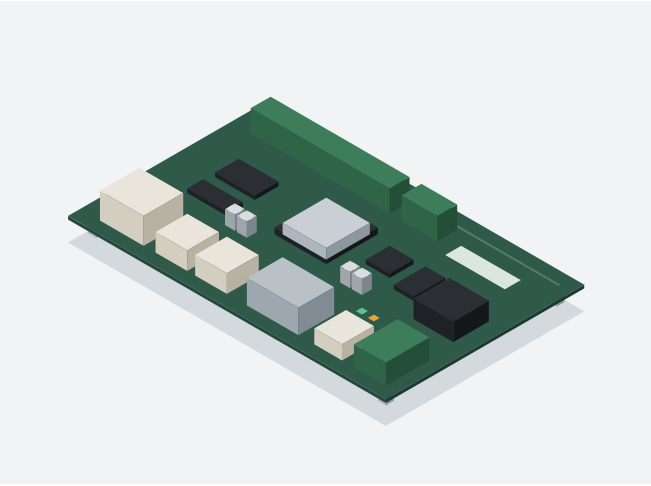
Datasheet

SC-340M Medical Motion and Sensing Controller

SC-340M Medical Motion Controller / 6 actuator channels, 4 load-cell inputs / dual-channel safety architecture / remote service interface



The SC-340M is the controller at the heart of a powered patient-support device. It drives up to six DC actuators for height, backrest, knee, leg and tilt, reads four load cells for integrated weighing and patient-exit detection, monitors the side rails, brakes and CPR release, and connects the device's pendants, footboard panel and nurse call.

Two independent processors share the work: a dual-core lockstep main processor runs the motion and weighing functions, and a separate safety monitor watches actuator currents, positions and the emergency inputs, and can remove power from the actuators on its own. The architecture is designed so that the device remains safe after any single fault, which simplifies our customers' risk management.

Features

- **Dual-channel safety architecture.** An independent safety monitor with its own clock and power supervision can stop all actuators within 20 ms, whatever the state of the main processor.
- **Six actuator channels with current sensing.** Up to 8 A continuous per channel (12 A peak), with soft start, stall detection and Hall-sensor position feedback for repeatable positions.
- **Integrated weighing.** Four 24-bit load-cell inputs with ratiometric excitation, for scales and patient-exit detection designed by the customer.
- **Battery operation.** Charge control for the device's 24 V battery, so that the bed can be moved and positioned when unplugged.
- **Remote service interface.** Authenticated, encrypted Ethernet connection to the equipment maker's service network for log retrieval, diagnostics and firmware updates.
- **Long-term supply.** Supplied to March 2031 under our Long-Term Supply Program, with repair and firmware support for seven years after the end of supply.

Specifications

Processing

Main processor	32-bit RISC, dual-core lockstep, 400 MHz
Safety monitor	Independent 32-bit microcontroller, 120 MHz, separate clock and supervisor
Memory	RAM 2 MB with ECC; flash 8 MB in two banks (A/B) with rollback
Operating system	Hosaka H-RTOS 6

Motion and sensing

Actuator outputs	6 channels, 24 V DC brushed motors, 8 A continuous / 12 A peak per channel, 30 A total
Position feedback	Hall sensor inputs, 2 per channel
Load-cell inputs	4 channels, 24-bit, 5 V ratiometric excitation
Digital inputs	16, 24 V, opto-isolated (side rails, brakes, CPR release, pendants)
Digital outputs	8, 24 V, 500 mA
Nurse call	2 relay outputs, 1 A at 30 V DC

Communication

CAN FD	2 channels (pendants, footboard panel, accessories)
RS-485	1 channel
Ethernet	10/100BASE-TX, 1 port: remote service interface (TLS 1.2 and 1.3, mutual certificate authentication)
USB	USB 2.0 device, service port

Power and environment

Supply voltage	24 V DC nominal (18 to 32 V)
Battery	24 V lead-acid or lithium-ion, charge control up to 10 A
Power consumption	4.8 W typical, actuators idle
Operating temperature	0 to +55°C
Storage temperature	−20 to +70°C
Humidity	10 to 90% RH, non-condensing
Dimensions	160 × 100 × 22 mm
Mass	148 g

Standards

Medical electrical equipment	Designed for use in equipment conforming to IEC 60601-1 and IEC 60601-2-52 (evaluated as part of the end product)
Software life cycle	IEC 62304, software safety class B
Risk management	ISO 14971 (risk management file available to OEM customers)
Electromagnetic compatibility	IEC 60601-1-2 in the Hosaka reference configuration
Manufacturing	Ina Works, certified to ISO 13485 and ISO 9001

Ordering information

Model	Description
`SC-340M-A0`	Standard: 6 actuator channels, 4 load-cell inputs, remote service interface
`SC-340M-A1`	As A0, with conformal coating
`SC-340M-B0`	4 actuator channels, no load-cell inputs
`SC-340M-B1`	As B0, with conformal coating
`SC-340M-DK`	Development kit: SC-340M-A0, harness set, service cable, power supply and SDK licence
`SC-H340-01`	Harness set (actuators, load cells, CAN), 1.5 m

Customer-specific variants with OEM firmware, connectors or coating are supplied under the customer's own part number. Please consult the Medical OEM Business Division. Specifications are subject to change without notice. The SC-340M is a component for incorporation into medical electrical equipment; conformity of the finished equipment is the responsibility of its manufacturer.