

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002F2
Revision No:
9

This is to certify:

that the DC Power Supply

with type designation(s)
PRO TOP1, PRO TOP2, PRO TOP3, PRO TOPDC power supplies

issued to

Weidmüller Interface GmbH & Co. KG
Detmold, Germany

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	D
Humidity	B
Vibration	A, B*, C*
EMC	A, B*
Enclosure	A

***Application/Limitation to be observed**

Issued at **Hamburg** on **2024-10-07**

This Certificate is valid until **2029-10-06**.

DNV local unit: **Essen**

Approval Engineer: **Dariusz Lesniewski**



This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.



Form code: TA 251

Revision: 2023-09

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Product description

Variants of PRO TOP1 power supplies as listed below

Main features:

- Nominal input voltage: 100...240 V AC (50/60Hz)
120...340 V DC
- Input voltage range: 85...277 V AC Derating: 1 % / 1 V @ 85 ... 100 V AC) (45...65 Hz)
80...410 V DC*
48...410 V DC* (PRO TOP1 120W 24V 5A (Standard), F, EX only)
- *The DC supply voltage must not exceed 410 V DC
- Nominal output voltage: 12 V DC, 24 V DC or 48 V DC (depending on model), adjustable
- Nominal output current: 3 A, 5 A, 10 A, 20 A or 40 A (depending on model)
- Status relay: 30 V AC/DC, 1 A
- I/O connection: 0 V / 24 V
- Communication interface (optional): PRO COM CAN OPEN (EX) device
- Protection against internal short circuits due to integrated ORing-MOSFET technology
- Direct parallel connection for redundancy or power increase (up to 10 power supply units)
- All power supplies of type PRO TOP1 can operate parallel on output connection with any power supplies of the PRO TOP1, PRO TOP2, PRO TOP3, PRO TOPDC series
- DIP switches for selection of operating modes: S/P – single/parallel operation
C/S – continuous / shut-off operation
- Mounting: DIN mounting rail, wall adapter (accessories)
Fixed mounting by use of additional brackets (accessories)

Model	Compass Safe Distance acc. to IEC 60945 (equipped with PRO COM CAN OPEN)		Hardware/Software Version HVN/SVN	
	Standard compass	Steering Compass	HVN	SVN
PRO TOP1 72W 24V 3A (Standard), F, CO	0.7 m	0.5 m	02.x.00	02.00.x
PRO TOP1 120W 12V 10A (Standard), F, EX	0.75 m	0.5 m	02.x.00	02.00.x
PRO TOP1 120W 24V 5A (Standard), F, EX	0.7 m	0.45 m	02.x.00	02.00.x
PRO TOP1 240W 24V 10A (Standard), F, EX	0.7 m	0.45 m	02.x.00	02.00.x
PRO TOP1 480W 24V 20A (Standard), EX	0.7 m	0.45 m	02.x.00	02.00.x
PRO TOP1 480W 48V 10A (Standard), EX	0.9 m	0.45 m	02.x.00	02.00.x
PRO TOP1 960W 48V 20A (Standard)	0.8 m	0.55 m	02.x.00	02.00.x
PRO TOP1 960W 24V 40A (Standard)	0.9 m	0.6 m	02.x.00	02.00.x
PRO TOP1 960W 48V 20A CO	1.0 m	0.6 m	03.x.00	02.00.x
PRO TOP1 960W 24V 40A Ex	1.9 m	0.9 m	03.x.00	02.00.x

Standard = output terminal assignment 2(+) / 3(-)
 Flange = output terminal assignment 2(+) / 2(-), connector flange
 CO = coated
 EX = ex-protected

Variants of PRO TOP2 power supplies as listed below

Main features:

- Nominal input voltage: 100...240 V AC (L+N+PE), 50/60 Hz
450...500 V AC (L1+L2+PE), 50/60 Hz
320...500 V DC
- Input voltage range: 85...550 V AC (Derating: 2% / 1V @85 ... 100 V AC), 45...65 Hz
90...800 V DC (Derating: 1% / 1V @90 ... 120 V DC)
- Nominal output voltage: 24 V or 48 V DC (depending on model), adjustable
- Nominal output current: 5 A or 10 A (depending on model)
- Status relay: 30 V AC/DC, 1 A
- I/O connection: 0 V / 24 V
- Communication interface (optional): PRO COM CAN OPEN (EX) device, PRO COM IO-LINK
- Protection against internal short circuits due to integrated ORing-MOSFET technology
- Direct parallel connection for redundancy or power increase (up to 10 power supply units)
- DIP switches for selection of operating modes: S/P – single/parallel operation
C/S – continuous/shut-off operation
- Mounting: DIN mounting rail, wall adapter (accessories)

- Fixed mounting by use of additional brackets (accessories)
- Additional feature:
All power supplies of type PRO TOP2 can operate in parallel on output connection with any power supplies of the PRO TOP1, PRO TOP2, PRO TOP3 and PRO TOP DC series.

Model	Hardware/Software Version HVN/SVN	
	HVN	SVN
PRO TOP2 120W 24V 5A UW (Standard), EX	01.x.00 ¹	01.00.x
PRO TOP2 240W 24V 10A UW (Standard), EX	01.x.00 ¹	01.00.x
PRO TOP2 240W 48V 5A UW (Standard)	01.x.00 ¹	01.00.x

Ex = ex-protected

¹ ... x ≥ 03

Variants of PRO TOP3 power supplies as listed below

Main features:

- Nominal input voltage: 3x400...500 V AC (50/60Hz)
450...500 V DC
- Input voltage range: 3x320...575 V AC or 2x360...575 V AC (45...65Hz)
450...800 V DC*
- *A minimum DC supply voltage of 440 V DC is required
- Nominal output voltage: 24 V DC, 36 V DC or 48 V DC (depending on model), adjustable
- Nominal output current: 5 A, 10 A, 20 A, 26.6 A or 40 A (depending on model)
- Status relay: 30 V AC/DC, 1 A
- I/O connection: 0 V / 24 V
- Communication interface (optional): PRO COM CAN OPEN (EX) device
- Protection against internal short circuits due to integrated ORing-MOSFET technology
- Direct parallel connection for redundancy or power increase (up to 10 power supply units)
- DIP switches for selection of operating modes: S/P – single/parallel operation
C/S – continuous/shut-off operation
- Mounting: DIN mounting rail, wall adapter (accessories)
Fixed mounting by use of additional brackets (accessories)
- Additional feature:
All power supplies of type PRO TOP3 can operate in parallel on output connection with any power supplies of PRO TOP2, PRO TOP3 and PROTOP DC series.

Model	Hardware/Software Version HVN/SVN	
	HVN	SVN
PRO TOP3 120W 24V 5A (Standard), CO	01.x.00	02.00.x
PRO TOP3 240W 24V 10A (Standard), CO	01.x.00	02.00.x
PRO TOP3 480W 24V 20A (Standard), CO	01.x.00	02.00.x
PRO TOP3 480W 48V 10A (Standard), CO	01.x.00	02.00.x
PRO TOP3 960W 36V 26,6A CO	01.x.00	02.00.x
PRO TOP3 960W 24V 40A (Standard), CO	01.x.00	02.00.x
PRO TOP3 960W 48V 20A (Standard), CO	01.x.00	02.00.x

CO = coated

Variants of PRO TOPDC power supplies as listed below

Main features:

- Nominal input voltage: 24 V DC
- Input voltage range: 18...31.2 V DC
14...31.2 V DC (Linear derating from 18 V to 14 V: 10% / 1V)
- Nominal output voltage: 24 V DC or 48 V DC
- Nominal output current: 5 A, 10 A or 20 A (depending on model)
- Status relay: 30 V AC/DC, 1 A
- I/O connection: 0 V / 24 V DC
- Communication interface (optional): PRO COM CAN OPEN (EX) device

- Protection against internal short circuits due to integrated ORing-MOSFET technology
- Direct parallel connection for redundancy or power increase (up to 10 power supply units)
- DIP switches for selection of operating modes:
 - S/P – single/parallel operation
 - C/S – continuous / shut-off operation
- Mounting: DIN mounting rail (TS 35x15 for 10A Location Class 'C' for vibration)
Fixed mounting by use of additional brackets (accessories)
- Additional feature:
All power supplies of type PTO TOPDC can operate in parallel on output connection with any power supplies of PRO TOP2, PRO TOP3 and PROTOP DC series

Model	Compass Safe Distance acc. to IEC 60945 (equipped with PRO COM CAN OPEN (EX))		Hardware/Software Version HVN/SVN	
	Standard Compass	Steering Compass	HVN	SVN
PRO TOPDC 120W 24V/24V 5A (Standard)	1.00 m	0.60 m	01.x.00 01.05.00 ¹	01.00.x
PRO TOPDC 120W 24V/24V 5A EX	1.00 m	0.60 m	01.x.00 01.06.00 ¹	01.00.x
PRO TOPDC 240W 24V/24V 10A (Standard), EX	1.00 m	0.60 m	01.x.00 01.07.00 ¹	01.00.x
PRO TOPDC 240W 24V/24V 10A U+	1.00 m	0.60 m	01.x.00 01.00.00 ¹	01.00.x
PRO TOPDC 480W 24V/24V 20A (Standard), EX	1.00 m	0.70 m	01.x.00 01.04.00 ¹	01.00.x
PRO TOPDC 480W 24V/24V 20A U+	1.00 m	0.70 m	01.x.00 01.00.00 ¹	01.00.x
PRO TOPDC 480W 24V/48V 10A (Standard)	1.15 m	0.80 m	01.x.00 01.04.00 ¹	01.00.x

¹...Minimum HVN of power supply for use with accessory PRO COM CAN OPEN (EX)

Accessories for all PRO TOP series:

- PRO COM CAN OPEN (EX): CANopen field bus communication interface; HVN 01.00.x / SVN 01.00.x (marine approved for data monitoring only)
- PRO COM IO-LINK: IO-LINK field bus communication interface; HVN 02.00.x / SVN 02.05.x (marine approved for data monitoring only; PRO TOP2 only)
- PRO TOP BRACKETS
- WALL ADAPTER

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to DNV Rules and Ex-Certification / Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Application/Limitation

Location class 'B' for vibration:

PRO TOP1 – PRO TOP BRACKETS only
PRO TOP2 – PRO TOP BRACKETS only
PRO TOP3 – PRO TOP BRACKETS only
PRO TOPDC – PRO TOP BRACKETS only