

DATASHEET

ENDPOINT CONTROLLER

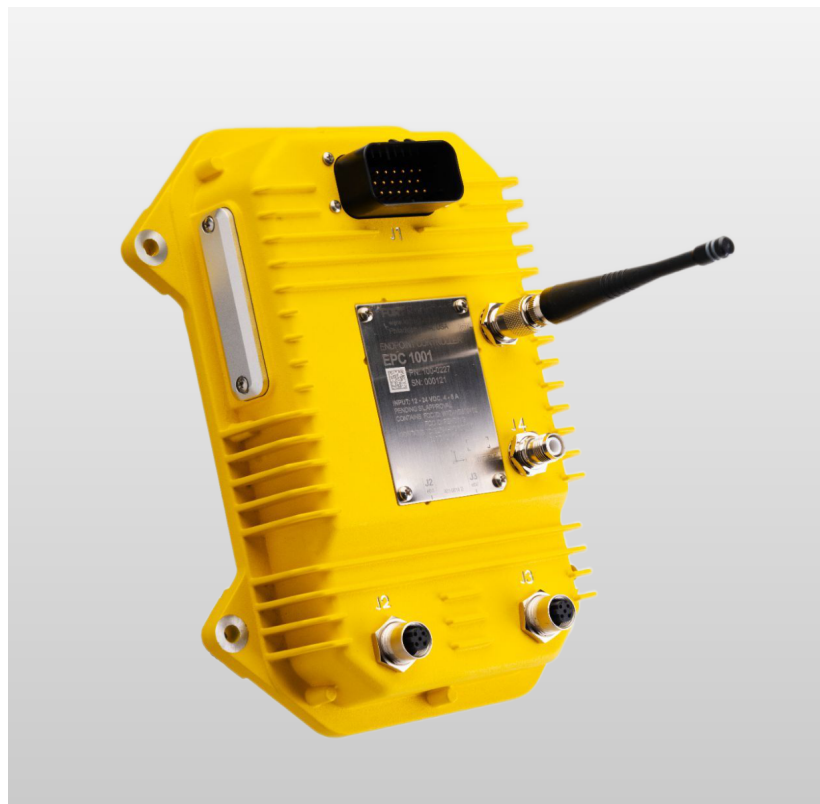
FORT PRO SERIES

PRODUCT

ENDPOINT CONTROLLER

SOURCE DOCUMENT

FORT_Endpoint_Controller_Datasheet_021726.pdf



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Endpoint Controller: Safe, Secure Machine Control



FORT's **Endpoint Controller (EPC)** is a rugged device for sending and receiving SIL 3-certified safety commands over a variety of wireless networks. Part of the FORT Pro Series, it functions as the receiver for the Safe Remote Control Pro, and can act as a sender to communicate with up to 30 machines at once.

Send SIL 3-Certified Safety Commands Over Wireless

The Endpoint Controller (EPC) can send and receive up to two different SIL 3 certified functional safety commands via ISM Radio, Wi-Fi or Ethernet networks. Commands can include e-stop, crawl, pause, etc.



Command Multiple Machines Simultaneously

For safety supervision onsite or from a remote location, use the Endpoint Controller to send global commands to up to 30 machines at once via Wi-Fi or Ethernet.



Limit Risks and Prevent Downtime

FORT's patented communication technology and built-in security protocols help mitigate safety and security threats, keeping people and data protected and machines running smoothly.



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Endpoint Controller Features & Functions

Certified Wireless Safety Command Sender & Receiver

The Endpoint Controller can send and receive up to two different SIL 3-certified safety commands (such as e-stop, crawl, pause, etc.) over ISM, Wi-Fi, or Ethernet– ideal for supervision or teleoperation from an offsite location.

As a **sender**: Send commands to up to 30 Endpoint Controller or Nano Safety Controller Pro receivers simultaneously.

As a **receiver**: Receive commands from Endpoint Controller or Safe Remote Control Pro devices.

Remote Control Receiver

The Endpoint Controller acts as the receiver for FORT's Safe Remote Control Pro via ISM radio or Bluetooth communication.

Integrate with Safety Inputs

Integrate with third-party input devices such as buttons, light curtains, sensors, fire alarms, etc. to trigger safety commands.

Flexible Integration

Easily integrate with machines and attachments using the CANopen or CAN J1939 protocols, ethernet, or 23-pin connector.

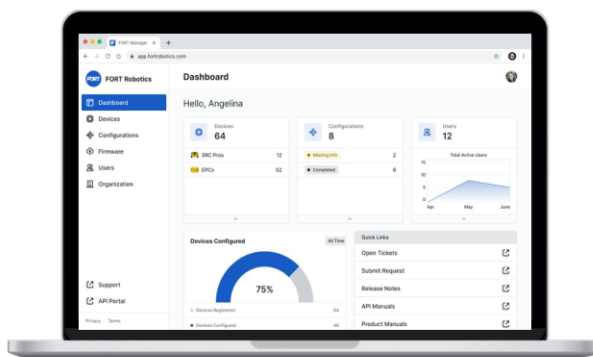
Industrial grade hardware

Durable IP65-rated unit performs in a wide variety of conditions.

Built-in security

Secure protocol prevents unauthorized access during boot, updates, and configuration.

Easy device configuration and supervision with FORT Manager



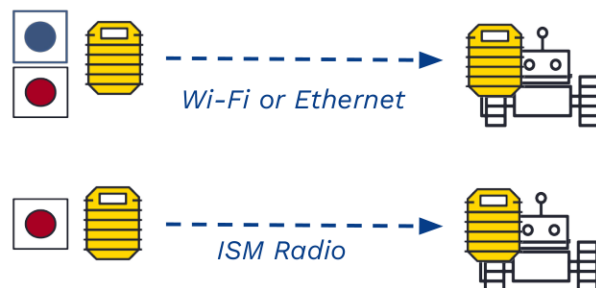
Available via convenient app or API integration, FORT Manager provides a convenient solution for:

- Onboarding and updating FORT devices
- Building safe, secure device configurations
- Managing organizations, users, and permissions

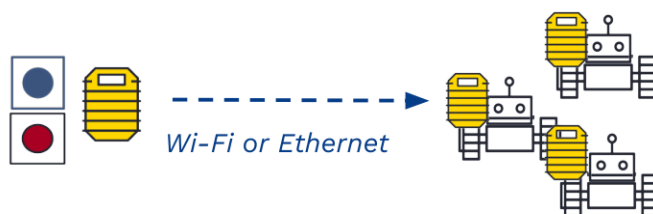
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Endpoint Controller Pairing & Communication

Send certified commands to a Endpoint Controller (EPC) receivers

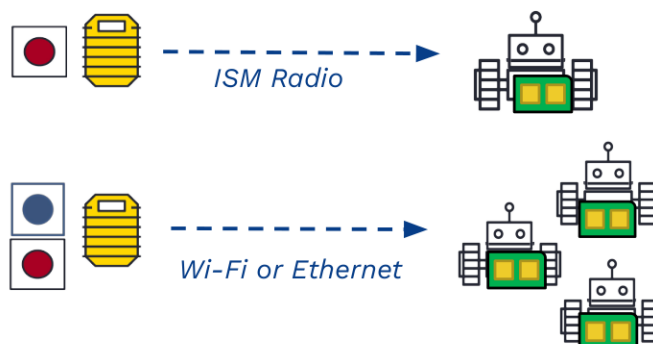


One to One Commands- 1 EPC: 1 EPC Send up to two wireless safety commands to a single machine via IP networks, or one safety command via ISM radio.



Global Commands- 1 EPC: 30 EPC Send up to two safety commands to up to 30 machines via IP networks.

Send certified commands to Nano Safety Controller Pro (NSC Pro) embedded receivers



One to One Commands- 1 EPC: 1 NSC Pro Send a command to a single machine via ISM radio.

Global Commands- 1 EPC: 30 NSC Pro Send up to two commands to up to 30 machines via IP networks.

Receive commands from the Safe Remote Control Pro (SRC Pro)



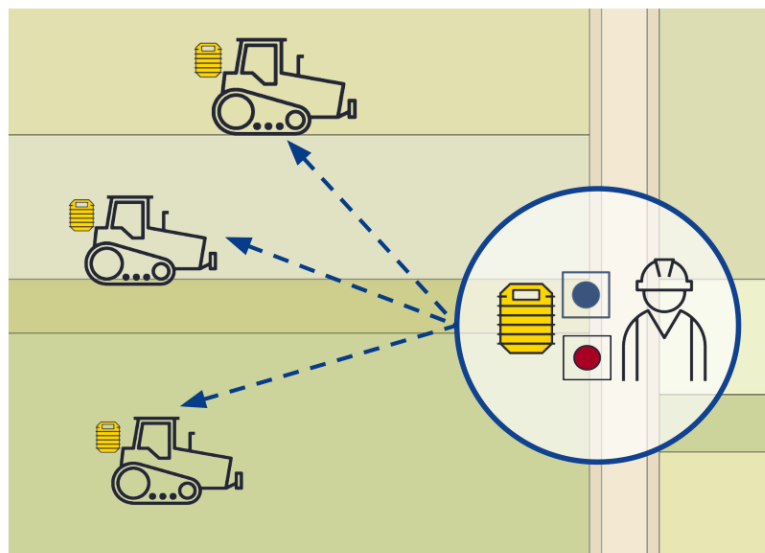
Remote Control with Machine Select-1 SRC Pro: 30 EPC Pair the Safe Remote Control Pro with up to 30 EPC receivers and control one machine at time.

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Endpoint Controller Common Use Cases

OFF ROAD (Agriculture, Construction, Mining)

Safely Control a Fleet: Onsite or from a Remote Location

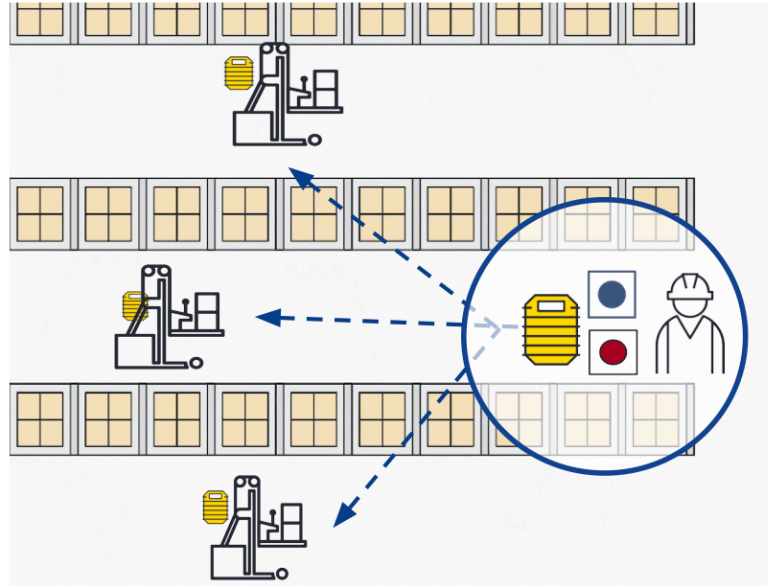


- Command machines from a central command station via Wi-Fi or Ethernet
- For example, send a crawl command when workers are in-field; send an E-stop command in emergency.
- Protect workers, machines, and assets.

INDOOR (Manufacturing, Warehouse)

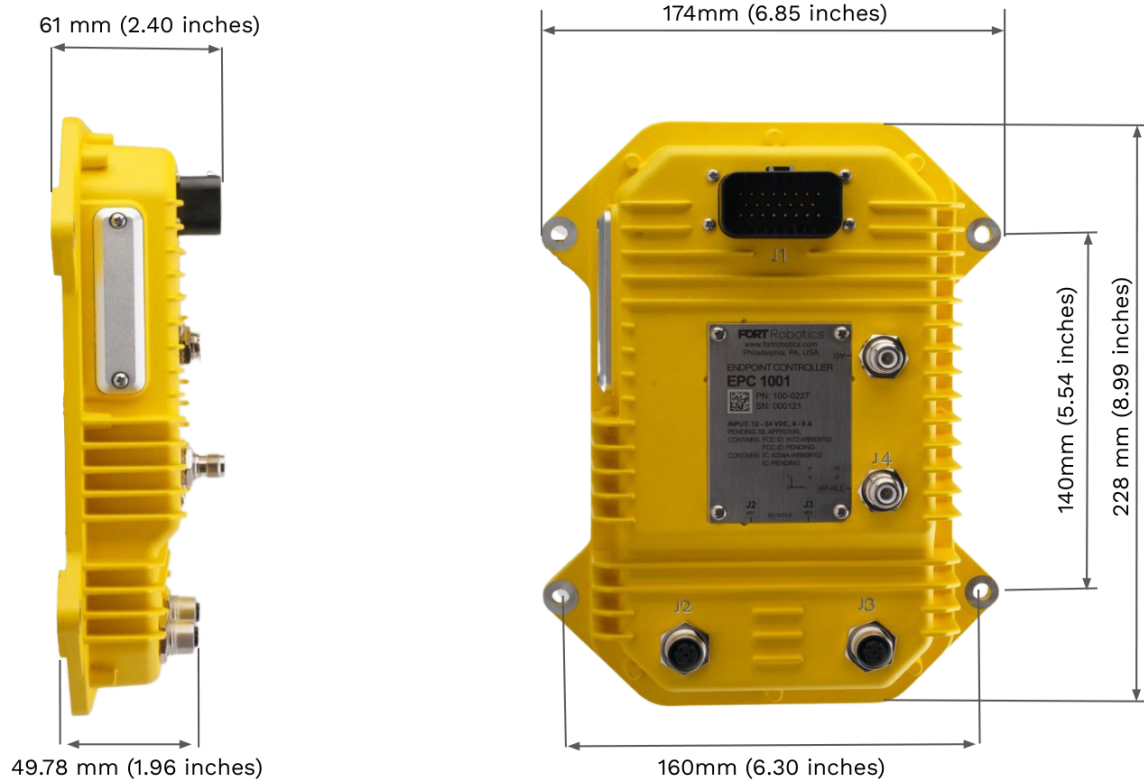
Emergency Response for Multiple Machines

- In an emergency, onsite personnel can stop all machines at once
 - Integrate fire alarms, light curtains, or other inputs to trigger automatic commands.
- For example, a fire response to move machines away from exits



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Dimensions and Features





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Technical Specifications

Endpoint Controller (EPC)

Device Form Factor	Mountable transmitter / receiver
Dimensions (no antenna)	228mm x 174mm x 61mm (8.99" x 6.85" x 2.4")
Base Unit Weight	878g (1.9 lbs)
Enclosure Rating	IP65
Operating Temperature	-40°C to 85°C
Operating Voltage	8V to 32V DC
Wired Interface	Power, CAN and Field Input/Output
CAN Supported Protocols	CAN J1939, CANopen
Connectors	(2) M12 Ethernet connectors; 23-pin main integration connector; mini USB-B (service port); RP-TNC antenna connectors (1 for BLE models, 2 for ISM models)
Inputs	(3) dual channels
Supply Input Voltage	12V or 24V nominal, 8 to 32V full range
Power Draw	2.18 - 2.78 W
Safety Input Voltage	Normal 8-32V, Safety State open circuit/Hi-Z
Safety Outputs	3 dual channels (1 dedicated to FORT Safe Remote Control Pro)
Safety Output Voltage	Matches Supply Input Voltage

Current Limit	750 mA max per output channel			
Safety Output Type	3 dual channel current sourcing			
Safety Command Response Time	100ms avg tested plus network latency			
Safety Timeout Period	Selectable: .25 sec; .50 sec; .75 sec; 1 sec; 3 sec; 5 sec			
Pairing	Pair 1 EPC with up to 30 EPC or NSC Pro receivers Pair 1 Safe Remote Control Pro with up to 30 EPC receivers			
Security	Cryptographic boot, secure element, verification			
Regulatory	FCC and IC compliant; CE mark; Giteki mark (1003 model only)			
Safety Certification	E-stop functionality certified to SIL 3 per IEC 61508 by Exida			
Wireless Communication	EPC 1000	EPC 1001	EPC 1002	EPC 1003
Bluetooth Low Energy (BLE)	Standard Bluetooth	Standard Bluetooth	Standard Bluetooth	Long Range Bluetooth
BLE Wireless Range (line of sight)	15m-30m	15m-30m	15m-30m	250m
ISM Radio	N/A	902-928 MHz (US & Canada)	869.4-869.65 MHz (EU)	N/A
ISM Wireless Range (line of sight) <i>May vary based on antenna placement and environment</i>	N/A	300-400m	100-200m	N/A
Output Radio Transmission Maximum Power	2.5mW	200mW	200mW	50mW

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Product & Accessory Part Numbers

Wireless Communication Product Code

Endpoint Controller (Wireless Sender & Receiver) 	Wi-Fi & Standard Bluetooth (BLE) only	EPC 1000	100-0232
	Wi-Fi, Standard BLE & ISM Radio 902-928 MHz	EPC 1001	100-0227
	Wi-Fi, Standard BLE & ISM Radio 868 MHz	EPC 1002	100-0277
	Long Range BLE	EPC 1003	100-0436

Starter Kits: Bundles including all recommended accessories

EPC 1000 Starter Kit:	800-0000
1m Ampseal to flying leads integration cable	100-0256
1m M12 to RJ45, black, ethernet cable	250-0384
(2) Ethernet caps	250-0447
RP-TNC antenna cap	275-0095
2.4/5 GHz dual band antenna, N female	275-0096
1m RP-TNC male to N male antenna cable	275-0098
EPC 1001 Starter Kit:	800-0001
1m Ampseal to flying leads integration cable	100-0256
1m M12 to RJ45, black, ethernet cable	250-0384
(2) Ethernet caps	250-0447
(2) RP-TNC antenna caps	275-0095
2.4/5 GHz dual band antenna, N female	275-0096
1m RP-TNC male to N male antenna cable	275-0098
1m RP-TNC male to RP-SMA female bulkhead antenna cable	275-0101
900 MHz antenna, RP-SMA male	275-0108

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Product & Accessory Part Numbers

STARTER KITS: BUNDLES INCLUDING ALL RECOMMENDED ACCESSORIES

EPC 1002 Starter Kit:	800-0002
1m Ampseal to flying leads integration cable	100-0256
1m M12 to RJ45, black, ethernet cable	250-0384
(2) Ethernet caps	250-0447
(2) RP-TNC antenna caps	275-0095
2.4/5 GHz dual band antenna, N female	275-0096
1m RP-TNC male to RP-SMA female bulkhead antenna cable	275-0101
800 MHz antenna, RP-SMA male	275-0111
EPC 1003 Starter Kit:	800-0018
1m Ampseal to flying leads integration cable	100-0256
1m M12 to RJ45, black, ethernet cable	250-0384
(2) Ethernet caps	250-0447

STARTER KITS: BUNDLES INCLUDING ALL RECOMMENDED ACCESSORIES

RP-TNC antenna cap	275-0095
2.4/5 GHz dual band antenna, N female	275-0096
1m RP-TNC male to N male antenna cable	275-0098

Individual Accessories**Antennas**

2.4 GHz 5 GHz dual band, N female 275-0096
 900 MHz, RP-SMA male 275-0108
 800 MHz, RP-SMA male 275-0111

Antenna Adapter

RP-TNC male to RP-SMA male adapter 275-0067

Antenna Cables

RP-TNC male to N male, 1m 275-0098
 RP-TNC male to N male, 50 ohm, 3m 275-0099
 RP-TNC male to N male, 5m 275-0100
 RP-TNC male to RP-SMA female bulkhead, 1m 275-0101
 RP-TNC male to RP-SMA female bulkhead, 50 ohm, 3m 275-0102
 RP-TNC male to RP-SMA female bulkhead, 5m 275-0103

Ethernet Cables

1m M12 to RJ45, black 250-0384
 2m M12 to RJ45, black 250-0307
 5m M12 to RJ45, black 250-0306

Integration Cable

1m Ampseal to flying leads 100-0256

Dust Caps

Ethernet cap 250-0447
 RP-TNC Antenna Cap 275-0095

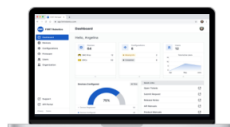
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FORT ROBOTICS CONTROL PLATFORM**Pro Series**

**Safe Remote
Control Pro**



**Endpoint
Controller**



FORT Manager



**Nano Safety
Controller Pro**



**Wireless
E-Stop Pro**

Foundation Series



Safe Remote Control



Vehicle Safety Controller



Wireless E-Stop



Wired Remote Control

Professional Services



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