



FalconDCC Turntable Controller

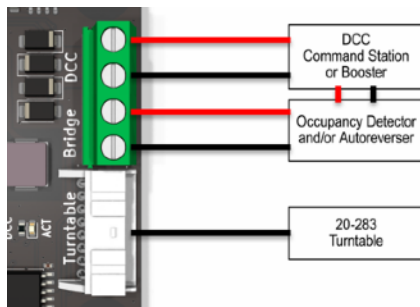
Product Safety

- Read and follow all instructions before using the product.
- Intended for indoor, dry locations only; do not expose the controller to rain, moisture, or condensation, and never submerge it in liquid.
- Power only from a DCC booster output up to 18V DCC. Never connect the controller directly to a wall outlet.
- Turn off track power and wait for the turntable bridge to stop moving before plugging in, unplugging, or rewiring.
- The controller contains small parts and sharp terminals.
- This is not a toy. Keep away from children under 14 years of age.
- Provide adequate ventilation and install away from sources of heat, flammable materials, or strong electromagnetic interference.
- Do not modify the antennas or electronics.
- Inspect wiring regularly. Stop using the product if you notice damaged insulation, overheating, or unusual odors.
- Always secure layout wiring to prevent trip hazards and accidental tugging on the controller.

Connection Overview

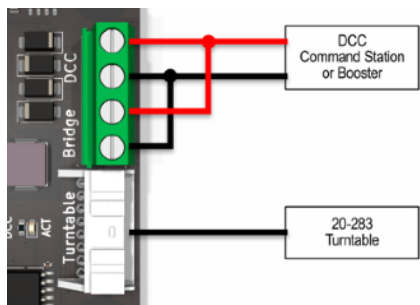
Standard Wiring

For use with an autoreverser and/or occupancy detector according to the diagram. Polarity does not matter.



Alternative Wiring

If your layout does not require an autoreverser or occupancy detection, you may wish to wire the device as shown below. Polarity management requires careful consideration.



DCC input (green)

Primary power and command input. Connect to a command station or booster output that does not use occupancy detection. Accepts 12–18V DCC, or AC/DC if used in WiFi-mode.

Bridge input (green)

Direct feed for powering locomotives on the turntable bridge rails. Power is passed straight through to the white turntable connector and supports external occupancy detectors and/or an in-line autoreverser. Isolating unijoiners are highly recommended for all turntable tracks. This input

may be left disconnected if you don't want power on the bridge, in this case do not use insulating unijoiners.

Turntable (white)

Keyed plug for the turntable cable. Provides motor drive, locking solenoid control, and index sensor feedback.

Installation & Wiring

1. Turn off and disconnect layout power.
2. Mount the controller on a stable, dry surface with sufficient airflow. Avoid metal enclosures.
3. Connect the DCC & Bridge terminals as indicated.
4. Plug the turntable cable into the turntable connector and into the matching socket on the Kato 20-283 turntable. Verify the keyed plug is fully seated.
5. Secure all cables so they cannot be accidentally pulled.
6. Double-check all wiring before restoring power. Incorrect wiring may damage the controller, turntable and/or the rest of your system.
7. Reapply power to the layout and observe the turntable for any unexpected movement. If anything appears abnormal, cut power immediately and review the wiring.
8. Rotate the turntable to the track you want as track number 1 by pressing the buttons.
9. Long press the "**RIGHT**" button to store this position.

Manual Operation

Any command issued while another move is in progress is queued. The controller completes them in order.

Left button

- **Short press** Step one position to the left (CCW).
- **Long press (≥ 0.8 s)** Rotate 180° left.

Right button

- **Short press** Step one position to the right (CW).
- **Long press (≥ 0.8 s)** Store the current position as Track 1. Do not use when bridge is moving.
- **Hold during power-up (≥ 3.0 s)** Perform a factory reset. All configuration is erased, and the device reboots into access point mode.

DCC Operation

The accessory base address is 200 and is configurable via the web interface.

To move the bridge to a numbered track (1–36), use the addresses shown in the table below. Each address maps to two sequential tracks.

Track #	Address	Command
1	200	Thrown/Red/Off/R=0
2	200	Closed/Green/On/R=1
3	201	Thrown/Red/Off/R=0
4	201	Closed/Green/On/R=1
5	202	Thrown/Red/Off/R=0
And so on until...		
36	217	Closed/Green/On/R=1

Please follow the manual for your DCC system to add the turntable. For systems which do not natively support

turntables, the turntable can be controlled directly using accessory addresses.

The controller automatically chooses the shortest rotation path and queues any additional requests. If the bridge is already at the requested track, the command is ignored without disrupting the queue.

Automatic Computer Operation

The Turntable Controller supports automatic operation via software like **iTrain**. Select the "**Heljan**" protocol and set the base address to the same as configured in the web interface (Default 200).

Changing the Base Address

1. Open the web interface and navigate to Settings.
2. Enter a new base address between 1 and 2008, making sure it does not overlap other accessories on your layout.
3. Click "**Save**". The new value takes effect immediately.

Wi-Fi & Web Interface

Access Modes

- On boot, the controller attempts to join the last saved Wi-Fi network for approximately 10 seconds.
- If no credentials are stored or the connection fails, it broadcasts an access point (AP):

SSID	FalconDCC Turntable
Password	FalconDCC
IP address	192.168.4.1

First-Time Connection

1. Power the controller.
2. Join the FalconDCC Turntable Wi-Fi network from your phone, tablet, or computer using the password above.
3. Open a browser to `http://192.168.4.1` (or `http://turntable.local` if mDNS is supported).
4. Enter Wi-Fi details if you want the controller to join your home network.

Advanced Control & Integration

HTTP API Submit POST requests to `/api/command` with form data `command=<action>`. Supported actions:

- `step_left`
- `step_right`
- `rotate_180`
- `set_origin`
- `goto` (requires `target=<1-36>`)

Example `curl -X POST http://turntable.local/api/command -d "command=goto&target=12"`

Settings API endpoints allow automation of Wi-Fi and DCC address updates (contact FalconDCC for details).

WebSocket logging Connect to `ws://turntable.local:81/` to receive JSON status and log messages.

Troubleshooting

No power or LEDs Confirm the booster is ON, all wires are secure, and the supply does not exceed 18 V.

Turntable stops between tracks Recheck that the bridge is unobstructed, then set the origin (Right button long press) and retry. Persistent issues may indicate dirt or obstructions on the index sensor.

Wi-Fi AP not visible Ensure the controller is in access point mode (factory reset if necessary) or move closer.

DCC commands ignored Verify the accessory base address and that your command station is sending the correct commands.

Bridge shorts when rotating Confirm the Bridge feed is wired through an autoreverser if your layout requires polarity management. Inspect for stray metal on the pit rail.

Technical Specifications

Supported turntable: Kato 20-283.

Track positions: 36 indexed stops.

Command queue: Up to 16 pending moves.

Power input: 12–18V DCC via booster output, or 12–18V AC/DC in wifi-mode.

Bridge feed: Direct pass-through from Bridge input to turntable connector; compatible with external occupancy detection and autoreversers.

Control interfaces: Two front buttons, DCC accessory commands, Wi-Fi web dashboard, HTTP API, WebSocket log feed.

Wireless: 2.4 GHz 802.11b/g/n.

Regulatory & Disposal Information

- Contains FCC ID: 2AHMR-ESP12F. 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.
- Changes or modifications not expressly approved by FalconDCC could void the user's authority to operate the equipment.
- Designed for use in residential environments. Consult FalconDCC for regional conformity documentation and follow local regulations before deployment outside your home layout.
- Dispose of the controller and accessories in accordance with local electronic waste regulations (WEEE). Do not discard with household trash.
- Any trademarks are the property of their respective owners.



Warranty & Support

The product is backed by limited 1 year warranty against defects in materials and workmanship. Retain proof of purchase. For assistance or firmware updates, please contact FalconDCC support or your place of purchase. When requesting service, provide the product name, firmware version, and a detailed description of the issue.

Thank You

Thank you for choosing the FalconDCC Turntable Controller. Enjoy effortless, precise turntable operation via DCC and Wi-Fi. Happy railroading!