



Easytrac

EME/EOE Electric Actuator

Battery Back Fail-Safe Instruction (for actuators with software release V1.46)



Ontracactuators.com

ACK25-01A

Appendix to Easytrac Operational Manual

Battery Back Fail-Safe Manual

In the world of actuators for valves, the feature that ensures an actuator completes a desired action in the event of a power failure is called a "fail-safe" or "fail-safe mechanism." This feature is designed to move the valve to a predetermined safe position (either fully open, fully closed, or a specific position) when there is a loss of power.

Ontrac Fail-Safe Feature

Ontrac Fail-Safe is available for Easytrac line, up to 3000Nm, which requires external housing. As a pre-requisite, the control B option is required for fail-safe.

Ontrac branded actuators are equipped with the following battery-based fail-safe features following standard fail-safe mechanisms, in conjunction with our branded actuator's functionality:

1. Actuator external power disconnection, then,
2. Switching to internal power supply, and,
3. Execution of pre-set fail-safe commands.

Fault Detection and Recognition

Ontrac actuators are equipped with an integrated 24V isolated rechargeable lithium-ion battery power supply and a custom-designed wide voltage -24V buck regulator, housed within the actuator's chamber. Under normal operating conditions, the external power supply ensures that the internal battery remains fully charged. In the event of an external power supply failure, the power switching control board promptly detects the disconnection and seamlessly switches to the internal power supply. This board then activates the fail-safe function, enabling the actuator to execute the pre-programmed fail-safe operation as specified by the customer. A signal is sent to initiate the fail-safe command, ensuring the actuator performs the necessary action to maintain system safety and reliability.

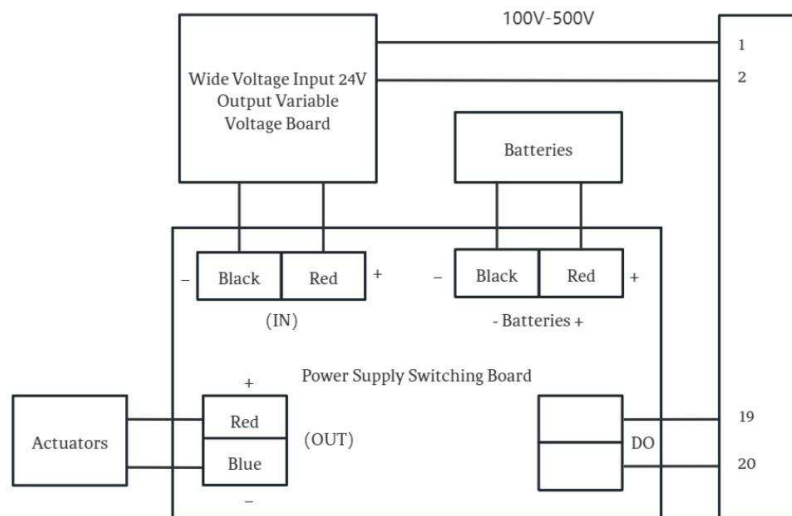


Figure1 Easytrac Fail-safe Hardware Connection Diagram

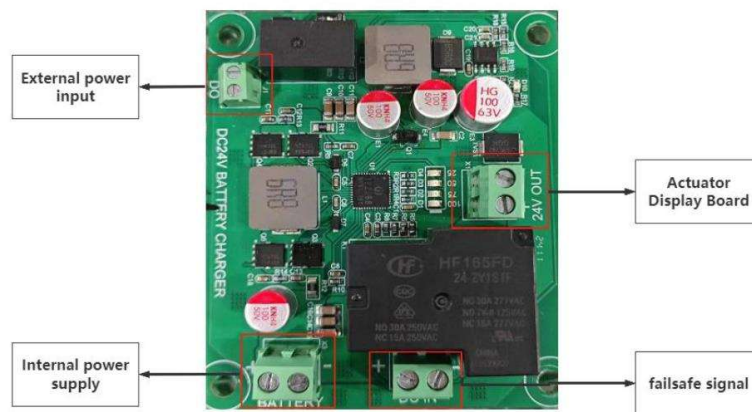


Figure2 Easytrac Power Switching Board

Fail-safe customer configurable options

Fail-safe options are listed below (same as ESD):

- **Now:** Actuator holds the current valve position.
- **Target:** Actuator operates to the set valve position 0-100% (To open, close or any set position).
- **No Response:** Actuator continues normal operation (run on battery, until main power back on or battery runs out).

Operating the Fail-Safe function

Ontrac actuators can be operated by both local and remote control of the Fail-safe function. In local control Fail-safe can be set through the physical key operation menu of the actuator panel. In remote control, Fail-safe is set using infrared hand-held device.

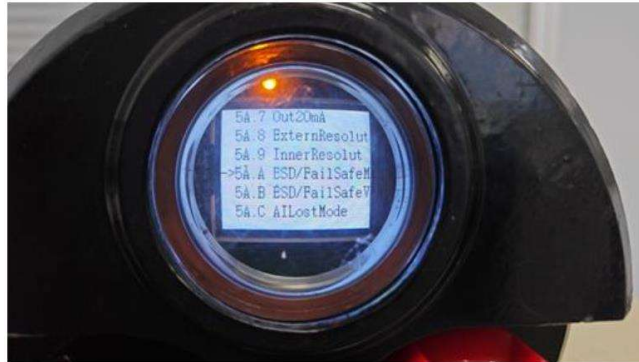


Figure 3 Fail-safe menu



Figure 4 Fail-safe Range



Figure 5 Fail-safe Mode

In remote control, the Fail-safe function can also be set through Bluetooth via Ontrac's remote control software Smartrac.

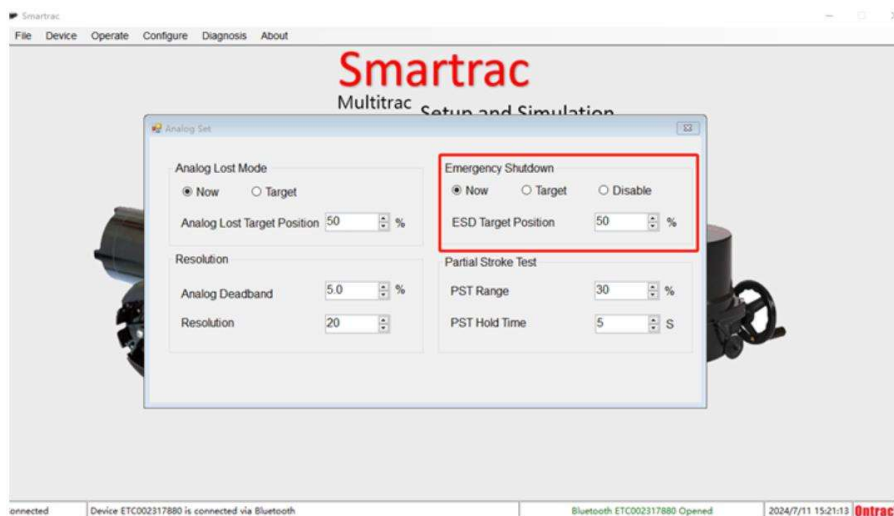


Figure 6 Smartrac Fail-safe Operation Page

NOTE:The Failsafe function and the ESD function share a common signal channel, so the settings are the same for both functions.

Built-in 24V DC Battery Power Supply:

- **Battery Charge Level:** Displayed on the battery chamber, 3 blue lights when fully charged; an alarm is triggered when main power is lost.
- **Battery Specification:** Commercially available 18650-type batteries, x6 (or multiples of 6 for higher torque actuator models). Factory uses Panasonic 18650 Lithium batteries.
- **Recommended Lifetime:** According to manufacturing's specifications, generally >300 times, of full charge and release cycles, lasting more than 3 years under normal use (infrequent power fail, battery normally remains in fully charged, all 3 blue lights on).
- **Battery Safety:** Batteries are installed inside the actuator chamber. For extra measure, customer can order it mounted in a separate explosion-proof version chamber, like a split head. Factory will release the proroduct fully discharged.

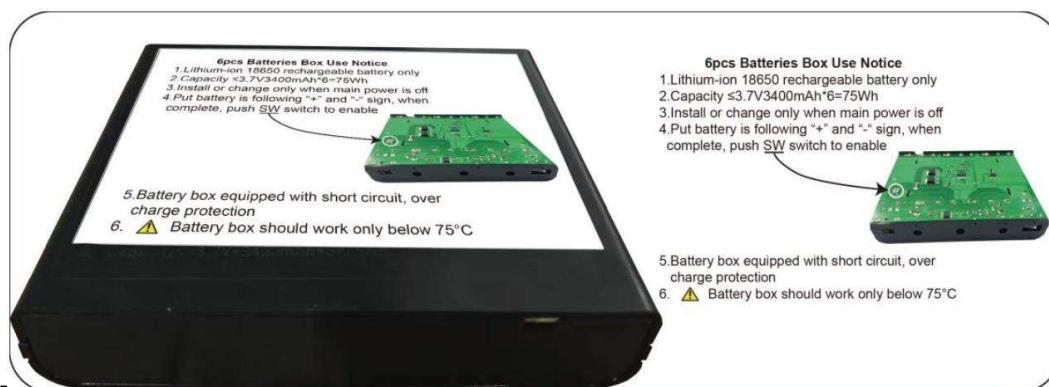


Figure7 Battery housing box

User Wiring Diagram:

1P/3P 100~500V AC(Modulating duty)

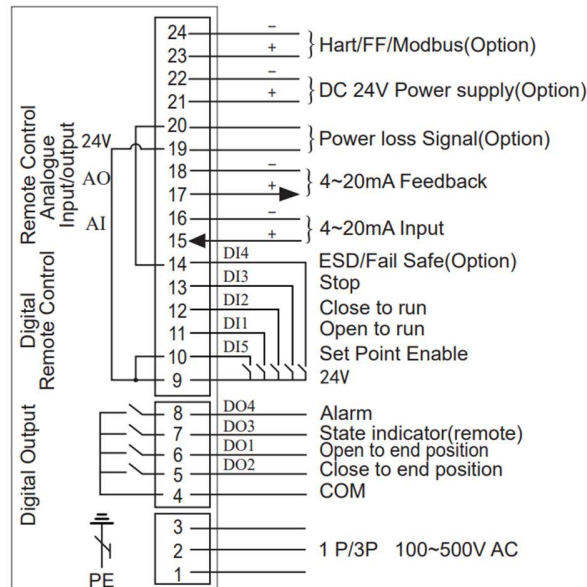


Figure8 Easytrac Fail safe+Hart Bus Terminals

Customer Operation and Maintenance:

The external power supply may be disconnected due to uncontrollable factors such as power failures or issues with the power supply line. When this occurs, the actuator automatically switches to its internal power supply to execute the preset fail-safe command. This ensures continuous operation while external power supply problems are resolved. Once the external power supply is restored, the actuator resumes normal operation.

For initial use or after a complete battery discharge, turn the power switch on, and expecting a charging time over three hours to see all 3 blue lights on, this will bring the battery to its designed working mode and function.

For proper shipping and handling with batteries inside, recommend to fully discharge the battery, with all 3 blue lights off, and battery box power switch off. Shipper or customer own the responsibilities to follow all international and local regulation, and battery manufacturing instructions for lithium-ion battery shipping and handling.

For storage, shall keep it partially charged, with 2 blue lights and turn the power switch off.

Customer to use own 18650 battery or replacement: if using your own battery, or after three years of normal use (with infrequent power failures), you can replace the 18650 lithium-ion battery. Making sure the battery meet the spec of factory recommend, which is

Panasonic 18650 battery. To do this, disassemble the battery chamber by switching the power switch off, unscrewing it and insert a new battery, following the instructions on the chamber box or consulting the factory for guidance.

Attached: Panasonic 18650 battery Data Sheet, MSDS-IBT-00030-24E.

Failsafe information on test report:

Fail Safe Functions ■		
Factory Setting	Defination Referance	Operational Menu ,5A.A&B
	Fail safe to close.0%	Target ☐
	Fail safe to open .100%	Target, <u> 50 </u> % ☐
	Fail safe to stay put	Now ☐
	Continous to run	No reponse ☐
Factory Test	Battery power kit-in, 5	Pass ☐

Cloudtrac for Asset Management:

The Ontrac Cloud allows you complete global access to our actuator database to provide specific, as-built technical details and parameters without the use of special tools or proprietary software. Every Ontrac actuator comes with a permanent QR code attached to the outside body of the actuator case. Simply scanning the QR (Quick Response) code on your actuator from your phone connects you to Cloudtrac. Our database provides access to the specific information about your actuator.

You will then be able to download instruction and data sheets as well as your actuators specific wiring diagram. This simple aid to set up, commissioning and fault finding will save users considerable time and ensure the right connections are made.

Basic Information

Product Type	EME100+B+284+F
Serial Number	7652110ETC250512816
Power Supply	120V 1PHASE
Manufacturing Date	2024-06-17
Duty Mode	Modulating
Speed	34Sec/90°
Max. Switch-off Torque	100Nm

Electrical control

Input Signal	4-20mA & Hart & 4 optically isolated contacts
Output Signal	4-20mA & Hart & 6 output switches
Bus Protocol Type	No
Failsafe	Battery box 1x6

Option

Enclosure Protection	IP67 & Fail safe
Explosion Protection	No
Split Type	No
Anti Condensation Heater	No