

NDR Series

Slim DIN Rail Power Supply with Built-in PFC

Economical slim metal-housing single-output DIN rail power supply for industrial control, factory automation and electromechanical applications. Available in **75W / 120W / 240W / 480W**, with **12 / 24 / 48 VDC** output, universal **90–264 VAC** input, built-in active **PFC** on 240W/480W, up to **92.5%** efficiency, **32–85.5 mm** slim housing, TS35 DIN rail mounting, and **UL508** approval.

DOCUMENT

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AT A GLANCE

75-480 W OUTPUT POWER	90-264 VAC UNIVERSAL AC INPUT	up to 92.5 % EFFICIENCY	32-85.5 mm SLIM HOUSING WIDTH
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NDR Series Overview

Economical slim metal-housing single-output DIN rail power supply with built-in active PFC on 240W and 480W models.

The DAPPRA NDR Series is an economical slim metal-housing DIN rail power supply series designed for industrial control, factory automation and electromechanical applications. It covers four power ratings — 75W, 120W, 240W and 480W — with single-output configurations of 12V, 24V and 48V DC.

The series features a universal AC input range of 90–264 VAC, fanless natural convection cooling and complete protection functions including short circuit, overload, over voltage and over temperature protection. The NDR-240 and NDR-480 models include built-in active PFC. All models are designed for standard TS35/7.5 or TS35/15 DIN rail mounting.



FIGURE 1 · NDR SERIES OVERVIEW

CORE SPECIFICATIONS

Series	DAPPRA NDR Series
Product Type	Slim DIN Rail Power Supply with Built-in PFC
Output Power	75 / 120 / 240 / 480 W
Output Voltage	12 / 24 / 48 VDC (240W & 480W: 24 / 48 VDC only)
Input Voltage	90–264 VAC (single phase) · 127–370 VDC
Active PFC	Built-in on NDR-240 & NDR-480 (PF > 0.98 @ 115VAC)
Efficiency	up to 92.5% (NDR-480)
Cooling	Fanless natural convection
Protection	Short circuit / Overload / Over voltage / Over temperature
Housing	Slim metal housing — 32 mm to 85.5 mm
Mounting	TS35/7.5 or TS35/15 DIN rail
Certification	UL508 · TUV BS EN/EN62368-1 · EAC TP TC 004

NDR Series Key Features

Engineered for efficient, space-saving industrial power supply applications.

UNIVERSAL AC INPUT 90–264 VAC

Full-range single-phase AC input supports global mains voltages. Also supports 127–370 VDC input (DC input operation possible by connecting AC/L (+) and AC/N (-)).

BUILT-IN ACTIVE PFC (240W / 480W)

The NDR-240 and NDR-480 models feature built-in active PFC with PF >0.98 at 115VAC and PF >0.95 at 230VAC under full load, reducing harmonic current and improving power quality.

SLIM METAL HOUSING FROM 32 MM

NDR-75 is only 32 mm wide; NDR-120 is 40 mm; NDR-240 is 63 mm; NDR-480 is 85.5 mm — saving valuable space inside control cabinets.

HIGH EFFICIENCY UP TO 92.5%

NDR-75 and NDR-120 achieve up to 89%, NDR-240 up to 90%, and NDR-480 up to 92.5%, reducing energy consumption and heat generation.

COMPLETE PROTECTION FUNCTIONS

Short circuit protection, overload protection (constant current limiting, 105–130% rated power), over voltage protection and over temperature protection are built in.

TS35 DIN RAIL MOUNTING

Designed for standard TS35/7.5 or TS35/15 DIN rail mounting inside electrical panels, control cabinets and automation equipment. UL508 approved with 3 years warranty.

NDR Series Model Code & Selection

Select the appropriate NDR model according to the required output power, output voltage and current.

Model Code Structure

NDR - 120 - 24

FIELD	MEANING	AVAILABLE VALUES
NDR	Series prefix	NDR
120	Output Wattage — rated output power in Watts	75 / 120 / 240 / 480
24	Output Voltage — nominal DC output voltage	12 / 24 / 48 VDC (240W & 480W: 24 / 48 only)

Example: NDR-120-24 = NDR Series, 120W output power, 24V DC output.

MODEL LIST

MODEL	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT POWER	WIDTH
NDR-75-12	12 VDC	6.3 A	75 W	32 mm
NDR-75-24	24 VDC	3.2 A	75 W	32 mm
NDR-75-48	48 VDC	1.6 A	75 W	32 mm
NDR-120-12	12 VDC	10 A	120 W	40 mm
NDR-120-24	24 VDC	5 A	120 W	40 mm
NDR-120-48	48 VDC	2.5 A	120 W	40 mm
NDR-240-24	24 VDC	10 A	240 W	63 mm
NDR-240-48	48 VDC	5 A	240 W	63 mm
NDR-480-24	24 VDC	20 A	480 W	85.5 mm
NDR-480-48	48 VDC	10 A	480 W	85.5 mm

The NDR-75 and NDR-120 offer 12V, 24V and 48V outputs; the NDR-240 and NDR-480 offer 24V and 48V outputs. Output current and output wattage must not exceed the rated value on the specification.

NDR Series Dimensions

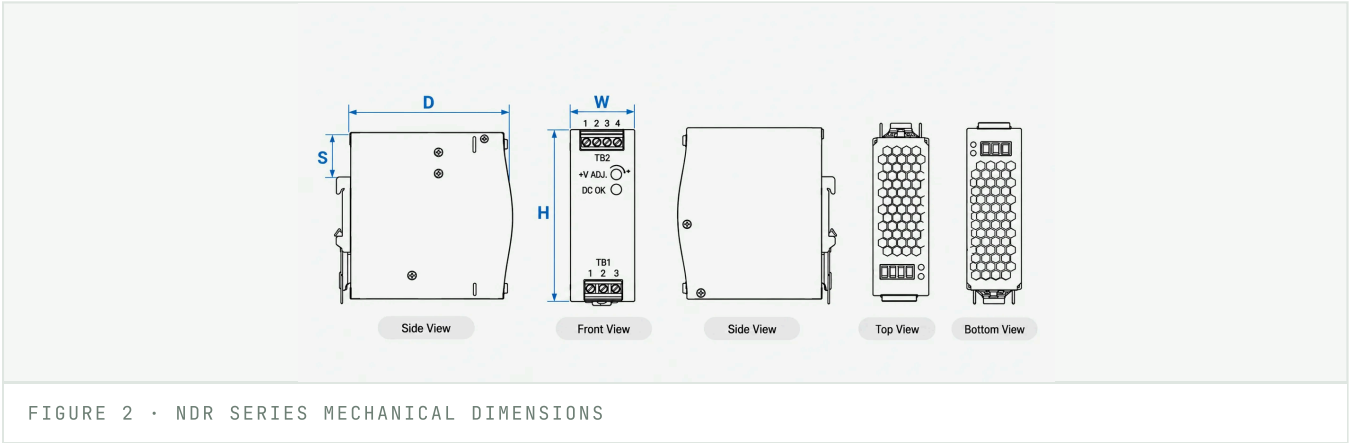
Slim metal housing with a compact footprint designed for space-constrained control cabinets.
All dimensions in mm, tolerance ± 1 mm.

NDR-75	
Width (W)	32 mm
Depth (D)	102 mm
Height (H)	125.2 mm
Rail Slot to Top (S)	35 mm
Front Panel	+V ADJ / DC OK

NDR-120	
Width (W)	40 mm
Depth (D)	113.5 mm
Height (H)	125.2 mm
Rail Slot to Top (S)	35 mm
Front Panel	+V ADJ / DC OK

NDR-240	
Width (W)	63 mm
Depth (D)	113.5 mm
Height (H)	125.2 mm
Rail Slot to Top (S)	35 mm
Front Panel	+V ADJ / DC OK

NDR-480	
Width (W)	85.5 mm
Depth (D)	128.5 mm
Height (H)	125.2 mm
Rail Slot to Top (S)	35 mm
Front Panel	+V ADJ / DC OK



Measurement unit: mm. Data is manually measured and may contain minor deviations — please refer to the actual product for final dimensions. Mounting: TS35/7.5 or TS35/15 DIN rail.

NDR Series Installation

The NDR Series supports DIN rail mounting with specific ventilation clearance and orientation requirements for reliable operation.

01 / 06

Vertical Orientation Only

The appropriate mounting orientation is vertical — input terminals at the bottom and output terminals at the top. Upside-down, horizontal or table-top mounting is not allowed.

02 / 06

Ventilation Clearance

Always allow good ventilation clearances around the unit: 5 mm left and right, 40 mm above and 20 mm below, to prevent overheating. Keep 10–15 cm clearance if adjacent to a heat source.

03 / 06

TS35 DIN Rail Mounting

Admissible DIN rail: TS35/7.5 or TS35/15. Fit over the top hat rail, slide downward until it hits the stop, press against the bottom for locking, then check the locking action.

04 / 06

FG Must Be Connected to PE

The FG (Frame Ground) terminal must be connected to PE (Protective Earth) for safety and to ensure proper EMC performance.

05 / 06

Operating Temperature Limits

Maximum operating temperature is 45°C for NDR-75-12; 50°C for NDR-75-24/48, NDR-120-12/24/48, NDR-240-24/48 and NDR-480-24/48.

06 / 06

Pollution Degree 2 Environment

Install the unit only in a pollution degree 2 environment — typically dry, well-ventilated locations such as control cabinets.

DIN-Rail Mounting

This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction Manual.

ADMISSIBLE DIN-RAIL: TS35/7.5 OR TS35/15
(For reference only. Not included with unit.)

Back View

FIGURE 3 • NDR SERIES INSTALLATION AND MOUNTING

NDR Series Wiring & Terminal

The NDR Series uses two terminal blocks: TB1 for input and TB2 for output. Use copper wire only and ensure all strands of each stranded wire enter the terminal connection.

TB1 – INPUT TERMINAL (ALL MODELS)

PIN NO.	ASSIGNMENT
1	FG (Frame Ground)
2	AC/N or DC–
3	AC/L or DC+

TB2 – OUTPUT (NDR-75 / 120 / 240)

PIN NO.	ASSIGNMENT
1, 2	DC OUTPUT –V
3, 4	DC OUTPUT +V

TB2 – OUTPUT (NDR-480 ONLY)

PIN NO.	ASSIGNMENT
1, 2	DC OUTPUT +V
3, 4	DC OUTPUT –V

Note: NDR-480 TB2 pin order is reversed.

FRONT PANEL CONTROLS

+V ADJ	DC output voltage adjustment
DC OK	DC output status LED

All NDR models include +V ADJ and DC OK.

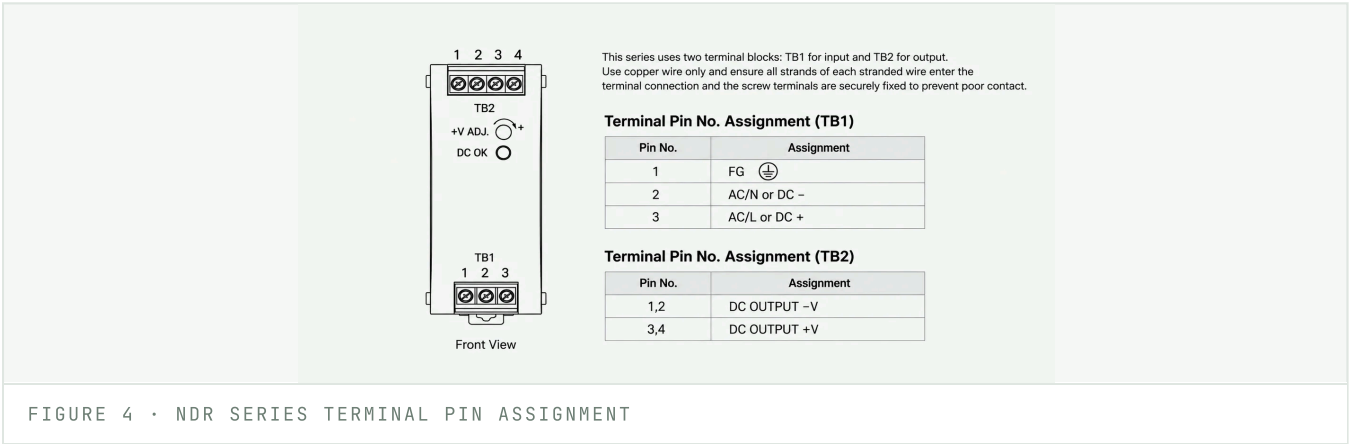


FIGURE 4 • NDR SERIES TERMINAL PIN ASSIGNMENT

Wiring Note: The FG pin must be connected to PE. Both –V pins and both +V pins should be connected to their respective output wires to prevent excessive current stress on a single contact.

NDR Series Wiring Specification

Recommended wire gauge, terminal torque settings, and fuse / circuit breaker selection for the NDR Series.

Recommended Wire

AWG	RATED CURRENT	CROSS-SECTION
18	7 A	0.8 mm ²
16	10 A	1.3 mm ²
14	15 A	2.1 mm ²
12	20 A	3.3 mm ²

Current each wire carries should be de-rated to 80% of the current suggested above when using 5 or more wires. Use wires that withstand at least 80°C, such as UL1007.

Terminal Torque Setting

MODEL	I / P	O / P
NDR-75	6.9 kgf-cm (6 Lb-in)	6.9 kgf-cm (6 Lb-in)
NDR-120	7.5 kgf-cm (6.5 Lb-in)	7.5 kgf-cm (6.5 Lb-in)
NDR-240	7.5 kgf-cm (6.5 Lb-in)	7.5 kgf-cm (6.5 Lb-in)
NDR-480	10.35 kgf-cm (9 Lb-in)	10.35 kgf-cm (9 Lb-in)

Recommended wire strapping length: 5 mm (0.197"). Recommended screwdriver: 3 mm, slotted type.

Fuse & Circuit Breaker (230 V)

MODEL	FUSE	C16	D16
NDR-75	T3.15A / L250V	6	13
NDR-120	T4A / L250V	5	10
NDR-240	T5A / L250V	4	10
NDR-480	T8A / L250V	3	5

Maximum number of NDR PSUs that can be connected to a circuit breaker at 230 V. Replace only with the same type and rating of fuse.

DC Output Voltage Adjustment: All NDR models include a front-panel DC output voltage adjustment potentiometer (+V ADJ) and a DC OK indicator LED. Output current and output wattage must not exceed the rated value on the specification.

NDR Series Safety & Cautions

Read and follow all safety instructions before installing, wiring, maintaining or modifying the NDR Series power supply.

01 • ELECTRICAL SHOCK HAZARD

Risk of electrical shock and energy hazard. All failure should be examined by a qualified technician. Do not remove the case of the power supply yourself.

02 • PRIMARY / SECONDARY ISOLATION

Connecting both the primary and the secondary sides together is not allowed — risk of electric arcs and electric shock (danger to life).

03 • BURN HAZARD

Do not touch the unit in operation and shortly after disconnection.

04 • FIRE & SHORT CIRCUIT

The openings should be protected from foreign objects or dripping liquids.

05 • PROTECTIVE EARTH

The FG (Frame Ground) must be connected to PE (Protective Earth).

06 • RATED OUTPUT

Output current and output wattage must not exceed the rated value on its specification.

07 • BEFORE SERVICING

Before commencing any installation, maintenance or modification work, disconnect the system from supply voltage. Make sure that inadvertent connection in circuit will be impossible.

08 • FUSE REPLACEMENT

For continued protection against risk of fire, replace only with the same type and rating of fuse.

09 • EMC DIRECTIVE

The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

Pollution Degree 2: Applies where there is only non-conductive pollution that might temporarily become conductive due to occasional condensation. Generally refers to dry, well-ventilated locations, such as control cabinets.

NDR Series Industrial Applications

The NDR Series is suitable for industrial control systems, factory automation equipment, electromechanical apparatus, electrical panels and semiconductor manufacturing equipment.

Industrial Control Systems	Factory Automation	Electromechanical Apparatus	Electrical Panels
Semiconductor Equipment	Machine Control	Process Control	Test & Measurement

TYPICAL USE CASES

CONTROL CABINETS

Slim 32–85.5 mm housing and DIN rail mounting make the NDR Series ideal for space-constrained control cabinets and electrical panels.

FACTORY AUTOMATION

Built-in active PFC on higher power models reduces harmonic current, making the NDR Series suitable for automation equipment with strict power quality requirements.

ELECTROMECHANICAL APPARATUS

Fanless cooling and wide operating temperature range support continuous operation in electromechanical and machine control applications.

TEST & MEASUREMENT

High efficiency up to 92.5% and stable DC output support precision test, measurement and process control equipment.

FAQ & Contact Information

Frequently asked questions and DAPPRA contact details.

What is the DAPPRA NDR Series?

The DAPPRA NDR Series is an economical slim metal-housing single-output DIN rail power supply series with built-in active PFC on 240W and 480W models. It covers 75W, 120W, 240W and 480W power ratings with 12V, 24V or 48V output.

What output voltages are available in the NDR Series?

The NDR-75 and NDR-120 offer 12V, 24V and 48V output options. The NDR-240 and NDR-480 offer 24V and 48V output options.

What is the efficiency of the NDR Series?

NDR-75 and NDR-120 achieve up to 89%, NDR-240 achieves up to 90%, and NDR-480 achieves up to 92.5% efficiency.

What is the terminal pin assignment of the NDR Series?

For NDR-75/120/240: TB1 Pin 1 = FG, Pin 2 = AC/N or DC-, Pin 3 = AC/L or DC+; TB2 Pin 1,2 = DC OUTPUT -V, Pin 3,4 = DC OUTPUT +V. For NDR-480: TB2 Pin 1,2 = DC OUTPUT +V, Pin 3,4 = DC OUTPUT -V.

What certifications does the NDR Series have?

The NDR Series is certified to UL508, TUV BS EN/EN62368-1, EAC TP TC 004, and complies with BS EN/EN61000-6-2 industrial immunity level.

What is the input voltage range of the NDR Series?

The NDR Series supports a universal AC input range of 90–264 VAC (single phase) or 127–370 VDC.

Which NDR models have built-in active PFC?

The NDR-240 and NDR-480 models have built-in active PFC function with PF >0.98 at 115VAC and PF >0.95 at 230VAC under full load.

What is the maximum operating temperature of the NDR Series?

The maximum operating temperature is 45°C for NDR-75-12 and 50°C for NDR-75-24/48, NDR-120-12/24/48, NDR-240-24/48 and NDR-480-24/48.

Does the NDR Series support DC output voltage adjustment?

Yes. All NDR models include a front-panel DC output voltage adjustment potentiometer (+V ADJ) and a DC OK indicator LED.

How do I choose the right NDR Series model?

Select the NDR model according to the required output power (75W, 120W, 240W or 480W), output voltage (12V, 24V or 48V) and available DIN rail mounting space in the control cabinet.

Contact DAPPRA

For product selection, technical support, samples or quotation, please contact us through the channels below.

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PRODUCT CATEGORY

dappra.com/product-category/industrial-control-components/industrial-power-supply/

Notice: Specifications, dimensions and model availability in this datasheet are subject to change without prior notice. Please refer to the latest DAPPRA official documentation or contact DAPPRA for the most current information. NDR Series Datasheet · Doc No. NDR-DS-001 · Rev. 1.0 · 2024-01.