

BINAR PRODUCTION SYSTEMS

Industrial IoT Gateway

LP304

USER MANUAL



BINAR
Improving your productivity

Industrial IoT Gateway LP304**User manual**

2021-09-01 eng 1.00

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1- System overview

The LP304 is a powerful industrial IoT Gateway that enables master systems to control equipment on the production shop floor.

Binar has a broad range of products that are used to build efficient support systems for Lean Manufacturing. The gateway acts as a bridge between a master system and the different hardware modules on the shop floor.

Master systems may connect to the LP304 gateway using:

- ETHERNET
- CAN

The gateway has a built in MQTT broker to support very efficient and lightweight message exchanges between devices. The system can communicate via modern protocols such as REST and MQTT to control all kinds of I/O devices including all Binar CAN products such as Pick to Light, BiDisp3 LED Displays, CAN Buttons and Binar Wireless System slaves.

As an option it may be connected as a slave in a Binar system with a LP305 Gateway.

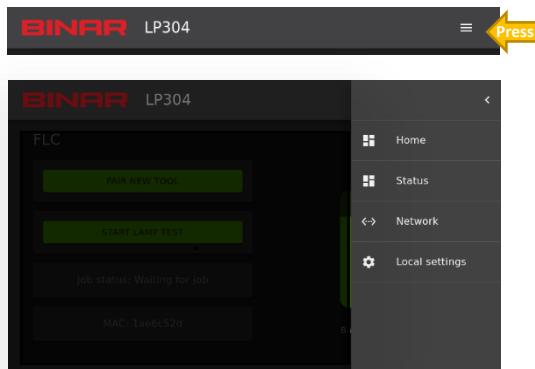
Binar Wireless System

The LP304 is equipped with the new Binar Wireless System that adds wireless capability to low energy I/O points like Andon buttons, smart tools and more.



2- User interface

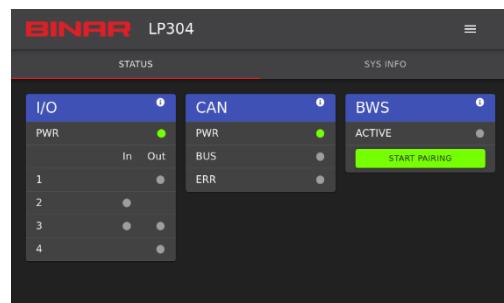
2.1 The main menu



The screenshot shows the main menu of the BINAR LP304. On the left, there is a sidebar with the following options: Home, Status, Network, and Local settings. On the right, the main content area displays the following information:

- FLC section: PAIR NEW TOOL, START LAMP TEST, job status: Waiting for job, MAC: 1ae6c52d
- System status: Home, Status, Network, Local settings
- Bottom right: Return to Home page, Show System status page, Configure Network Settings, Show Local Settings page

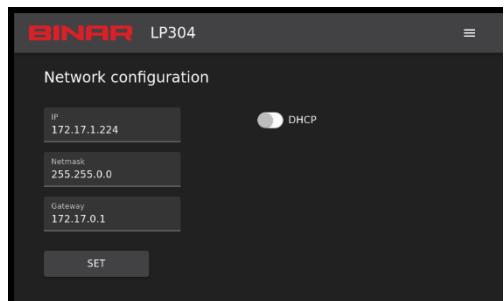
2.2 System



The screenshot shows the system status page of the BINAR LP304. It is divided into three main sections: I/O, CAN, and BWS.

- Section I/O:** Shows I/O signal status (In or Out). The table includes columns for I/O, PWR, In, and Out. Rows are numbered 1 to 4.
- Section CAN:** Shows status for the CAN bus (connectors X1 and X2). The table includes columns for CAN, PWR, BUS, and ERR.
- Section BWS:** Shows if BWS (Binar wireless System) is active or Not and what devices are contacted through it. It includes a START PAIRING button.

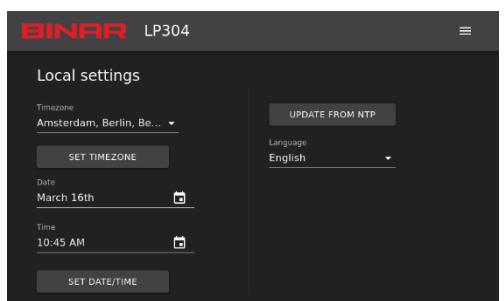
2.3 Network



The screenshot shows the network configuration page of the BINAR LP304. It includes fields for IP (172.17.1.224), Netmask (255.255.0.0), and Gateway (172.17.0.1). A DHCP toggle switch is also present.

Write Network setting
Write the network configuration info and press “SET” to save it, or active “DHCP” for dynamic IP address.

2.4 Local Settings



The screenshot shows the local settings page of the BINAR LP304. It includes fields for Timezone (Amsterdam, Berlin, Be...), Date (March 16th), and Time (10:45 AM). It also includes an UPDATE FROM NTP button and a Language selection (English).

Timezone
Chose the time zone and press “SET TIMEZONE”.

Date & Time
Set the date and time and press “SET DATE/TIME”.

Language
Chose the preferred language from the list available.

3- Connectors

3.1- Connectors overview

1. I/O CONNECTOR:

4 IN, 2 OUT. M12, 8 poles

2. Ethernet:

RJ45

3. CAN:

3A: IN or 24VDC max 4Amp, M12 5 pin male A code

3B: OUT, M12 5 pin female A code

4. USB:

4A: USB 2.0

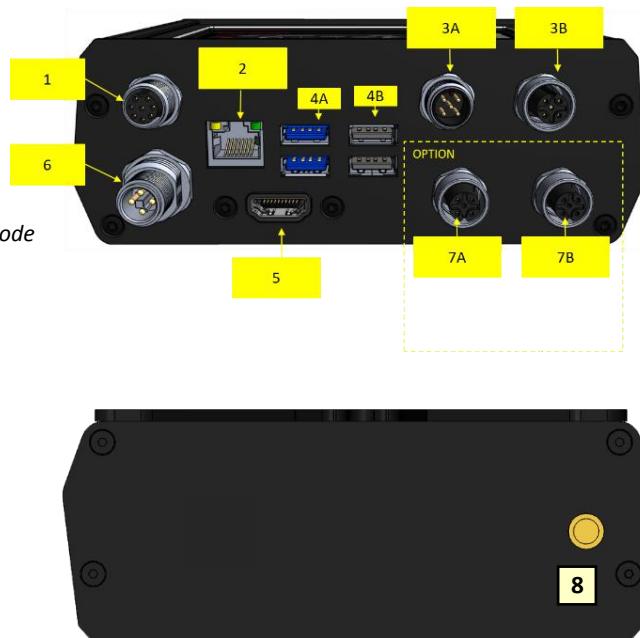
4B: USB 3.0

6. Power in:

24VDC, Max 4Amp. M12, 4 pin T code

8. Wireless Antenna:

Binar Wireless System (BWS) antenna



Future Options

5. HDMI:

7. LP304P PROFINET:

7A IN & 7B OUT, M12 4 pin female D code

CONNECTORS

RJ45

8/8 Modular-contact

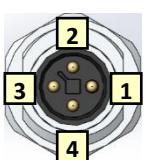
Pin	Signal
1	Transmit +
2	Transmit -
3	Receive +
6	Receive - (4,5,7,8 nc)
4	
5	
7	
8	



POWER IN

4 pin M12 male T code

Pin	Signal
1	+24 V
2	NC
3	0V
4	NC



CAN OUT

5 pin M12 female A code

Pin	Signal
1	Shield
2	+24V
3	0V
4	CAN high
5	CAN low



CAN IN

5 pin M12 male A code

Pin	Signal
1	Shield
2	+24V
3	0V
4	CAN high
5	CAN low



Future Option: PROFINET

4 pin M12 female D code

Pin	Signal
1	TX+
2	RX+
3	TX-
4	RX-



I/O CONNECTOR

8 pin M12 female A code

Pin	Signal
1	+24V
2	In1/Out1
3	0V
4	In2
5	+24V
6	In3/Out2
7	0V
8	In4



3.2- Parts and accessories

PART NO	DESCRIPTION	WHEN TO USE
51326	Power Supply LP-PW14 24VDC 4Amp	To supply CAN bus single with power.
35423	Binar Wireless antenna	When wireless connection to BWS (Binar Wireless System) is required.
50151	Binar Wireless Antenna incl Ext cord and bracket	When LP304 needs better wireless signal.

4- Mechanical dimensions and mounting

LP304 comes with mounting brackets attached and mounting is done by means of four screws, size M5 to M6 (see dimensions below).

Mounting is preferably done in line of sight of the connected tool, with the display at least at operator's eye level, preferably a bit higher. DO NOT place LP304 in a metal enclosure as that would block the wireless communication.



5- Technical Data

TECHNICAL DATA	DATA
Power supply	20-30 VDC
Data transfer	CAN, 1 IN & 1 OUT Ethernet, 1 port Binar Wireless System
Protocols device interface	REST, MQTT
CE	RED & RoHS
Temperature range	0 - 50 °C
Humidity	0 - 95 % non-condensing
Enclosure	IP41
Mounting	Mounted with screws
Weight	650 g
Dimensions	w 150 x h 142 x d 55 mm

BINAR WIRELESS SYSTEM

Frequency	2.4 GHz
Output	+5 dBm
Type	IEEE 802.15.4
Communication	IPv6, 6lowPAN
Encryption	AES-128
Wireless range open air	50 meters

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.