

TECHNICAL DATA SHEET

Spider MODE Powered Ascender System

Engineering evaluation, procurement assessment, compliance file support
and project acceptance review package

DOCUMENT TYPE

Technical
specification pack

MODELS

PRO / MAX

MACHINE REFERENCES

FA7080010 /
FA7080050

BATTERY MODEL

M181002NN-3605-2

CLASSIFICATION

Controlled technical
document



1 SYSTEM OVERVIEW

The **Spider MODE Powered Ascender** is a battery-powered vertical mobility device intended for controlled movement of personnel and loads within temporary rope-access and lifting applications. The system integrates a motorised lifting unit, removable lithium-ion battery pack, local controls, wireless interface, emergency stop and emergency descent provisions.

The equipment is engineered as one element within a complete rope-based system and shall not be treated as a stand-alone life-safety approval. Final acceptance remains dependent on rope compatibility, backup arrangements, anchor selection, rescue methodology and project-specific engineering controls.

SPIDER MODE PRO

General operational configuration | FA7080010



- Rated load 200 kg
- Maximum ascent speed up to 22 m/min
- Vertical travel per charge 330–360 m at 100 kg
- Ingress protection IP54

SPIDER MODE PRO MAX

Sealed / high-exposure configuration



- Rated load 200 kg
- High-torque drive profile
Vertical travel per charge up to 450 m at 100 kg
- Ingress protection IP65

Power platform

Permanent-magnet motor architecture with geared transmission

Load envelope

200 kg rated load under controlled conditions

Battery architecture

36 V / 5 Ah removable lithium-ion battery system

2 MACHINE SPECIFICATIONS

Primary engineering specification matrix for machine-level review. Values below are presented with model differentiation and operational

Parameter	PRO (FA7080010)	MAX (FA7080050)	Engineering notes / conditions
Authorized working load (AWL)	200 kg	200 kg	Maximum rated load under controlled conditions.
Motor system	Permanent-magnet motor (~1000 W class)	High-torque permanent-magnet drive (~1000 W class)	Architecture-based description; final drive response depends on reduction ratio and control profile.
Maximum ascent speed	Up to 22 m/min	Up to 20 m/min	Dependent on load, rope condition, battery state and friction losses.
Maximum descent speed	Up to 30 m/min	Up to 30 m/min	Controlled descent under rated operating conditions.
Vertical travel per charge (100 kg)	330–360 m	Up to 450 m	Performance depends on load profile, rope condition, ambient temperature and operating cycle.
Battery system	36 V lithium-ion, 5000 mAh	36 V lithium-ion, 5000 mAh	Removable battery pack; see detailed battery section.
Total machine weight (with battery)	Approx. 14.3 kg	Approx. 15 kg	MAX value reflects reinforced housing / sealing architecture.
Housing material	Aluminium alloy	Reinforced aluminium alloy	Primary structural distinction supports higher environmental sealing on MAX.
Ingress protection	IP54	IP65	Principal verified environmental differentiation between models.
Rope compatibility	10–11 mm static rope	10–11 mm static rope	Use EN 1891 Type A low-stretch rope; 11 mm required for lifting loads.
Operating temperature	-20°C to +50°C	-20°C to +50°C	Apply site-specific controls at environmental extremes.
Wireless connectivity	Mode mobile app	Mode mobile app	2.4 GHz Wi-Fi architecture.
Remote monitoring range	Up to 100 m nominal	Up to 100 m nominal	Manufacturer-stated nominal figure; validate actual control range on site due to obstructions and interference.

Table note: Range, speed and travel values are system-level figures and shall be confirmed against the latest manufacturer documents and project conditions before final engineering acceptance.

3 BATTERY SYSTEM

Detailed battery data supports electrical review, logistics assessment and transport planning. Values below relate to battery model **M181002NN-3605-2** associated with the Spider MODE Powered Ascender platform.

Battery parameter	Value
Battery model	M181002NN-3605-2
Battery reference	FA7080000
Battery type	Rechargeable lithium-ion multi-cell pack
Nominal voltage	36 V
Rated capacity	5000 mAh
Rated energy	180 Wh
Battery mass	Approx. 1286 g
Dimensions	247.3 × 80.3 × 56.5 mm
Cell type	INR18650-25P
Number of cells	20

Charge / discharge characteristic	Value
Limited charge voltage	42 V
Standard charge current	2 A
Maximum continuous charge current	5 A
End-of-charge current	0.02 A
Standard discharge current	5 A
Maximum continuous discharge current	35 A
Cut-off voltage	27 V
Protection functions	BMS with overcurrent, short-circuit protection

4 TRANSPORT / DG STATUS

Topic	Status / description
UN transport classification	UN3480 — Lithium-ion batteries
Hazard class	Class 9
UN38.3 test status	Test sequence T1–T8 passed under UN Manual of Tests and Criteria Rev.8, Section 38.3
Sea transport documentation	Available in submitted manufacturer file set
Air transport documentation	Available in submitted manufacturer file set
Packaging use appraisal	Separate outbound dangerous-goods packaging result sheet available

5 ROPE INTERFACE & COMPATIBILITY

Compatibility parameter	Requirement / engineering note
Rope standard	EN 1891 Type A low-stretch kernmantle rope
Personnel lifting rope diameter	10–11 mm
Load lifting rope diameter	11 mm
Prohibited condition	Use of rope outside the specified diameter range
Rope preparation	Pre-conditioned / pre-soaked rope required to stabilise performance and reduce slippage
System context	Use together with an independent safety / fall-arrest arrangement

6 FUNCTIONAL & OPERATIONAL CONSTRAINTS

- Equipment is intended for temporary use only and shall not be left suspended on ropes when not in operation.
- Loads shall not remain suspended on the system after completion of the lifting or access task.
- Rope protection cover shall not be opened while the system is under load.
- All machine, rope, connection and control elements shall be inspected prior to operation.
- Wireless control performance shall be validated under actual site conditions before operational reliance.
- Only manufacturer-approved battery and charger combinations shall be used.
- Task-specific EPI / PPE requirements remain subject to risk assessment and site rules.

7 CONFORMITY & REFERENCED STANDARDS

This page separates manufacturer-issued declarations, machinery/electrical framework references and standards cited in the submitted technical file. It is structured to support Tier 1 review without overstating certification scope.

Evidence layer	Referenced framework / standard	Engineering interpretation
Manufacturer PPE declaration	Regulation (EU) 2016/425 — Class III	Treat as manufacturer-issued declaration material; verify latest certificate scope and traceability before project-critical reliance.
PPE-related standards referenced	EN 341:2011; EN 353-2:2002; EN 1496:2017; EN 364:1992	Useful for technical file review; do not overstate as independent certification unless underlying records are supplied.
Machinery framework	Machinery Directive 2006/42/EC	Indicates intended machinery compliance alignment.
Electrical / EMC / radio framework	2014/30/EU; 2014/53/EU; 2014/35/EU	Supports electrical, EMC and wireless architecture review.
Additional machinery / lifting standards listed in submitted file set	EN 14502-1; EN 14502-2; EN 14492-1; EN 14492-2	Use as referenced declaration standards within document review, not as a substitute for model-specific engineering acceptance.

Engineering position: this specification pack preserves technical accuracy by distinguishing verified machine/battery data from declaration-based conformity statements. Project approval should rely on the latest revision-controlled manufacturer documents and traceable supporting records.

8 SUPPORTING EVIDENCE REGISTER

Document category	Examples reviewed / held in file set	Use within company review
Operating / user manual	Machine operation, rope rules, environmental limits and control notes	Primary technical source for use conditions and constraints.
Battery safety / MSDS	Battery identity, chemistry, handling and storage requirements	Electrical safety and hazardous-goods context.
UN38.3 test records	Transport test pass documentation	Logistics acceptance and shipping readiness.
Sea / air DG reports	Mode-specific transport documentation for battery	Freight planning and dangerous-goods compliance support.
PPE / conformity declarations	Manufacturer-issued declaration documents for machine variants	Review with certificate traceability checks.
Packaging use appraisal	Outbound dangerous-goods packaging assessment sheet	Confirms packaging decision pathway for transport.

9 MANUFACTURING / QUALITY SYSTEM SUPPORT

Management-system evidence	Status
ISO 45001:2018	Occupational health and safety management system certificate provided
ISO 14001:2015	Environmental management system certificate provided
ISO 9001	Manufacturer quality-management certificate provided in file set

Interpretation: management-system certificates support organisational and manufacturing-process maturity. They do not replace product-specific certification or project-level engineering verification.

10 ENGINEERING INTEGRATION REQUIREMENTS

System compatibility Verify rope type, rope diameter, anchor systems, connectors, backup devices and interface constraints before deployment.

Environmental review Assess exposure, ingress risks, obstruction risks, wireless range limitations, temperature and altitude against project conditions.

Operational planning Confirm task method, rescue method, exclusion zones, suspended-load controls and operator competency requirements.

Maintenance / traceability Retain machine ID, serial record, battery identity, inspection history, repairs and replaced parts within the service file.

Client / regulatory acceptance Confirm local regulatory requirements and client-specific evidentiary expectations before release to project.

11 TECHNICAL DISCLAIMER

This document is a controlled engineering summary derived from manufacturer manuals, battery test documentation, transport certification records, submitted declarations and structured specification review. All technical values, conformity references and operational constraints shall be verified against the latest revision-controlled manufacturer documents prior to engineering approval, procurement release, project deployment, maintenance activity or third-party reliance.

Any declaration or certification used for compliance purposes shall be checked for validity, scope, issuing authority and traceability to the exact machine reference, battery model and applicable serial-controlled product.