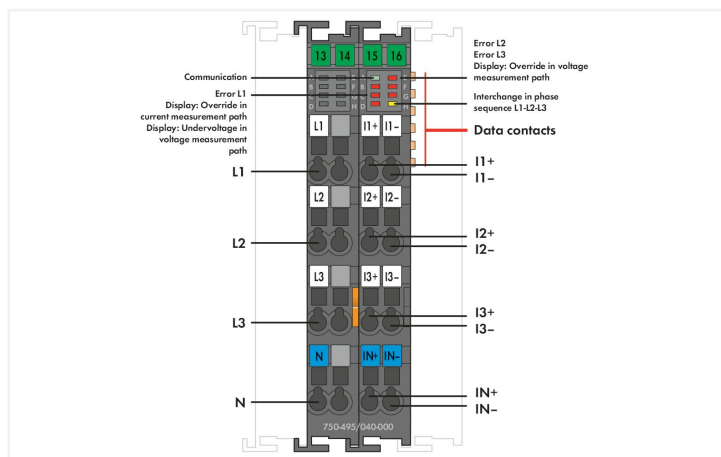
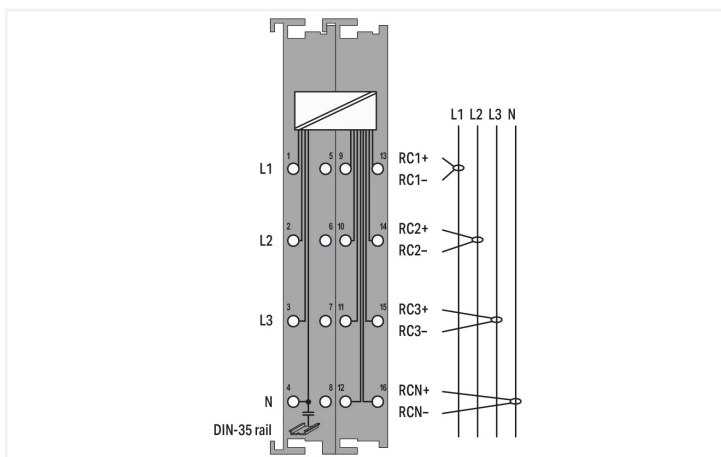
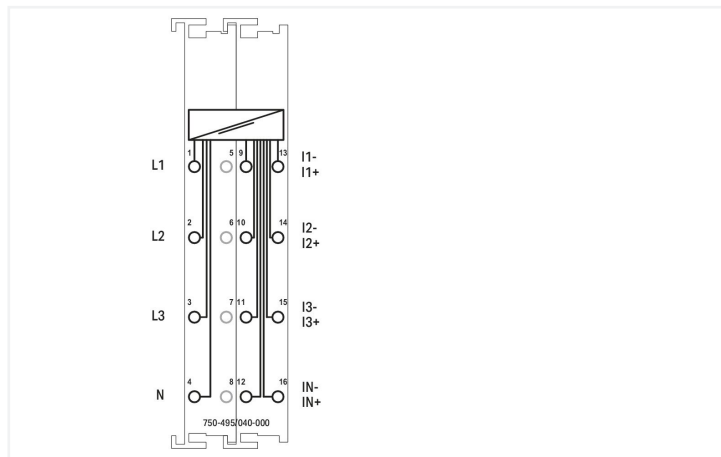




Color: ■ dark gray



The 750-495 3-Phase Power Measurement Module measures electrical data in a three-phase supply network. The voltage is measured via network connection to L1, L2, L3 and N. The current of the three phases is fed to IL1, IL2, IL3 and IN (two clamping points each +,-) via current transformers or via Rogowski coils for the 750-495/000-002 Module. The module transmits metrics (e.g., reactive/apparent/effective power, energy consumption, power factor, phase angle, frequency, over-/undervoltage) directly into the process image, without requiring high computing power from the controller. Both comprehensive metrics and harmonic analysis up to the 41st harmonic permit extensive network analysis via the fieldbus. These metrics enable the operator to optimize supply to a drive or machine, protecting the system from damage and failure. Insulation failures can be detected and prevented via current measurement performed in the neutral conductor. The four-quadrant display indicates the load type (inductive, capacitive) and whether it is an energy consumer or producer.

**The device is ideal for operation in extreme environments thanks to:**

- An extended temperature range
- Higher vibration and shock resistance

### Technical data

Number of measurement inputs	7 (3 voltage measurement inputs, 4 differential current measurement inputs)
Signal type	Power measurement
Signal form	Sinusoidal signals (taking the cutoff frequency into account)
Resolution [bit]	24 bits
Data width	2 x 128-bit data; 2 x 64-bit control/status
Voltage path input resistance (typ.)	1429 kΩ
Current path input resistance (typ.)	22 kΩ
Reference for measurement error	AC current/voltage
Measurement error (reference temperature)	23 °C
Measurement error, deviation (max.) from the upper-range value	0.5 %
Measurement current (max.)	Secondary voltages of Rogowski coils up to 88 mV
Measurement cycle time	Adjustable for the arithmetic mean value, min./max. values
Frequency range (mains frequency)	50/60 Hz

## Technical data

Frequency range (harmonics analysis)	0 ... 3300 Hz
Limit frequency	15.9 kHz
Permissible common mains supply systems	Three-phase, four-wire system: max. 277/480 VAC; Three-phase, three-wire system: max. 600 VAC (UL)
Note on common mains supply systems	Under special conditions (see manual), $U_{LL}$ up to 690 V are possible
Upper-range value for the measurement accuracy	400/690 V
Calculated values	Line-to-line voltage, power output, energy, power factors, mains frequency, harmonic analysis (up to the 41st harmonic), THD
Measurement method	True RMS measurement
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	100 mA
Indicators	LED (A) green: Communication; LED (B-G) red: Error L1, Override in Current Measurement Path (display), Undervoltage in Voltage Measurement Path (display), Error L2, Error L3, Override in Voltage Measurement Path (display); LED (H) yellow: Interchange in Phase Sequence L1-L2-L3

## Safety and protection

Measurement category per EN/UL 61010-2-030	CAT III up to 3,000 m; CAT II at 3,000 m ... 5,000 m
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### Test voltage

Test voltage	3.51 kVAC, 50/60 Hz, 1 min.
Rated surge voltage	System/field side: 5.0 kV (EN 60870-2-1 / Class VW3) 6.4 kV (EN/UL 61010-1)

### Insulation coordination per EN/UL 61010-2-201 with N connection

System voltage	$\leq 300$ V
Note on system voltage	The system voltage is derived from the line-to-neutral voltage for common MAINS supply systems.
Overvoltage category	III up to 3,000 m; II at 3,000 m ... 5,000 m
Insulation type	Reinforced insulation

### Insulation coordination per EN/UL 61010-2-201 without N connection

System voltage	$\leq 600$ V
Note on system voltage	The neutral 'N' connector shall not be connected to ensure safe isolation. The system voltage is derived from the line-to-neutral voltage for common MAINS supply systems.
Overvoltage category	III up to 3,000 m; II at 3,000 m ... 5,000 m
Insulation type	Double insulation (Basic insulation and Supplementary Insulation by Impedance/current measurement transformer). Safe isolation for neighboring SELV/PELV modules must be maintained. User manual 750-495/040-00x, section "Isolation to Adjacent I/O Modules per EN/UL 61010 2-201" contains the types of insulation to neighboring modules. The 750-495/040-00x Power Measurement Module must not be attached directly to SELV/PELV modules without double or reinforced insulation. A 750-616/040-000 distance module must be attached at these conditions.

## Connection data

Connection technology: inputs/outputs	12 x CAGE CLAMP®
Connection type 1	Inputs/outputs
Solid conductor	0.25 ... 2.5 mm <sup>2</sup> / 24 ... 14 AWG
Fine-stranded conductor	0.25 ... 2.5 mm <sup>2</sup> / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
Note (conductor cross-section)	Solid conductor: 20 ... 14 AWG (UL); Fine-stranded conductor: 20 ... 16 AWG (UL) These values refer exclusively to the mechanical connection capacity of the clamping points. When the applications/devices are operated in locations covered by UL, only solid conductor with 20 ... 14 AWG and fine-stranded conductor with 20 ... 16 AWG are permitted.

### Physical data

Width	24 mm / 0.945 inches
Height	100 mm / 3.937 inches
Depth	67.8 mm / 2.669 inches
Depth from upper-edge of DIN-rail	60.6 mm / 2.386 inches

### Mechanical data

Mounting type	DIN-35 rail
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### Material data

Color	dark gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	1.997 MJ
Weight	90 g
Conformity marking	CE

### Environmental requirements

Ambient temperature (operation)	-40 ... +70 °C
Ambient temperature (storage)	-40 ... +85 °C
Protection type	IP20
Pollution degree	2 per EN 60664-1
Operating altitude	without temperature derating: 0 ... 2000 m; with temperature derating: 2000 ... 5000 m (0.5 K/100 m); 5000 m (max.)
Mounting position	horizontal left, horizontal up, vertical top and vertical bottom
Relative humidity (without condensation)	95 %
Relative humidity (with condensation)	Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for wind-driven precipitation, water and ice formation)
Vibration resistance	per IEC 60068-2-6 (acceleration: 5g), EN 60870-2-2, IEC 60721-3-1, -3, EN 50155; EN 61373
Shock resistance	per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks), EN 50155, EN 61373
EMC immunity to interference	per EN 61000-6-1, -2; EN 61131-2; marine applications; EN 50121-3-2; EN 50121-4, -5; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994
EMC emission of interference	per EN 61000-6-3, -4, EN 61131-2, EN 60255-26, marine applications, EN 60870-2-1, EN 61850-3, EN 50121-3-2, EN 50121-4, -5
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO <sub>2</sub> contaminant concentration at a relative humidity 75 %	25 ppm

### Commercial data

eCl@ss 10.0	27-24-26-05
eCl@ss 9.0	27-24-26-05
ETIM 8.0	EC001601
ETIM 7.0	EC001601
PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
Customs tariff number	85389099990

## Environmental Product Compliance

RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II

## Approvals / Certificates

### General approvals



Approval	Standard	Certificate Name
EAC Brjansker Zertifizierungs- stelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
EAC Brjansker Zertifizierungs- stelle	TP TC 004/2011	EAC RU C-DE.AM02. B.00088_19
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-AIM750

### Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-
UK-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-

### Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	22-2208829-PDA
DNV DNV GL SE	-	TAA00000Y7
LR Lloyds Register	-	LR22276776TA
PRS Polski Rejestr Statków	-	TE/2215/880590/18
RINA RINA Germany GmbH	-	ELE343521XG001

### Approvals for hazardous areas



Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV 17 ATEX 193969X (II 3 G Ex ec IIC T4 Gc)
CCC CNEX	CNCA-C23-01	2020312310000214 (Ex ec IIC T4 Gc)
EAC Brjansker Zertifizierungs- stelle	TP TC 012/2011	EAC RU C-DE.AM02. B.00163/19 (2Ex e IIC T4 Gc X)
IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX TUN 16.0046X (Ex ec IIC T4 Gc)
UKEx WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX005X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	-	E198726

## Downloads

### Environmental Product Compliance

#### Compliance Search

Environmental Product  
Compliance  
750-495/040-002



## Documentation

Manual				System Description			
Product Manual 3-Phase Power Measurement Module /XTR	V 1.3.0 06.04.2023	pdf 19361.25 KB	<a href="#">↓</a>	Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 770.48 KB	<a href="#">↓</a>
				750 XTR Series I/O-System – General Product Information		pdf 726.09 KB	<a href="#">↓</a>
Bid Text				Instruction Leaflet			
750-495/040-002	19.02.2019	xml 8.99 KB	<a href="#">↓</a>	CCC Ex (Additional information)	26.04.2023	pdf 144.58 KB	<a href="#">↓</a>
750-495/040-002	23.10.2015	doc 36.00 KB	<a href="#">↓</a>				

## CAD/CAE-Data

CAD data		CAE data	
2D/3D Models 750-495/040-002		EPLAN Data Portal 750-495/040-002	<a href="#">↓</a>
		WSCAD Universe 750-495/040-002	<a href="#">↓</a>
		ZUKEN Portal 750-495/040-002	<a href="#">↓</a>

## Runtime Software

Firmware			
0750-0495, 3-Phasen-Leistungsmessung	V 03 07.06.2022	zip 170.05 KB	<a href="#">↓</a>

## Libraries

Library			
Function block description PowerMeasurement_495_02.lib	2.1.0 23.01.2017	zip 1579.43 KB	<a href="#">↓</a>

## 1 Compatible Products

### 1.1 Optional Accessories

#### 1.1.1 Current transformer

##### 1.1.1.1 Current transformer terminal block



**Item No.: 2007-8874**

Compact terminal block; for current and voltage transformers; 6,00 mm<sup>2</sup>; multicoloured



**Item No.: 2007-8877**

Compact terminal block; for current transformer circuit; 6,00 mm<sup>2</sup>; multicoloured

##### 1.1.1.2 Rogowski coil



**Item No.: 855-9450/2000-1251**

Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length 4.5 m; Feedthrough for measurement conductor 125 mm



**Item No.: 855-9450/2000-1751**

Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length 4.5 m; Feedthrough for measurement conductor 175 mm



**Item No.: 855-9450/2000-701**

Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length 4.5 m; Feedthrough for measurement conductor 70 mm



**Item No.: 855-9150/2000-1251**

Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length: 1.5 m; Feedthrough for measurement conductor 125 mm



**Item No.: 855-9150/2000-1751**

Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length: 1.5 m; Feedthrough for measurement conductor 175 mm



**Item No.: 855-9150/2000-701**

Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length: 1.5 m; Feedthrough for measurement conductor 70 mm

#### 1.1.2 DIN-rail

##### 1.1.2.1 Mounting accessories



**Item No.: 210-196**

Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



**Item No.: 210-198**

Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored



**Item No.: 210-508**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored



**Item No.: 210-197**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



**Item No.: 210-506**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored



**Item No.: 210-114**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



**Item No.: 210-118**

Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



**Item No.: 210-115**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored



**Item No.: 210-112**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored



**Item No.: 210-504**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored



**Item No.: 210-113**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



**Item No.: 210-505**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored

### 1.1.3 Marking

#### 1.1.3.1 Group marker carrier



**Item No.: 750-107**  
Group marker carrier

#### 1.1.3.2 Marker

**Item No.: 2009-145/000-006**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue

**Item No.: 2009-145/000-007**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray

**Item No.: 2009-145/000-023**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green

**Item No.: 2009-145/000-012**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange

**Item No.: 2009-145/000-005**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red

**Item No.: 2009-145/000-024**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet

**Item No.: 2009-145**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

**Item No.: 2009-145/000-002**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow



**Item No.: 248-501/000-006**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue

**Item No.: 248-501/000-007**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray

**Item No.: 248-501/000-023**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

**Item No.: 248-501/000-017**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green



**Item No.: 248-501/000-012**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange

**Item No.: 248-501/000-005**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

**Item No.: 248-501/000-024**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet

**Item No.: 248-501**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white



**Item No.: 248-501/000-002**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow



#### 1.1.3.3 Marker carrier



**Item No.: 750-103**  
Group marker carrier

### 1.1.4 Power tap

#### 1.1.4.1 Power tap



**Item No.: 855-8003**  
Power tap; with fuse; 10 mm<sup>2</sup> (8 AWG) - 16 mm<sup>2</sup> (6 AWG); Phase



**Item No.: 855-8001**  
Power tap; with fuse; 2,5 mm<sup>2</sup> (12 AWG) - 6 mm<sup>2</sup> (10 AWG); Phase



**Item No.: 855-8004**  
Power tap; without fuse; 10 mm<sup>2</sup> (8 AWG) - 16 mm<sup>2</sup> (6 AWG); N-conductor



**Item No.: 855-8002**  
Power tap; without fuse; 2,5 mm<sup>2</sup> (12 AWG) - 6 mm<sup>2</sup> (10 AWG); N-conductor

## 1.1.5 Shield termination

### 1.1.5.1 Shield clamping saddles



**Item No.: 790-108**

Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm



**Item No.: 790-208**

Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm



**Item No.: 790-116**

Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm



**Item No.: 790-216**

Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm



**Item No.: 790-124**

Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm



**Item No.: 790-220**

Shield clamping saddle; 30 mm wide; 6 ... 20 mm



**Item No.: 790-140**

Shield clamping saddle; diameter of compatible conductor

## 1.1.6 System enclosure

### 1.1.6.1 System enclosure



**Item No.: 850-825**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20



**Item No.: 850-826**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip



**Item No.: 850-827**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip



**Item No.: 850-828**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip



**Item No.: 850-826/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip



**Item No.: 850-827/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip



**Item No.: 850-828/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip



**Item No.: 850-834**

IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20



**Item No.: 850-835**

IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip



**Item No.: 850-836**

IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip



**Item No.: 850-814/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate



**Item No.: 850-815/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate



**Item No.: 850-816/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate



**Item No.: 850-817/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate