



# **BP120 RTE**

## **Motor Controller**

### **Datasheet**

01.04  
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# BP120 RTE MOTOR CONTROLLER

## Product description

The BP120 RTE (Real-Time Ethernet) motor controller is designed to drive two NDW E-rollers. Real-Time Ethernet support has been added to control the E-rollers directly. Currently only PROFINET is supported. It has eight configurable digital I/Os of which the function, type and polarity can be individually configured. These can be connected to peripherals like sensors, buttons, relays or a PLC without Real-Time Ethernet. Configurable I/Os can alternatively be controlled via Real-Time Ethernet and used as a remote I/O.

BP120 RTE controllers can communicate with their neighbours and work together to create a system that is able to work independently. With the support of Real-Time Ethernet in combination with a PLC, dealing with complex situations and monitoring is made easy. A separate hard-wired E-stop functionality is also present, this allows the power to the E-rollers to be cut immediately while the motor controller remains powered.

Like its predecessor, the BP120 RTE also features integrated Zero Pressure Accumulation logic and a graphical interface which enables it to adjust settings and timings in a very easy way. The BP120 RTE has a built-in power supply that can be directly connected to mains, no external power supply is needed.

## Key features

- User-friendly graphical interface
- Controls up to two E-rollers simultaneously
- Stall protection for E-roller
- E-rollers will maintain speed when load increases
- Integrated 110-240VAC to 24VDC power supply
- Real-Time Ethernet support for direct control via a PLC
- Supported protocols: PROFINET
- Hard-wired E-stop functionality (can be disabled when not used)
- Internal logic enables Zero Pressure Accumulation
- Eight configurable digital I/Os
- Digital inputs are PNP and NPN compatible
- Daisy-chain the power connection up to ten controllers
- Protection against induced overvoltage of E-roller
- Speed, current draw, and error feedback on graphical UI or via Real-Time Ethernet



Technical Data			
<b>Input Voltage</b>	110 - 240 VAC (Integrated PSU to 24 VDC)		
<b>Input Frequency</b>	47 - 63 Hz		
<b>Supply Current (Max. Load)</b>	<table border="1"> <tr> <td>230 VAC 0.6 A (1 unit = 2 motors)<sup>(1)</sup> 6.3 A max allowed (10 units in series)<sup>(2)(3)</sup></td> <td>110 VAC 1.2 A (1 unit = 2 motors)<sup>(1)</sup> 6.3 A max allowed (5 units in series)<sup>(2)(3)</sup></td> </tr> </table>	230 VAC 0.6 A (1 unit = 2 motors) <sup>(1)</sup> 6.3 A max allowed (10 units in series) <sup>(2)(3)</sup>	110 VAC 1.2 A (1 unit = 2 motors) <sup>(1)</sup> 6.3 A max allowed (5 units in series) <sup>(2)(3)</sup>
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<b>Output Voltage to E-roller</b>	24 VDC		
<b>Power consumption (Max. Load)</b>	120 W <sup>(4)</sup>		
<b>Number of E-roller connections</b>	2		
<b>Series connection - Power</b>	10 units max. (5 units at 110 VAC)		
<b>Series connection - E-stop</b>	Complete chain can be max. 150 m (min. 0,25 mm <sup>2</sup> wire)		
<b>Protection Rate</b>	IP54 by default. IP65 is available on request. When connectors are not mated, protection caps should be used to obtain an IP65 rating. Protection caps are not included.		
<b>Ambient temperature in operation</b>	0 °C to +40 °C, non-condensing		
<b>Compatible NDW E-rollers</b>	ER-Series: 30, 50, 100, 200, 400, 800 and 1200 RPM		
<b>Speed and direction control</b>	Via Graphical UI (Stand-alone), Configurable I/O or Real-Time Ethernet (PLC)		
<b>Supported RTE protocols</b>	PROFINET		
<b>Integrated Logic</b>	Zero Pressure Accumulation Grouping of packages Single or train release Adjustable timers and delays to optimize the ZPA process		
<b>Stall protection for E-roller</b>	Yes		
<b>Overvoltage protection for E-roller</b>	Yes		
<b>Configurable I/O</b>	8		
<b>I/O Connector - 24V Output Current</b>	Max. 100mA		
<b>I/O Connector - 24V Output</b>	This is an output, not to be connected to an external power supply. Do not daisy-chain the I/O connector to the neighbor NDW controller.		
<b>Input Compatibility</b>	PNP or NPN (configurable in settings)		
<b>Output Signal Current</b>	Max. 10 mA sink/source		
<b>Signaling</b>	Graphical UI Configurable I/O LEDs (Green) Ethernet LEDs Real-Time Ethernet LEDs		
<b>Dimensions</b>	355 x 69.30 x 37.50 mm		
<b>Max installation height</b>	1000 m		

1. A short current spike can occur at start-up of the E-Roller (<40 ms).

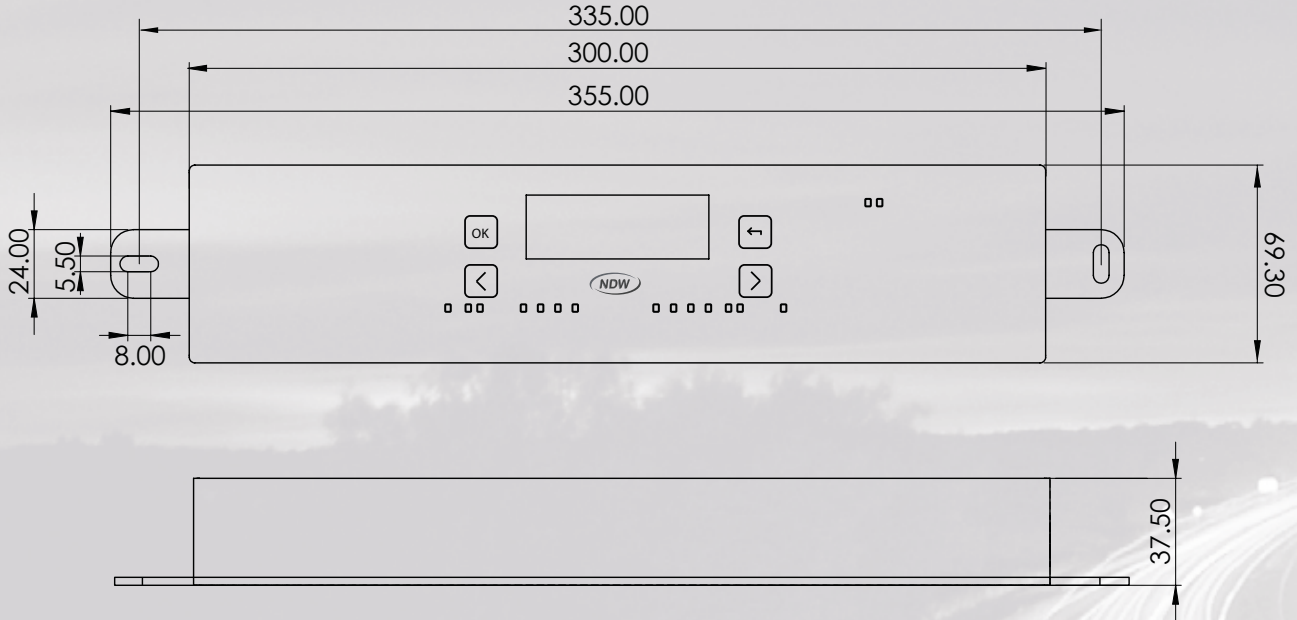
2. Each chain of controllers must be protected with an external breaker (Max. 10A, class C).

3. When chaining 3 or more controllers, implement an inrush current limiter between the breaker and the first controller in the chain.

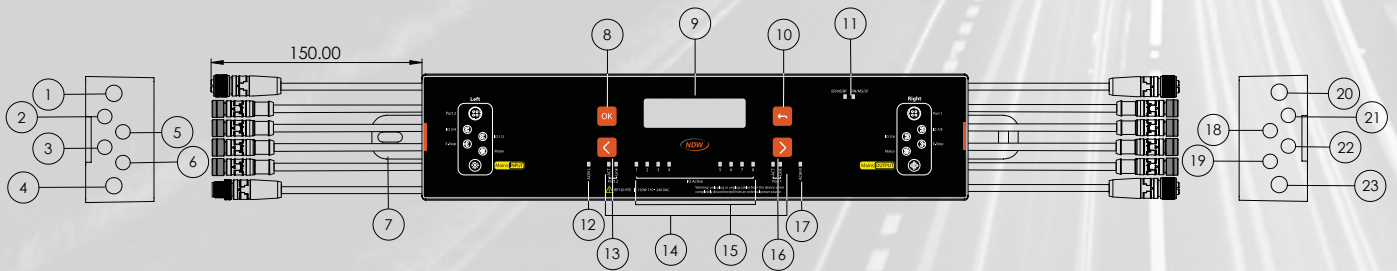
4. Actual power consumption depends on the application conditions, such as actual load, section length, slope etc.

# PRODUCT INFORMATION

## Dimensions



## Components



- |                                      |   |                                   |
|--------------------------------------|---|-----------------------------------|
| 1 Port 2 (M12 4P Female)             | 9 Graphical user interface                | 17 ACM Status LED right           |
| 2 I/O 3/4 (M8 4P Female)             | 10 Navigation button (back button)        | 18 I/O 5/6 (M8 4P Female)         |
| 3 E-stop (M8 3P Female)              | 11 RTE protocol status LEDs               | 19 Motor right (M8 6P Female)     |
| 4 Mains (input) (M12 4P Male)        | 12 ACM Status LED left                    | 20 Port 1 (M12 4P Female)         |
| 5 I/O 1/2 (M8 4P Female)             | 13 Navigation button (arrow left button)  | 21 I/O 7/8 (M8 4P Female)         |
| 6 Motor left (M8 6P Female)          | 14 Ethernet status LEDs (left and right)  | 22 E-stop (M8 3P Female)          |
| 7 PE (Only with toothed lock washer) | 15 I/O status LEDs                        | 23 Mains (output) (M12 4P Female) |
| 8 Navigation button (OK button)      | 16 Navigation button (arrow right button) |                                   |

### NOTE:

The power connectors are **S-coded** (4 and 23)

The ethernet connectors are **D-coded** (1 and 20)

The remaining connectors are **A-coded**

The backplate is anodized, PE connection only guaranteed when using the supplied toothed lock washers

# ACCESSORIES

## Cable accessories

### RTE power cables:

- **RTE power cable 1500 mm**  
M12 4-pin S-coded, IP65, male to female, length 1500 mm  
Article number: 901-10400
- **RTE power cable 3000 mm**  
M12 4-pin S-coded, IP65, male to female, length 3000 mm  
Article number: 901-10401
- **RTE power cable 5000 mm**  
M12 4-pin S-coded, IP65, female to open-end, length 5000 mm  
Article number: 901-10402

### Ethernet cables:

- **Ethernet cable 1500 mm**  
M12 4-pin D-coded, IP65, male to male, length 1500 mm  
Article number: 901-10410
- **Ethernet cable 3000 mm**  
M12 4-pin D-coded, IP65, male to male, length 3000 mm  
Article number: 901-10411
- **Ethernet cable 5000 mm**  
M12 4-pin D-coded to RJ45, male to male, length 5000 mm  
Article number: 901-10412

### I/O cables:

- **Y-splitter I/O M8-M12**  
M8 4-pin male to 2x M12 5-pin A-coded female, length 200 mm  
Article number: 901-10420
- **Emergency stop cable 1500 mm**  
M8 3-pin male to male, length 1500 mm  
Article number: 901-10430
- **Emergency stop cable 3000 mm**  
M8 3-pin male to male, length 1500 mm  
Article number: 901-10430
- **Sensor cable 1000 mm**  
M12 4-pin female to M8 4-pin male, IP65, length 1000 mm  
Article number: 901-10320

