

Communication Modules

WAGO Communication Module IO-Link

2789-9080



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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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Table of Contents

Provisions	5
1.1 Typographical Conventions	5
1.2 Legal Information	7
Safety	8
2.1 General Safety Rules	8
2.2 Electrical Safety	8
2.3 Mechanical Safety	8
2.4 Thermal Safety	9
2.5 Indirect Safety	9
Properties	10
3.1 Overview	10
3.2 View	10
3.3 Type label	11
3.4 Product-specific information	11
3.5 Connections	12
3.5.1 IO-Link	12
3.6 Indicators	12
3.7 Technical data	13
3.7.1 Product	13
3.7.2 Input	13
3.7.3 Power Loss	13
3.7.4 Communication	13
3.7.5 Environmental Requirements	14
3.8 Guidelines, approvals and standards	14
3.8.1 Guidelines	14
3.8.2 Approvals	14
3.8.3 Standards	15
Fieldbus Description	16
4.1 Technology	16
4.1.1 IO-Link Technology	16
4.1.2 IO-Link – Functions	16
4.2 Parameters	17
4.2.1 General Module Parameters	17
4.2.2 Specific Module Parameters of the WAGO Power Supply Pro 2	18
4.2.3 Data Structure for WAGO Power Supplies Pro 2	18
4.2.4 Parameter Addresses for WAGO Power Supplies Pro 2	19
4.2.4.1 Password Handling	22
4.2.4.2 Baud Rate (Index 380)	22
4.2.4.3 Data bits (Index 382)	22
4.2.4.4 Stop bits (Index 383)	23
4.2.4.5 Parity (Index 384)	23

4.2.4.6	Data format (Index 386)	23
4.2.4.7	Output behavior (Index 394).....	23
4.2.4.8	Configuration of digital input (Index 424)	24
4.2.4.9	Configuration of digital output (Index 432)	25
4.2.4.10	System/General (Index 445)	26
4.3	Messages and Events	27
4.3.1	Error Messages for WAGO Power Supplies Pro 2.....	27
4.3.2	Events and Measured Values for WAGO Power Supply Pro 2	27
4.4	Other.....	28
4.4.1	IODD for WAGO Power Supplies Pro 2	28
	Transport and Storage	29
	Installation and Removal	30
	Decommissioning.....	32
7.1	Disposal and Recycling	32
	Appendix	33
8.1	Device IDs of WAGO Power Supplies Pro 2	33
8.2	Accessories	34
8.3	Protected Rights	34

Provisions



This document applies to the following product:

2789-9080 (IO-Link Communication Module)

Product detail page	 www.wago.com/2789-9080
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The product must only be installed and operated in accordance with the operating instructions. Knowledge of the operating instructions is required for proper use. You can find all documents and information on the detailed product page.

Additional document

-  **Product Manual** of the Pro 2 Power Supply used
-  **Product Manual** IO-Link Master

1.1 Typographical Conventions





Number Notation

100	Decimals: Normal notation
0x64	Hexadecimals: C-notation
'100'	Binary: In single quotation marks
'0110.0100'	Nibbles separated by a period

Text Formatting

<i>italic</i>	Names of paths or files
bold	Menu items, entry or selection fields, emphasis
Code	Sections of program code
>	Selection of a menu point from a menu
"Value"	Value entries
[F5]	Identification of buttons or keys

Cross References / Links

	Cross references/links to a topic in a document
	Cross references / links to a separate document
	Cross references / links to a website
	Cross references / links to an email address

Sequence of Action

- ✓ This symbol identifies a precondition.
- 1. Action step
- 2. Action step
 - ⇒ This symbol identifies an intermediate result.

⇒ This symbol identifies the result of an action.

- Individual action step

Lists

- Lists, first level
 - Lists, second level

Figures

Figures in this documentation are for better understanding and may differ from the actual product design.

Warning Messages

DANGER

Type and source of hazard

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

- Action step to reduce risk

WARNING

Type and source of hazard

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

- Action step to reduce risk

CAUTION

Type and source of hazard

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

- Action step to reduce risk

NOTICE

Type and source of malfunction (property damage only)

Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

- Action step to reduce risk

Information Notices

Note

Information


Indicates information, clarifications, recommendations, referrals, etc.

1.2 Legal Information

Intellectual property

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Third-party trademarks are referred to in the product documentation. The “®” and “™” symbols are omitted hereinafter. The trademarks are listed in the Appendix:  **Protected Rights [▶ 34]**.

Subject to Change

The instructions, guidelines, standards, etc., in this manual correspond to state of the art at the time the documentation was created and are not subject to updating service. The installer and operator bear sole responsibility to ensure they are complied with in their currently applicable form. WAGO GmbH & Co. KG retains the right to carry out technical changes and improvements of the products and the data, specifications and illustrations of this manual. All claims for change or improvement of products that have already been delivered – excepting change or improvement performed under guarantee agreement – are excluded.

Licenses

The products may contain open-source software. The requisite license information is saved in the products. This information is also available under:  www.wago.com.

Safety

2.1 General Safety Rules

- This documentation is part of the product. Therefore, retain the documentation during the entire service life of the product. Pass on the documentation to any subsequent user of the product. In addition, ensure that any supplement to this documentation is included, if necessary.
- The product must only be installed and put into operation by qualified electrical specialists per EN 50110-1/-2 and IEC 60364.
- Comply with the laws, standards, guidelines, local regulations and accepted technology standards and practices applicable at the time of installation.

2.2 Electrical Safety

- Make sure the product does not carry any voltage before starting work.

Grounding/Protection/Fuses

- When handling the product, please ensure that environmental factors (personnel, work space and packaging) are properly equalized. Do not touch any conducting parts.

Cables

- To minimize interference (e.g., by electromagnetic interference), maintain a spatial separation between control, signal and data lines and the power supply lines.
- The specified conductor cross-sections refer exclusively to the mechanical connection capacity of the clamping points. Always use connecting cables designed for the maximum current load.
- Additional heat can be produced at the clamping point by high currents and inherent heat generated by the product. Plan a higher temperature range for the conductors, or reduce inherent heat by selecting larger conductor cross-sections.
- Use appropriate strain relief.

2.3 Mechanical Safety

- Before startup, please check the product for any damage that may have occurred during shipping. Do not put the product into operation in the event of mechanical damage.
- Do not open the product housing.
- The product is an open-type device and is designed for installation in an additional enclosure, which supplies the following safety aspects:
 - Restrict access to authorized personnel and may only be opened with tools.
 - Ensure the required pollution degree in the vicinity of the system.
 - Offer adequate protection against direct or indirect contact.
 - Offer adequate protection against UV irradiation.
 - Prevent fire from spreading outside of the enclosure.
 - Guarantee mechanical stability.

2.4 Thermal Safety

- The surface of the housing heats up during operation. Under special conditions (e.g., in the event of a fault or increased surrounding air temperature), touching the product may cause burns. Allow the product to cool down before touching it.
- The temperature inside the additional enclosure must not exceed the ambient temperature permitted for the mounted product.
- Cooling of the product must not be impaired. Ensure air can flow freely and that the minimum clearances from adjacent products/areas are maintained.

2.5 Indirect Safety

- Only use a dry or cloth or a clothed dampened with water to clean the product. Do not use cleaning agents, e.g., abrasive cleaners, alcohols or acetone.
- Clean tools and materials are imperative for handling the product.
- The product contains no parts that can be serviced by the user. Always have all service, maintenance and repair work performed by specialists authorized by WAGO.
- Replace any defective or damaged devices.

Properties

3.1 Overview

IO-Link is a communication system for connecting intelligent sensors and actuators to an automation system. This communication system is defined in the IEC 61131-9 standard (see [🔗 IO-Link Technology \[▶ 16\]](#)).

The IO-Link Communication Module enables communication with an IO-Link master. It is plugged onto the communication interface that is integrated on the front of the WAGO Power Supply Pro 2. You can find more information in the [📖 Product Manual IO-Link Master](#).

3.2 View



Figure 1: View

a	Locking tab	
b	Ventilation openings	
c	Optical Status Indicator	🔗 Indicators [▶ 12]
d	–	
e	Communication interface	
f	Type label	🔗 Type label [▶ 11]
g	Marker carrier	🔗 Accessories [▶ 34]
h	IO link (X5)	🔗 IO-Link [▶ 12]

3.3 Type label

The product's type plate contains the following information:

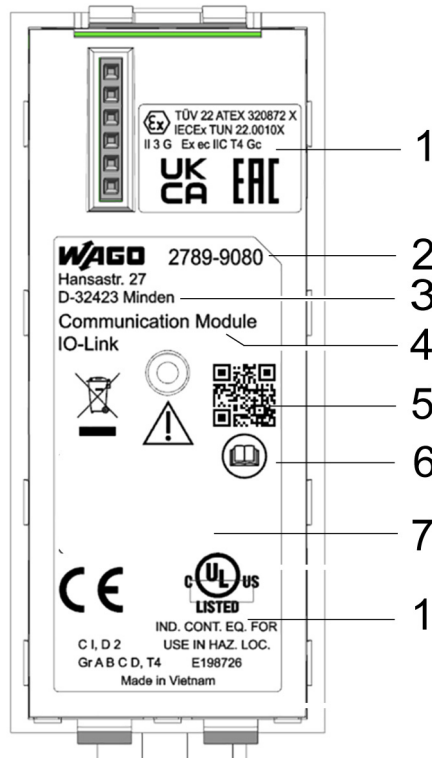


Figure 2: Type label

1	Box for approvals	Approvals [▶ 14]
2	Item Number	
3	Company logo and address	
4	Product name	
5	QR link with link to website	
6	Reference to product documentation	
7	Product-specific information	

3.4 Product-specific information

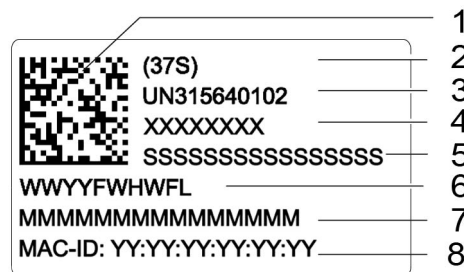


Figure 3: Product-specific information

Position	Comment	Details
1	2D data matrix code	Contains the information for positions 2 ... 5
2	Key number	Fixed information (37S)

Position	Comment	Details
3	ID number per D-U-N-S®	Fixed information (WAGO Minden)
4	WAGO item number or internal SAP number	Product-specific
5	Consecutive number	Product-specific
6	Production date and revision	<ul style="list-style-type: none"> Production date Revision index (FW HW FL)
7	Internal manufacturer product number	Product-specific
8	Media Access Control Identifier	Product-specific

Table 1: Revision index structure

Software index	Hardware index	Boot loader index
FW	HW	FL

3.5 Connections

3.5.1 IO-Link

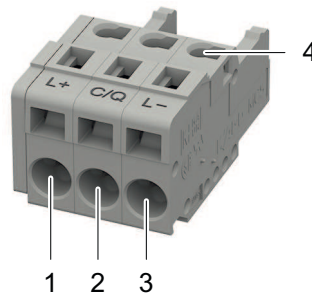


Figure 4: IO-Link X5 port

Pos.	Pin	Description
1	1	Contact “L+” for input voltage
2	2	“C/Q” contact
3	3	“L-” contact for input voltage
4	–	Test slot

Table 2: Details – IO-Link Port

Series	721
Item Number	0721-0103/Z000-0020
Connection Technology	Push-In CAGE CLAMP®

3.6 Indicators

The product has a visual status indicator. This indicator consists of two LEDs.

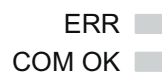


Figure 5: Visual Status Indicator

Table 3: Operating Status Indication

Indicator	LED Description	State	Description
ERR	■	Off	Ready for operation; no error
		On	General error/system error

Indicator	LED Description	State	Description
		Flashing (2 Hz)	IO-Link connection error
		Flashing (8 Hz)	Connection error to the lower-level device
COM OK	■	Device status	Off
		On	Ready for operation
		Flashing (2 Hz)	Communication active

3.7 Technical data

3.7.1 Product

Table 4: Technical Data – Product

Property	Value
Width	35 mm
Height	80 mm / 95 mm (incl. connector/female connector)
Depth	22 mm / 28 mm (incl. latch)
Weight	35 g
Degree of protection	IP20

3.7.2 Input

Table 5: Technical Data – Input

Property	Value
Nominal input voltage	24 VDC SELV (via IO-Link master)
Input voltage range	18 ... 30 VDC SELV (via IO-Link master)
Input current	≤ 15 mA

Table 6: Technical Data – Input Connection

Property	Value	
Cross-section	Solid	0.08 ... 2.5 mm ² / 28 ... 12 AWG
	Fine-stranded	0.08 ... 2.5 mm ² / 28 ... 12 AWG
	Insulated ferrule with plastic collar	0.25 ... 1.5 mm ² / 20 ... 16 AWG
	Ferrule without plastic collar	0.25 ... 2.5 mm ² / 20 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch	
Required tools (conductor termination)	Operating tool, with a partially insulated shaft, type 2 (see Accessories [▶ 34])	

3.7.3 Power Loss

Table 7: Technical Data – Power Loss

Property	Value
Power loss (max.)	0.36 W

3.7.4 Communication

Table 8: Technical Data – Communication

Property	Value
Vendor ID	285

Property	Value
Device ID	Depends on the used Power Suppl, see 🔗 Device IDs of WAGO Power Supplies Pro 2 [p 33] .
Baudrate	230.4 bit/s (COM 3)
Length PD _{IN}	5 bytes
Length PD _{OUT}	1 byte
IO-Link Version	1.1.2
SIO	No
Interlock	DS Lock, Parameter Access Lock
Data storage	Yes
Block parameterization	Yes
ISDU	Yes
Profiles	Common Profile v1.0
Minimum Cycle Time	25.2 ms

3.7.5 Environmental Requirements

Table 9: Technical Data – Environmental Conditions

Property	Value
Test voltage (input/output)	1.8 kVAC, 50 Hz, 1 min
Type of insulation	Functional insulation
Ambient temperature, operation	-25 ... +70 °C
Ambient temperature, storage	-40 ... +85 °C
Relative humidity	5 ... 96 % (no condensation)
Operating altitude above sea level, max.	5000 m
Overvoltage category ¹	III
Pollution degree according to IEC/EN 60664-1	2
Protection class	III (when protective low voltage [SELV] is present via the IO-Link Master)
Protection type ¹	IP20
Isolation	0.63 kV

¹ The lower-level WAGO Power Supply Pro 2

3.8 Guidelines, approvals and standards

3.8.1 Guidelines


An EU “Declaration of Conformity” and CE marking exist for the product.

For additional information, visit [🌐 www.wago.com](http://www.wago.com).

3.8.2 Approvals

The following approvals have been granted for the product:

Table 10: Approvals

Logo	Certification Body	Standard
	Underwriters Laboratories	UL 61010-1

Logo	Certification Body	Standard
	Underwriters Laboratories	UL 61010-2-201
	Underwriters Laboratories	UL 121201, Class I, Division 2, Groups A B C D, T4

Note

More information on approvals

You can find detailed information on the approvals online at:

 www.wago.com/<item number>

3.8.3 Standards

Table 11: Mechanical and Climatic Environmental Conditions

Standard	Test Value
Mechanical Environmental Conditions	
EN 60068-2-6	f = 5 ... 150 Hz: 1g, 3.5 m
IEC 60068-2-27 shock	15g, 11 ms, 6 shocks per axis and direction, half-sine
EN 61131-2, Section 4.3	Freefall ≤ 300 mm (packaged in the product packaging)
Climatic Environmental Conditions	
EN 60870-2-2	3K3 (except for low air pressure)

Table 12: EMV – Immunity to Interference

Standard	Title
EN 61000-6-2	Part 6-2: Generic standards – Immunity for industrial environments
EN 61000-4-2	Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
EN 61000-4-3	Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4	Part 4-4: Testing and measurement techniques – Electrical fast transient/ burst immunity test
EN 61000-4-6	Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-8	Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

Table 13: EMC – Emission of Interference

Standard	Title
EN 61000-6-3	Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments

Fieldbus Description

4.1 Technology

4.1.1 IO-Link Technology

IO-Link defines a communication standard (acc. IEC 61131-9) for connecting both current digital inputs/outputs and intelligent IO-Link devices to the controller level. IO-Link devices describe sensors and actuators of the field level that have IO-Link functionality.

The IO-Link technology is predominantly used in the industrial sector of manufacturing automation. With IO-Link, configuration, diagnostics and maintenance from the controller are possible to the lowest field level in addition to process data communication. For example, sensor failures can be diagnosed and localized in the controller directly.

With central parameter data storage in the IO-Link master and the possibility of project development, connected devices can be simply replaced and configurations copied.

Communication occurs via serial point-to-point links in standard -3-wire technology. Both data and diagnostic information as well as power supply are carried over the serial IO-Link interface simultaneously.

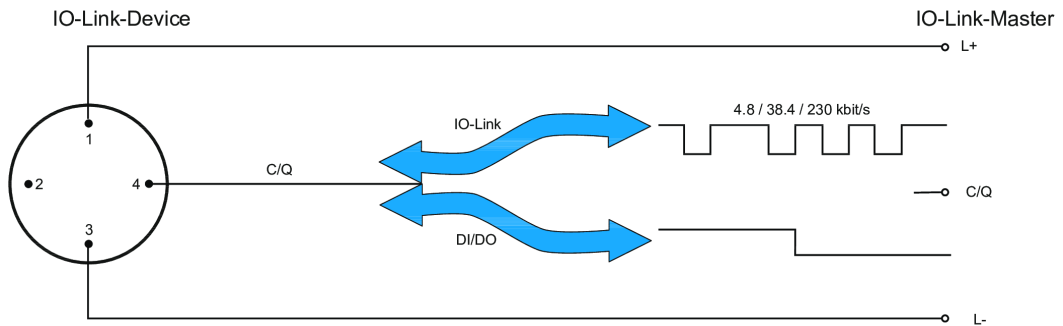


Figure 6: 3-Wire Connection Technology (Based on Physics 2 of the IO-Link Specification 1.0.0)

Configuration of IO-Link devices is based on standardized description files “IO Device Description” (IODD), which are provided by the device manufacturers and imported into the respective configuration software. Thus, IO-Link devices can be integrated in current automation systems and network structures independent of the bus systems used.

4.1.2 IO-Link – Functions

The production has the following functions:

- Reading the current settings from the lower-level device.
- Cyclic reading of the status from the lower-level device.
- Writing settings on the lower-level device.
- Controlling the lower-level device.
- Implementing the “Common Profiles” from IO-Link into the product.

4.2 Parameters

4.2.1 General Module Parameters

The product uses the following default IO-Link parameters:

Table 14: Standard parameters of IO-Link

Index	Subindex	Parameters	Data Type	Datenlänge (Bytes)	Description
12	0	Device Access Locks	RecordT	2	Standardized Device locking functions
13	0	Profile Characteristic	ArrayT of UIntegerT16	2	Profile characteristic
14	0	PDInput Descriptor	ArrayT of OctetStringT3	3	Reserved for Device profile
15	0	PDOOutput Descriptor	ArrayT of OctetStringT3	3	Reserved for Device profile
16	0	Vendor Name	StringT	32	Informative
17	0	Vendor Text	StringT	32	Additional vendor information
18	0	Product Name	StringT	32	Detailed product or type name
19	0	Product ID	StringT	32	Product or type identification
21	0	Serial Number	StringT	16	Description of Device function or characteristic
22	0	Hardware Revision	StringT	5	Vendor specific serial number
23	0	Firmware Revision	StringT	8	Vendor specific format
24	0	ApplicationSpecific Tag	StringT	32	Vendor specific format
25	0	Function Tag	StringT	32	Tag location or tag function defined by user
26	0	Location Tag	StringT	32	Standardized Device locking functions
36	0	Device Status	UIntegerT	1	Contains current status of the Device
37	0	Detailed Device Status	ArrayT of OctetStringT3	96	
40	0	ProcessDataInput		32	Read last valid Process Data from PDin channel
41	0	ProcessDataOutput		32	Read last valid Process Data from PDout channel

For more information on these default parameters, see:

- IO-Link Interface and System Specification Version 1.1.2 Table B.8
- IO-Link Common Profile Specification Version 1.0 Table B.1

4.2.2 Specific Module Parameters of the WAGO Power Supply Pro 2

The product uses the following WAGO-specific parameters:

Table 15: WAGO-specific parameters

Index	Subindex	Parameters	Data Type	Data length (Bytes)	Description
12001	0	Part number module	StringT	8	Module item number
12002	0	Part number extension (module)	StringT	8	Item number extension of the module
12003	0	Hardware version module	StringT	2	HW Release Index of the module in the "XX" format
12004	0	Firmware version module	StringT	8	FW Revision of the module in the "XX.XX.XX" format
12005	0	Configuration ID module	UIntegerT	4	Configuration ID of the module

4.2.3 Data Structure for WAGO Power Supplies Pro 2

The product has the following structure:

- 5-byte input process data
- 1-byte output process data

The structure of the input and output process data is explained below.

Input Process Data

The product has the following input process data (5 bytes):

Table 16: Process Data Structure

Byte	Description
0	Status messages (see Table "Status Message Structure")
1 ... 2	Measured output current 0.000 ... 65.535 A in steps of 1 mA
3 ... 4	Measured output voltage 0.000 ... 65.535 V in steps of 1 mV

Table 17: Status Message Structure

Bit	Description
0	DC OK Set when the output voltage is OK.
1	Overtemperature shutdown $T \geq T_{max}$
2	No output voltage
3	Short circuit at output
4	Digital output set
5 ... 7	Reserved

Output Process Data

The product has the following output process data (1 byte):

Table 18: Control Data Structure

Bit	Description
0	Set device to standby
1	Set DO
2 ... 7	Reserved

4.2.4 Parameter Addresses for WAGO Power Supplies Pro 2

Table 19: Parameter Addresses

In- dex	Sub inde x	Param- eter	Access	Data type	Data Storage	Default set- ting	Range	Data length (Bytes)	Description
340	0	Pass- word	write only	StringT	No			8	Password (see Password Handling [P 22])
348	0	Pass- word protec- tion level	read/write	UIntegerT	No	0		2	Password protec- tion (for options see Password Handling [P 22])
378	0	Device ad- dress	read/write	UIntegerT	Yes	1	1 ... 247	2	Device ID
379	0	Termi- nation	read/write	UIntegerT	Yes	0	0 ... 2	2	No termination
380	0	Baud rate	read/write	UIntegerT	Yes	19200	4800 ... 560800	4	Baud rate (for op- tions see Baud Rate (Index 380) [P 22])
382	0	Data bits	read/write	UIntegerT	Yes	1	0 ... 1	2	Data bits (for op- tions see Data bits (Index 382) [P 22])
383	0	Stop bits	read/write	UIntegerT	Yes	0	0 ... 3	2	Stop bits (for op- tions see Stop bits (Index 383) [P 23])
384	0	Parity	read/write	UIntegerT	Yes	1	0 ... 2	2	Parity (for options see Parity (In- dex 384) [P 23])
385	0	Re- sponse delay	read/write	UIntegerT	Yes	0 ms	0 ... 32 ms	2	Time between re- ceive and respond
386	0	Data format	read/write	UIntegerT	Yes	0	0 ... 2	2	Data format (for options see Data format (Index 386) [P 23])
392	0	Output voltage	read/write	UIntegerT	Yes	12 V: 12000 24 V: 24000 48 V: 48000	11500 ... 14000 mV 23500 ... 28500 mV 47500 ... 56500 mV	2	Requested output voltage

In- dex	Sub inde x	Param- eter	Access	Data type	Data Storage	Default set- ting	Range	Data length (Bytes)	Description
393	0	Over- load warning thresh- old	read/write	UIntegerT	Yes	2.5 A: 0 mA 5 A: 0 mA 10 A: 0 mA 15 A: 0 mA 20 A: 0 mA 40 A: 0 mA	0 ... 2500 mA 0 ... 5000 mA 0 ... 10000 mA 0 ... 15000 mA 0 ... 20000 mA 0 ... 40000 mA	2	Overload threshold between > 0 A and rated current.
394	0	Output Behav- ior	read/write	UIntegerT	Yes			2	Behavior settings (for options see Output behavior (Index 394) [P 23])
395	0	Switch- on de- lay	read/write	UIntegerT	Yes	0 ms	0 ... 60000 ms	2	User-configurable switch-on delay (waiting time between AC mains voltage is applied, i.e., the processor has booted and power stages are switched on).
404	0	Trip current	read/write	UIntegerT	Yes	2,5 A: 2500 mA 5 A: 5000 mA 10 A: 10000 mA 15 A: 15000 mA 20 A: 20000 mA 40 A: 40000 mA	250 ... 2500 mA 500 ... 5000 mA 1000 ... 10000 mA 1500 ... 15000 mA 2000 ... 20000 mA 4000 ... 40000 mA	2	User-configurable threshold between 10 % of rated current and rated current.
405	0	Trip de- lay	read/write	UIntegerT	Yes	100 ms	100 ... 60000 ms	2	Circuit breaker function: User-configurable time how long an overcurrent is ignored. 100 ... 60000 ms
424	0	Signali- sation Config- uration of digi- tal input	read/write	UIntegerT	No			2	Digital input behavior settings (for options see Configuration of digital input (Index 424) [P 24])
432	0	Signali- sation Config- uration of digi- tal out- put	read/write	UIntegerT	No			2	Digital output behavior settings (for options see Configuration of digital output (Index 432) [P 25])

In- dex	Sub inde x	Param- eter	Access	Data type	Data Storage	Default set- ting	Range	Data length (Bytes)	Description
444	0	Operat- ing hours counter thresh- old	read/write	UIntegerT	Yes	0 h	0 ... 65000 h	2	Digital output be- havior settings (for options see Configuration of digital output (Index 432) [▶ 25])
445	0	Sys- tem/ Gen- eral	read/write	UIntegerT	Yes			2	Behavior settings and system pa- rameters (for op- tions see Sys- tem/General (In- dex 445) [▶ 26])

DC Output

Table 20: Parameters – DC Output

Index	Subindex	Parameter	Access	Data type	Data length (Bytes)	Description
1542	0	Output power	read only	UIntegerT	4	Output power
1544	0	Output energy of last second	read only	UIntegerT	4	Output level for the previ- ous second
1546	0	Output energy of last minute	read only	UIntegerT	4	Output level for the previ- ous minute
1548	0	Output energy of last hour	read only	UIntegerT	4	Output level for the previ- ous hour
1550	0	Output energy total operation time	read only	UIntegerT	4	Output level for the overall runtime
1558	0	Counter 'Standby Time'	read only	UIntegerT	4	"Standby Time" counter
1560	0	Counter 'Oper- ating Time'	read only	UIntegerT	4	"Operating Time" counter
1562	0	Counter 'Num- ber of supplied TopBoosts'	read only	UIntegerT	2	"Number of supplied TopBoost" counter
1563	0	Counter 'Num- ber of supplied PowerBoosts'	read only	UIntegerT	2	"Number of supplied PowerBoost" counter
1564	0	Counter 'High device temper- ature'	read only	UIntegerT	4	"High device temperature" counter
1566	0	Counter 'Over- heating, device switched off'	read only	UIntegerT	4	"Overheating, device switched off" counter

4.2.4.1 Password Handling

Note

Device must be manually locked!

After the lower-level device is unlocked, it is not automatically relocked. The device lock must be performed manually.

“Password” Parameter

The parameter is used in big-endian format. Only ASCII characters may be used (e.g., for password “123,” a message with the following hexadecimal values must be sent: 31 32 33).

“Password protection level” Parameter

The “Password protection level” parameter controls the behavior of the lower-level device in terms of password protection. There are three password levels:

Table 21: Selection options for password protection

Value	IODD Value	Description
0	no password	No password protection
1	write protection (parameters)	Write protection for parameters
2	read_write protection (parameters)	Read/write protection for parameters

Note

Set the password first!

When parameterizing the password, the parameter “Password” must be set first, afterwards the parameter “Password Protection Level” must be configured.

4.2.4.2 Baud Rate (Index 380)

Table 22: Selection options for baud rate

Value	IODD Value
4800	4800 baud
9600	9600 baud
19200	19200 baud
38400	38400 baud
57600	57600 baud
115200	115200 baud
230400	230400 baud
560800	560800 baud

4.2.4.3 Data bits (Index 382)

Table 23: Selection options for data bits

Value	IODD Value	Description
0	0	7 bits
1	1	8 bits

4.2.4.4 Stop bits (Index 383)

Table 24: Selection options for stop bits

Value	IODD Value	Description
0	0	1
1	1	0.5
2	2	2
3	3	1.5

4.2.4.5 Parity (Index 384)

Table 25: Selection options for parity

Value	IODD Value	Description
0	Off	None
1	Even	Even
2	Odd	Odd

4.2.4.6 Data format (Index 386)

Table 26: Selection options for data formats

Value	IODD Value	Description
0	Big endian	B0, B1, B2, B3
1	Middle endian	B2, B3, B0, B1
2	Little endian	B3, B2, B1, B0

4.2.4.7 Output behavior (Index 394)

Output on

Bit 0 enables or disables the output.

Table 27: Output on

Bit 0	IODD Value	Description
1	active	enabled
0	inactive	disabled

“Active Droop” parallel mode

Bit 1 enables or disables the “Active Droop” parallel switching mode.

Table 28: “Active Droop” parallel mode

Bit 1	IODD Value	Description
1	active	enabled
0	inactive	disabled

Overload warning

Bit 2 enables or disables the overload threshold warning.

Table 29: Overload warning

Bit 2	IODD Value	Description
1	active	enabled
0	inactive	disabled

Enable switching the DC output on and off

Bit 3 enables or disables the control of the output via cyclic process data.

Table 30: Enable switching the DC output on and off via cyclic process data

Bit 3	IODD Value	Description
1	active	enabled
0	inactive	disabled

Overload behavior

Bits 6 ... 9 control the overload behavior.

Table 31: Overload behavior

Bit 6	Bit 7	Bit 8	Bit 9	IODD Value	Description
1	0	0	0	Constant current	Constant current
0	1	0	0	Constant current (latching mode)	Constant current with latching shut-down
0	0	1	0	Hiccup mode	Hiccup mode
0	0	0	1	Electronic circuit breaker	Electronic circuit breaker

Latching after thermal overload

Bit 12 controls the latching shutdown in case of thermal overload.

Table 32: Latching after thermal overload

Bit 12	IODD Value	Description
1	active	enabled
0	inactive	disabled

Boost behavior

Bits 13 and 14 control the boost behavior.

Table 33: Boost Behavior

Bit 13	Bit 14	IODD Value	Description
0	0	No Boost	Boost disabled
0	1	TopBoost	TopBoost enabled
1	0	PowerBoost	PowerBoost enabled
1	1	PowerBoost + TopBoost	TopBoost and PowerBoost enabled

4.2.4.8 Configuration of digital input (Index 424)

Enable switching DC output on/off via DI

Bit 0 enables switching on and off the output of the power supply. A LOW level at the DI means that the output is switched on. A HIGH level at the DI means that the output is switched off.

Table 34: Enable switching DC output on/off via DI

Bit 0	IODD Value	Description
1	active	enabled
0	inactive	disabled

Digital input settings

Bits 10 to 12 control the settings of the digital input.

Table 35: Digital input settings

Bit 10	Bit 11	Bit 12	IODD Value	Description
0	0	0	Non-inverted	normal, not inverted
1	0	0	Inverted	inverted
0	1	0	Function triggered by low-high transition	Function on edge change (0 to 1)
0	0	1	Function triggered by high-low transition	Function on edge change (1 to 0)

4.2.4.9 Configuration of digital output (Index 432)

DC OK

Bit 0 enables or disables the output of the DC OK status via the digital output.

Table 36: DC OK

Bit 0	IODD Value	Description
1	active	enabled
0	inactive	disabled

Load current warning level exceeded

Bit 1 indicates whether the overload warning threshold has been exceeded.

Table 37: Load current warning level exceeded

Bit 1	IODD Value	Description
1	active	enabled
0	inactive	disabled

Electronic circuit breaker tripped

Bit 2 indicates whether the electronic circuit breaker has tripped.

Table 38: Electronic circuit breaker tripped

Bit 2	IODD Value	Description
1	active	enabled
0	inactive	disabled

Power supply switched off (latched)

Bit 3 controls the latching shutdown.

Table 39: Power supply switched off (latched)

Bit 3	IODD Value	Description
1	active	enabled
0	inactive	disabled

Enable switching DO on/off via process data

Bit 4 enables or disables the control of the output via cyclic process data.

Table 40: Enable switching DO on/off via process data

Bit 4	IODD Value	Description
1	active	enabled
0	inactive	disabled

Digital output on

The DO is controlled if “Enable switching DO on/off via process data” is enabled.

Table 41: Digital output on

Bit 5	IODD Value	Description
1	active	enabled
0	inactive	disabled

Inverted settings

Bit 10 determines whether inverted or non-inverted settings are used.

Table 42: Inverted settings

Bit 10	IODD Value	Description
0	Non-inverted	normal, not inverted
1	Inverted	inverted

4.2.4.10 System/General (Index 445)

Behavior on application of power

Bits 0 to 2 determine the behavior with applied voltage.

Table 43: Behavior on application of power

Bit 0 ¹	Bit 1 ¹	Bit 2 ¹	IODD Value	Description
1	0	0	Restore previous state	Restore previous state
0	1	0	DC output switched on	DC output switched on
0	0	1	DC output remains switched off	DC output remains switched off

1) Bits 0, 1 and 2 must be mutually locked (at least one bit must be set).

Activate switch-on delay

Bit 3 enables or disables the switch-on delay.

Table 44: Activate switch-on delay

Bit 3	IODD Value	Description
1	active	enabled
0	inactive	disabled

Activate key lock

Bit 6 enables or disables the key lock.

Table 45: Activate key lock

Bit 6	IODD Value	Description
1	active	enabled
0	inactive	disabled

Disable reset to factory settings

Bit 7 locks or unlocks the reset to factory settings.

Table 46: Disable reset to factory settings

Bit 7	IODD Value	Description
1	active	enabled
0	inactive	disabled

4.3 Messages and Events

4.3.1 Error Messages for WAGO Power Supplies Pro 2

Table 47: Error Messages

Index (Hex.)	Error Message	Description
0x8000	Device application error – no details	Unsupported function
0x8011	Index not available	Parameters not available on this index.
0x8012	Subindex not available	Subindex not available
0x8023	Access denied – Index not writeable	Write access to RO ¹⁾ parameter
0x8030	Parameter value out of range	Limiting value overrun
0x8033	Parameter length overrun	Invalid parameter length, structure error, CRC ²⁾ error
0x8035	Function not available	Writing an invalid value to command parameter.
0x8036	Function temporarily unavailable	Command not possible due to current command status (e.g., during block parameterization that is not closed; other commands are rejected).
0x8040	Invalid parameter set	Written parameter value does not match the current configuration.
0x8041	Inconsistent parameter set	Plausibility check of the block parameterization failed.
0x8158	Password protection active	No parameter access; password protection enabled
¹⁾ Read Only ²⁾ Cyclic redundancy check		

4.3.2 Events and Measured Values for WAGO Power Supply Pro 2

Table 48: Events – Warnings

Index	Bit No.	Events – Warning	Description
1539	0	Output under-voltage	Undervoltage at output below DC OK threshold
	1	outOverVoltage	Overvoltage: +10 % of the set output voltage
	2	OutputOverLoad	Overload present
	3	outOverLoadCustom	Configurable overload threshold has been exceeded.
	4	opHoursLimitReached	Configurable operating hours have been reached.
	5	powerBoostActive	PowerBoost output, information is visible for 5 seconds.
	6	topBoostActive	TopBoost output, information is visible for 5 seconds.
	7	highTemperature	High device temperature
	8	diEvent	Event on DI is present.

Table 49: Events – Errors

Index	Bit No.	Events – Errors	Description
1540	0	Overheating, device switched off	Overtemperature, device switched off
	1	No output voltage	No output voltage
	2	Output short circuit	Short circuit at output
	3	Electronic circuit breaker tripped	Circuit breaker tripped

4.4 Other

4.4.1 IODD for WAGO Power Supplies Pro 2

An IODD (manufacturer's device description file) can be assigned to each connected IO-Link-capable product. This IODD contains the available parameters.

You can find the IODD for WAGO products here: [🌐 https://ioddfinder.io-link.com](https://ioddfinder.io-link.com):

1. Enter **WAGO** as the manufacture on the search screen.
2. Click the **[Next]** button.
 - ⇒ The page with all IODDs from WAGO opens.
3. Select your product and your IODD version.
4. Click **[Download]**.
5. Click **[Save File]**.
 - ⇒ The IODD is saved as a package in zip format on your PC.

The following files are included in the IODD package:

- Actual IODD in XML format
- Corresponding product images
- WAGO logo

You can find more information about IODD in the  **Product Manual IO-Link Master**.

Transport and Storage

The original packaging offers optimal protection during transport and storage.

- Store the product in suitable packaging, preferably the original packaging.
- Only transport the product in suitable containers/packaging.
- Make sure the product contacts are not contaminated or damaged during packing or unpacking.
- Observe the specified ambient climatic conditions for transport and storage.

Installation and Removal

! NOTICE

Do not cover the ventilation openings!

Covered ventilation openings can lead to overheating of the product.

- Keep all ventilation openings clear!

The letters shown in parentheses refer to positions in figure “View” in [View \[▶ 10\]](#).

i Note

Mounting positions

The nominal mounting position is (see also figure “View” in [View \[▶ 10\]](#)): front side facing forwards, marking legible, bottom ventilation openings (b) facing upwards and downwards

Mounting

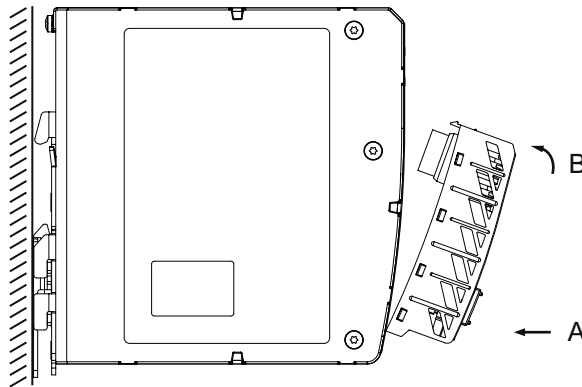


Figure 7: Mounting

Install the product by snapping it onto the WAGO Power Supply Pro 2 (see figure “Installation”):

1. Remove the cap from the communication interface on the WAGO Power Supply Pro 2.
2. Keep the cap in a safe place so that you can cover the communication interface again when this interface is not required.
3. Remove the mounted marker carrier from the WAGO Power Supply Pro 2.
4. Insert the product with the lower latches into the lower mounting slots of the WAGO Power Supply Pro 2 [A].
5. Slide the product toward the communication interface [B] until the top latches latch into the top mounting slots.
6. Verify that the product is snapped on properly.

Removal

! NOTICE

Material damage due to hot swapping!

Hot swapping the product leads to increased abrasion of the contacts. Resulting in a shorter product life time.

- Only remove the product when it is switched off.

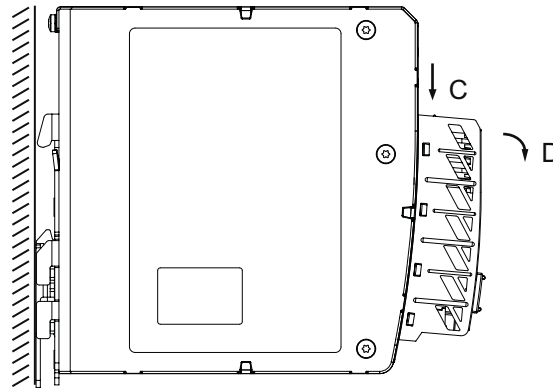


Figure 8: Removal

1. Press the top locking tab (a) of the product [C].
2. Pivot the product to remove it from the WAGO Power Supply Pro 2 [D].


! NOTICE

Avoid electrostatic discharge!

The products are equipped with electronic components that you may destroy by electrostatic discharge when you touch. Please observe the safety precautions against electrostatic discharge in accordance with EN 61340-5-1/-3. Pay attention while handling the products to good grounding of the environment (persons, job and packing).

Decommissioning

7.1 Disposal and Recycling

	WEEE Mark Electrical and electronic equipment may not be disposed of with household waste. This also applies to products without this mark.
---	---

Electrical and electronic equipment contain materials and substances that can be harmful to the environment and health. Electrical and electronic equipment must be disposed of properly after use. Environmentally friendly disposal benefits health, protects the environment from harmful substances in electrical and electronic equipment and enables sustainable and efficient use of resources.

- Observe the national and local regulations for the disposal of electrical and electronic equipment, lithium-ion batteries, lead–acid batteries and packaging.
- Clear any data stored on electrical and electronic equipment.
- Remove lithium-ion batteries, lead–acid batteries or memory cards that are added to the electrical and electronic equipment.
- Wear appropriate personal protective equipment when removing the lithium-ion batteries/lead–acid batteries.
- Dispose of the removed lithium-ion batteries/lead–acid batteries according to your local waste regulations (e. g. collection boxes at the retail or local collection points).
- Have electrical and electronic equipment sent to a local collection point.
- Dispose of all types of packaging to ensure a high level of recovery, reuse and recycling.
- Transport packages from the B2B area can be taken back free of charge via a return system in accordance with the Packaging Act. Please contact our service provider Interseroh directly. The corresponding certificate can be found at: [🌐 corporate-certificates](#)
- Throughout Europe, Directives 2006/66/EC, 94/62/EC and 2012/19/EU (WEEE) apply. National directives and laws may differ.

Appendix

8.1 Device IDs of WAGO Power Supplies Pro 2

Table 50: Device IDs of the respective Pro 2 variant

Article number	Device ID
2787-2144	12591169 12591170 12591171
2787-2144/000-030 2787-2144/000-070	12591171
2787-2146	12591233 12591234 12591235
2787-2146/000-030 2787-2146/000-070	12591235
2787-2147	12591297 12591298 12591299
2787-2147/000-030 2787-2147/000-070	12591299
2787-2448	12591361 12591362 12591363
2787-2448/000-030 2787-2448/000-070	12591363
2787-2347	12591425 12591426 12591427
2787-2347/000-030 2787-2347/000-070	12591427
2787-2348	12591490 12591491
2787-2348/000-030 2787-2348/000-070	12591491
2787-2134 2787-2134/000-030 2787-2134/000-070	12591683
2787-2135 2787-2135/000-030 2787-2135/000-070	12591555
2787-2154 2787-2154/000-030 2787-2154/000-070	12592131

Article number	Device ID
2787-2157	12591619
2787-2157/000-030	
2787-2157/000-070	
2787-2344	12592195
2787-2344/000-030	
2787-2344/000-070	
2787-2346	12592259
2787-2346/000-030	
2787-2346/000-070	
2787-2357	12592323
2787-2357/000-030	
2787-2357/000-070	
2787-2358	12592387
2787-2358/000-030	
2787-2358/000-070	

8.2 Accessories

The following accessories are available for the product:

Accessories – Tools

Table 51: Accessories – Tools

Description	Name	Item Number
Operating Tool with Partially Insulated Shaft	Type 2, blade 3.5 × 0.5 mm	210-720

Accessories – Marking

Table 52: Accessories – Marking

Description	Item Number
Marker Carrier	2789-1233
Marking System	2009-0110
WMB Multi Marking System	2009-0115
	2009-0115/0000-0002

Accessories – Spare Parts

Table 53: Accessories – Spare Parts

Description	Item Number
Female connector as spare part, input	0721-0103/Z000-0020

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List of Tables

Table 1	Revision index structure.....	12
Table 2	Details – IO-Link Port.....	12
Table 3	Operating Status Indication.....	12
Table 4	Technical Data – Product.....	13
Table 5	Technical Data – Input.....	13
Table 6	Technical Data – Input Connection.....	13
Table 7	Technical Data – Power Loss	13
Table 8	Technical Data – Communication	13
Table 9	Technical Data – Environmental Conditions	14
Table 10	Approvals.....	14
Table 11	Mechanical and Climatic Environmental Conditions	15
Table 12	EMV – Immunity to Interference	15
Table 13	EMC – Emission of Interference	15
Table 14	Standard parameters of IO-Link.....	17
Table 15	WAGO-specific parameters	18
Table 16	Process Data Structure.....	18
Table 17	Status Message Structure.....	18
Table 18	Control Data Structure	19
Table 19	Parameter Adresses	19
Table 20	Parameters – DC Output	21
Table 21	Selection options for password protection	22
Table 22	Selection options for baud rate	22
Table 23	Selection options for data bits.....	22
Table 24	Selection options for stop bits	23
Table 25	Selection options for parity.....	23
Table 26	Selection options for data formats	23
Table 27	Output on	23
Table 28	“Active Droop” parallel mode	23
Table 29	Overload warning.....	23
Table 30	Enable switching the DC output on and off via cyclic process data.....	24
Table 31	Overload behavior.....	24
Table 32	Latching after thermal overload	24
Table 33	Boost Behavior.....	24
Table 34	Enable switching DC output on/off via DI.....	24
Table 35	Digital input settings.....	25
Table 36	DC OK.....	25

Table 37	Load current warning level exceeded	25
Table 38	Electronic circuit breaker tripped.....	25
Table 39	Power supply switched off (latched)	25
Table 40	Enable switching DO on/off via process data	26
Table 41	Digital output on	26
Table 42	Inverted settings.....	26
Table 43	Behavior on application of power.....	26
Table 44	Activate switch-on delay	26
Table 45	Activate key lock	26
Table 46	Disable reset to factory settings.....	27
Table 47	Error Messages.....	27
Table 48	Events – Warnings.....	27
Table 49	Events – Errors	28
Table 50	Device IDs of the respective Pro 2 variant.....	33
Table 51	Accessories – Tools.....	34
Table 52	Accessories – Marking.....	34
Table 53	Accessories – Spare Parts.....	34

List of Figures

Figure 1	View	10
Figure 2	Type label	11
Figure 3	Product-specific information	11
Figure 4	IO-Link X5 port.....	12
Figure 5	Visual Status Indicator	12
Figure 6	3-Wire Connection Technology (Based on Physics 2 of the IO-Link Specification 1.0.0).....	16
Figure 7	Mounting	30
Figure 8	Removal.....	31

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