E-02	2,19E-02	1,10E-04	6,00E-05	2,16E-10	5,15E-05	5,50E-07	1,04E-05	1,10E-04	4,16E-05	9,20E-08	1,87E-01	4,15E-03
	Module D	-2,28E-01	-2,28E-01	-5,10E-04	-2,90E-04	-2,09E-09	-1,30E-02	-5,91E-05	-7,10E-04	-9,33E-03	-2,64E-03	-1,60E-04	3,05E+00	-2,09E-01
1782310000	Total*	6,17E+00	6,14E+00	1,37E-02	1,69E-02	9,89E-08	3,36E-02	6,31E-04	4,19E-03	4,79E-02	1,49E-02	7,00E-05	1,31E+02	3,39E+00
	Manufacturing	1,47E-01	1,46E-01	6,60E-04	2,30E-04	2,25E-09	4,60E-03	3,04E-05	2,60E-04	3,62E-03	1,03E-03	5,70E-05	2,19E+00	7,65E-02
	Distribution	1,34E-02	1,34E-02	2,81E-06	4,37E-06	3,03E-10	2,77E-05	1,01E-07	6,93E-06	7,62E-05	4,69E-05	4,74E-08	1,89E-01	9,90E-04
	Installation	1,28E-03	1,24E-03	2,49E-05	1,16E-05	4,61E-11	4,60E-06	3,03E-08	1,15E-06	1,17E-05	4,51E-06	1,01E-08	2,33E-02	1,78E-03
	Use	5,99E+00	5,96E+00	1,30E-02	1,66E-02	9,61E-08	2,89E-02	6,00E-04	3,91E-03	4,41E-02	1,38E-02	1,28E-05	1,29E+02	3,31E+00
	End of Life	1,99E-02	1,97E-02	9,74E-05	5,58E-05	1,94E-10	4,65E-05	5,09E-07	9,38E-06	9,62E-05	3,71E-05	8,48E-08	1,68E-01	3,83E-03

	Module D	-1,21E-01	-1,21E-01	-2,00E-04	-9,90E-05	-7,10E-10	-4,34E-03	-2,10E-05	-3,00E-04	-3,36E-03	-9,60E-04	-5,20E-05	-1,70E+00	-1,19E-01
1782320000 1782330000	Total*	6,24E+00	6,21E+00	1,41E-02	1,70E-02	9,98E-08	3,62E-02	6,45E-04	4,33E-03	4,99E-02	1,55E-02	1,02E-04	1,32E+02	3,43E+00
	Manufacturing	2,04E-01	2,03E-01	9,80E-04	3,20E-04	2,96E-09	7,23E-03	4,44E-05	4,00E-04	5,52E-03	1,57E-03	8,91E-05	2,98E+00	1,15E-01
	Distribution	2,16E-02	2,16E-02	4,53E-06	7,04E-06	4,88E-10	4,46E-05	1,63E-07	1,12E-05	1,20E-04	7,55E-05	7,64E-08	3,05E-01	1,60E-03
	Installation	1,38E-03	1,34E-03	2,68E-05	1,25E-05	4,96E-11	4,95E-06	3,26E-08	1,23E-06	1,26E-05	4,85E-06	1,09E-08	2,51E-02	1,91E-03
	Use	5,99E+00	5,96E+00	1,30E-02	1,66E-02	9,61E-08	2,89E-02	6,00E-04	3,91E-03	4,41E-02	1,38E-02	1,28E-05	1,29E+02	3,31E+00
	End of Life	2,19E-02	2,18E-02	1,10E-04	5,91E-05	2,14E-10	5,12E-05	5,43E-07	1,03E-05	1,10E-04	4,14E-05	9,09E-08	1,86E-01	4,10E-03
	Module D	-1,52E-01	-1,52E-01	-2,90E-04	-1,50E-04	-1,09E-09	-6,74E-03	-3,15E-05	-4,20E-04	-5,02E-03	-1,43E-03	-8,28E-05	-2,10E+00	-1,46E-01

Please obtain the units from the table of the reference article.

*In accordance with the current Product Category Rules (PCR), the values presented in the 'Total' column do not include the benefits and loads beyond the system boundaries as represented in 'Module D'.

Date of issue: 12.10.2026

Validity period: 5 Years

Document in compliance with ISO 14021

« Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »