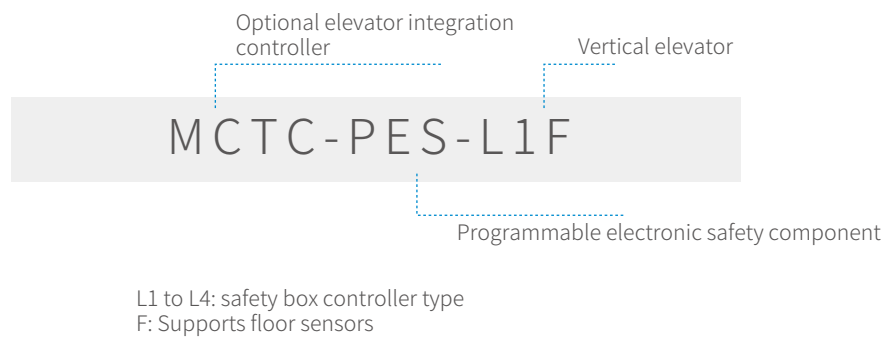
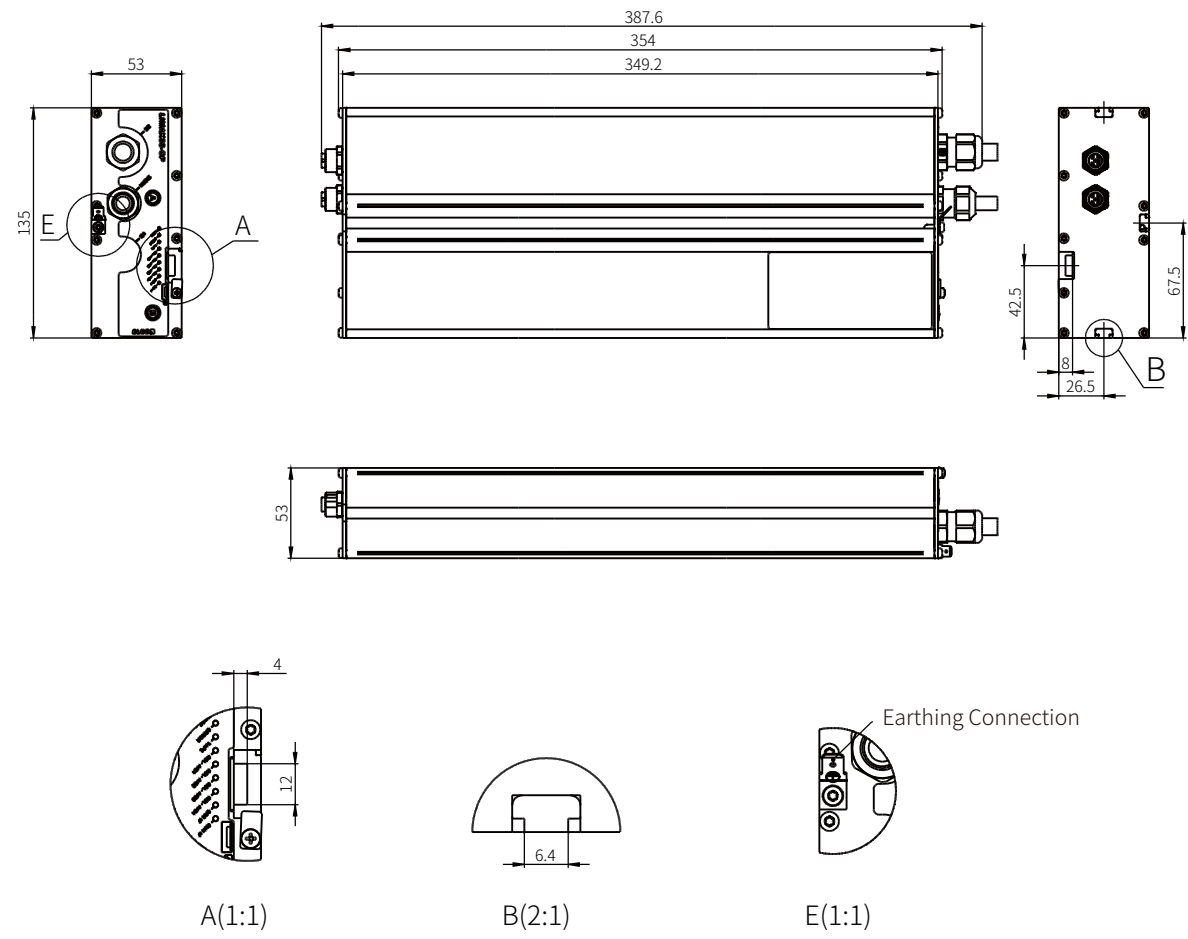


Naming Rule



Product Dimensions



Conformance Testing Report



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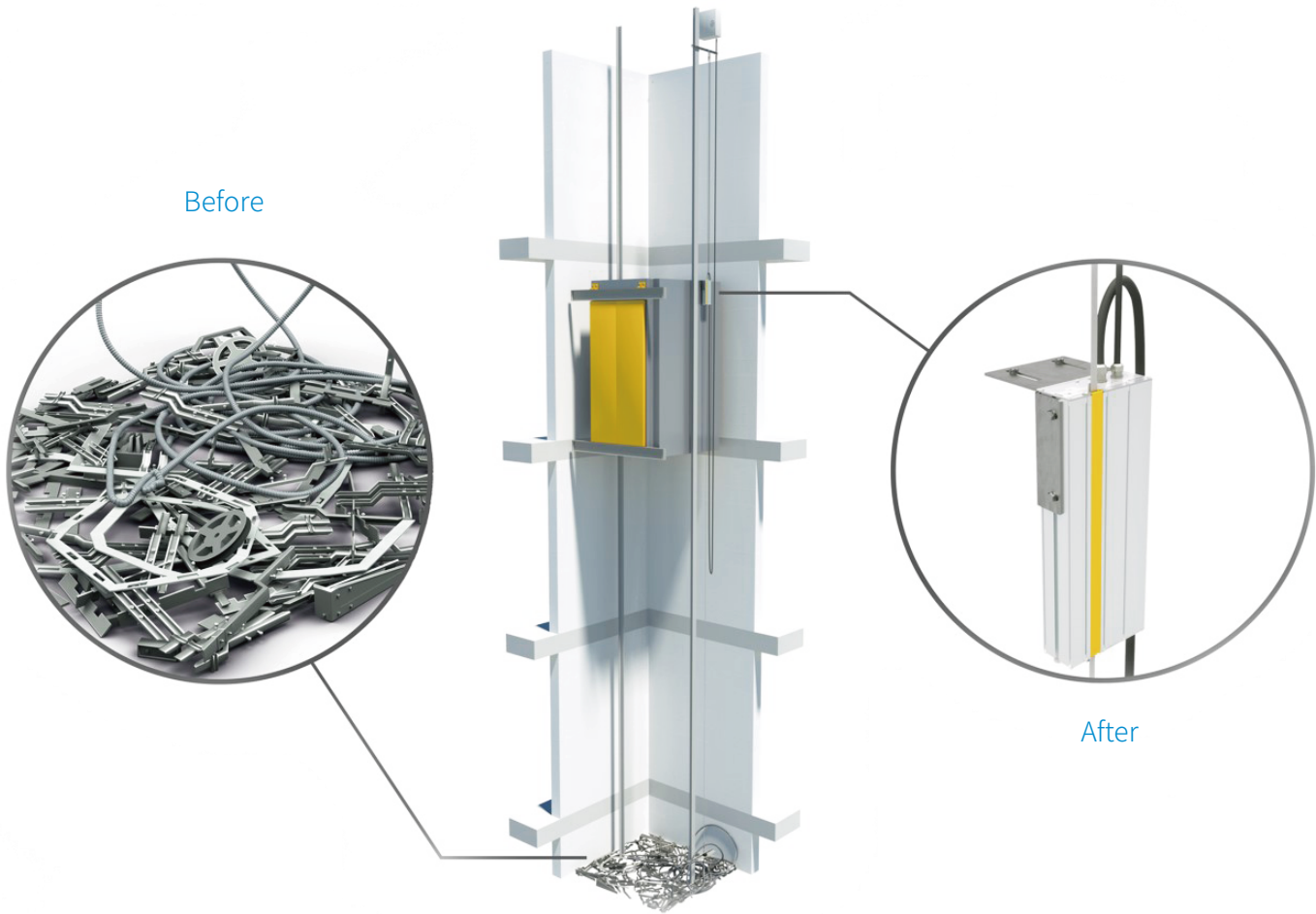


Shaft Absolute Positioning System
A Shaft System Revolution

INOVANCE

Monarch

Product Features



- | Imported components
- | Tidy Shaft
- | Shorter installation time (half a day for a high-rise elevator)
- | Safer and more reliable system, greater riding comfort

- Powered by the SIL3 rated travel reduction technology
- Dual redundancy check on speed and position on the encoder side and on the magnetic grating ruler side
- Absolute position measuring to ensure that the elevator system will never land at any undesired floor



Absolute position measurement and elevator safety functions for double safety assurance

Safety Functions Beyond National Standards

Function Description	SIL Required by National Standards	This Product
Door open in advance	SIL2	SIL3
Re-leveling	SIL2	SIL3
Unintended car movement protection (UCMP)	SIL2	SIL3
Overspeed protection, activated when the speed is greater than 115% of the rated speed	SIL3	SIL3
Travel reduction	SIL3	SIL3

More Integrated Functions

Function Description	Implementation Description
Protection against landing at undesired floor	This function is implemented in combination with the control system.
Omitting switch components	This function omits signal switches such as the leveling plate, leveling switch, slow-down switch and limit switch in the original shaft system.
Absolute position and speed detection	This function detects car position and speed information in real time.
Door lock short circuit detection	This function is implemented in combination with the control system.

Technical Specification

Item	Description
Measuring principle	Absolute
Measuring length	≤ 260 m
Measuring speed	≤ 10 m/s
Applicable magnetic scale	AB20-80-10-1-R-D-15-BK80
Resolution	1000 μm = 1.00 mm
Repetition precision	± 1 mm
System accuracy in 20°C	± (1000 μm + 100 μm × L [m]) L = Measuring length; unit: m
Connector	Open wiring
Housing material	Aluminum
Weight	1200 g (excluding the cable that weighs 60 g/m)
Operating voltage	+ 24 VDC -20% / +10%
Voltage ripple	< 100 mVpp
Current consumption	≤ 0.2 A @24 V
Door zone output	+ 24 VDC -20%, max.200 mA
Reverse voltage protection	Yes
Communication protocol	CANopen (DS406)
Storage temperature	- 25°C to + 85°C
Operating temperature	- 20°C to + 65°C
Maximum humidity	95% non-condensing
Degree of protection	IP54 (EN 60529)
Service life	20 years
Relay activation time	< 55 ms

Product Connectors

Plug	Connector Type	Signal	Meaning	Color	Description
SCA cable	Power connector	24 V	Positive	Brown	External 24 V power supply
		GND	Negative	White	
	Backup power connector	12V+	Positive	Red	Backup 12 V power supply
		0V	Negative	Blue	
	CAN communication connector	CAN-H	Wire H for CAN1 communication	Yellow	CAN1 communication with the controller
		CAN-L	Wire L for CAN1 communication	Green	
		CAN-GND	Ground wire for CAN1 communication	Black	
Shielded cable connector	SHLD	Shielded cable	N/A		
PIO cable	Safety relay output connector	SR-I	SR input	White	Safety relay, used to disconnect the safety circuit
		SR-O	SR output	Brown	
		DR1-I	DR1 input	Blue	Safety relay, used to short the front door lock circuit
		DR1-O	DR1 output	Red	
		DR2-I	DR2 inputv	Pink	Safety relay, used to short the back door lock circuit
		DR2-O	DR2 output	Grey	
		ABR-I	ABR input	Green	Safety relay, used to control the wire holder and auxiliary brake
		ABR-O	ABR output	Yellow	
FS cable	Power output connector	12V-O	Positive	Brown	Floor sensor power input
		0V-O	Negative	White	
	Floor sensor input connector of door 1	FS1-I1	Input signal 1 of door 1	Green	Leveling input of the floor sensor of door 1
		FS1-I2	Input signal 2 of door 1	Yellow	
	Floor sensor input connector of door 2	FS2-I1	Input signal 1 of door 2	Pink	Leveling input of the floor sensor of door 2
FS2-I2		Input signal 2 of door 2	Grey		

Product Models and Description

Model	Relay Connector				Floor Sensor Connector	Description
	Description	Description	Description	Description		
MCTC-PES-L1F	√	√	X	X	√	Single door; auto-tuning
MCTC-PES-L1	√	√	X	X	X	Single door; manual tuning
MCTC-PES-L2F	√	√	X	√	√	Single door; auto-tuning; supports wire holders and auxiliary brakes (usually for asynchronous motors)
MCTC-PES-L2	√	√	X	√	X	Single door; manual tuning; supports wire holders and auxiliary brakes (usually for asynchronous motors)
MCTC-PES-L3F	√	√	√	X	√	Double doors; auto-tuning
MCTC-PES-L3	√	√	√	X	X	Double doors; manual tuning
MCTC-PES-L4F	√	√	√	√	√	Double doors; auto-tuning; supports wire holders and auxiliary brakes (usually for asynchronous motors)
MCTC-PES-L4	√	√	√	√	X	Double doors; manual tuning; supports wire holders and auxiliary brakes (usually for asynchronous motors)