PRODUCT ENGINEERING / TECHNICAL GUIDE

SV-FFR

Firefighting robot



Product manual · Selection and application

Specifications / Structure and interfaces / Integration / Operation and care

Reorganized from available model documentation. The agreed specification defines the delivered configuration.

01 / PRODUCT & APPLICATION

Selection and application guide

SV-FFR combines a tracked chassis, remote video and an optional manipulator. Video and control ranges are specified separately, so deployment must satisfy both. Fire-response projects also need an agreed nozzle, extinguishing-agent supply and temperature envelope; the available document does not specify suppression flow or fire-resistance certification.

Design and application value

A tracked chassis and multiple cameras let the operator observe from a distance, while the manipulator supports handling within the configured limits. Obstacle and slope ratings aid terrain assessment but depend on load, traction and centre of gravity. Confirm video range and control range separately.

Choosing the right configuration

Specify passage width, steps, slope, object mass and pickup position to select reach and gripper. Chassis payload is not the arm’s tip-load capacity. For flammable gas, heat or immersion, confirm the required rating and certificates first; IP65 does not prove those capabilities.

02 / SPECIFICATIONS 01

Specifications and configuration

Figures follow the available model documentation. The agreed specification defines the delivered configuration.

Parameter	Specification
Unfolded / working dimensions	1005 × 770 × 770 mm (L × W × H)
Product mass	85 kg (including quick-release battery)
Maximum drive power	2 × 400 W
Manipulator degrees of freedom	3-6 (optional)
Lift at full arm extension	≥5 kg (fully extended, optional)
Battery specification	24 V, 20 Ah
Wireless video range	≥300 m
Remote-control range	≥1000 m
Travel speed	0-2.2 m/s
Obstacle height	200 mm
Stair-climbing angle	38°
Slope angle	40°
Minimum ground clearance	127 mm
Maximum arm reach	950 mm
Upper-arm elevation	10 ~ 150°

02 / SPECIFICATIONS 02

Specifications and configuration

Figures follow the available model documentation. The agreed specification defines the delivered configuration.

Parameter	Specification
Forearm elevation	20 ~ 200°
Wrist rotation	-150 ~ +150° (manual; powered option)
Camera configuration	1 × 30× zoom 1080P + 3 × 720P
Turning mode	Zero-radius turn
Nominal operating / flight time	3 h
Ingress protection (source)	IP65
Arm rotation	0 ~ 360°
Gripper opening	0-160 mm
PTZ tilt	-30 ~ +90°
PTZ pan	360° continuous
Driving-camera field of view	170°

05 / INTEGRATION & CARE

Installation, operation and care

Installation and integration

Check driving direction, camera views, arm limits and gripper action on level controlled ground. Add load gradually and verify stability at full extension and stopping response. Secure the battery and keep wiring clear of tracks and joints. Keep people outside the arm sweep and pinch zones.

Operation and maintenance

After each mission, check track tension, debris, joint fasteners and camera cleanliness; charge and store the battery as specified. If video or control becomes unreliable, stop movement before diagnosing power and communications. After impact, water exposure or significant overheating, inspect before returning to service.

Commissioning record

01 Confirm model, configuration, software and document versions.

02 Record load, environment, supply and mission conditions.

03 Verify protective functions, stopping and abnormal-condition responses.

04 Retain key readings, photographs and inspection records; agree a maintenance plan.

06 / OPERATING BOUNDARIES

Operating boundaries and technical review

01 Operation requires trained personnel familiar with the fitted configuration. Isolate power and prevent unintended startup before servicing or connection changes.

02 Confirm control channels, arm limits, stopping method and loss-of-link behavior on the actual machine. This guide does not define unspecified interface protocols, additional sensors or autonomous capabilities.

03 Assess electrical, rotating-part, pinch-point and work-at-height risks for the actual site. Keep people clear of propellers, tracks, manipulators and loaded cables as applicable. Stop and inspect when abnormal conditions arise.

04 Reference range, duration, slope and productivity figures are not guarantees for every environment. Revalidate system performance and protective behavior after changing payload, power, controller or structure.

05 Product names and protection descriptions do not replace certificates. For explosive atmospheres, firefighting, aviation or special environments, confirm the applicable documentation and its match to the delivered configuration.

07 / DOCUMENT NOTES

Specification and configuration notes

01 Range, obstacle, slope and endurance figures are source specifications affected by load, traction, obstruction and battery state. IP65 describes ingress protection, not explosion protection, immersion capability or heat-resistance certification.

02 The legacy robot document contains unrelated aircraft and propeller boilerplate. This edition replaces it with guidance appropriate to tracks, manipulators, batteries and remote operation.

Source and edition

Technical data have been reorganized from the available product attachment and project documentation. Originals are retained in the project archive. Layout edition: September 2026.

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Use the mutually confirmed delivery documents for purchasing, installation and acceptance. If drawings, nameplates or hardware differ from this guide, verify the applicable model and version before operation.

Business enquiries: see the next page.

Business enquiries

Product selection · Project enquiries · Technical support

SV-FFR

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