

RAILWAY APPLICATIONS

Finder products and equipment for the railway sector are subject to strict technical standards.

Designed to withstand shock and vibration, and to ensure maximum performance at high temperatures.



ABOUT US



Finder was founded in Italy in 1954. Since then it has been designing and manufacturing a wide range of electromechanical and electronic components for both the residential and industrial sectors.

Today, thanks to its global vision, Finder now distributes its products around the world through a network of 29 company-owned subsidiaries and more than 80 trade partnerships.

Finder is an international family made up of more than 2000 individuals, all united by the same values and passion for our products.



14,000+ different products to satisfy a myriad of applications. From products at the heart of automation to the control of machines, power, time, temperature, liquid level and light

OUR PRODUCTS CARRY MORE CERTIFICATIONS THAN ANY OTHER RELAY MANUFACTURER



FINDER IS AN ITALIAN BRAND WITH A WORLDWIDE PRESENCE

4 PRODUCTION PLANTS IN EUROPE

29 SUBSIDIARIES

80+ OFFICIAL DISTRIBUTORS



ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG)

Finder considers social and environmental sustainability as fundamental principles of doing business, just as it believes that business growth must develop in synergy with a conscious vision of the future.

That is why Finder is committed to reducing and eliminating CO2 emissions, focusing on circularity, caring for its employees to foster a safe, fair and inclusive work environment, spreading a culture of integrity and transparency, and collaborating with stakeholders who share its values.

AUTONOMY AND INDEPENDENCE

Finder's managerial, financial and technological autonomy allows optimal control over all its business processes, the results of which include simplified customs procedures and a high reliability of commercial relations.



ISO 9001:2015
Quality management system



IECEx
Equipment for Use in Explosive Atmospheres



ISO 14001:2015
Environmental management system



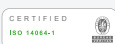
ISO 27001-27701
Information Security and Privacy Management System



ISO 45001:2018
Health and safety management system



ISO 50001:2018
Energy management system



ISO 14064-1:2019
Carbon Footprint verification



AEOF
Simplified customs and enhanced supply chain security



FSC
Forest Stewardship Council



Cribis Prime Company
Recognition of highest reliability of commercial relations



JOURNEYS DESERVE SAFETY AND COMFORT

In the railway industry, electromechanical components and passenger comfort devices must meet exceptionally high technical and quality standards.

Finder products are designed to ensure reliable operation even under the most demanding conditions, including intense vibration, continuous shock, wide temperature fluctuations, and high-humidity environments. They provide dependable service continuity across the main onboard and control applications.

Renowned for their outstanding performance and certified reliability, Finder products are trusted by the world's leading railway manufacturers.

SOLUTIONS FOR MODERN RAIL SYSTEMS

Finder solutions for the railway industry are engineered to deliver outstanding performance, reliability, and onboard comfort. They are designed for use across all critical train systems, including door control, pantograph management, interior and exterior lighting, HVAC, signalling, infotainment, and onboard auxiliary power management.



FIRE AND SMOKE CHARACTERISTICS OF THE MATERIALS

The relays and their sockets and accessories are manufactured using specific insulating materials, which satisfy requirement R26 of fire protection prescribed by the standard EN 45545-2:2020 for product category EL10. Requirement R26, for Hazardous levels HL1 to HL3, is the conformity to V0 class following vertical small flame test according to EN 60695-11-10.



MECHANICAL AND CLIMATIC CHARACTERISTICS

The resistance against random vibrations and shock of the relays and their sockets and accessories is in compliance with the EN 61373 standard for Category 1, Class B products. Their resistance to temperature and humidity is in compliance with the EN 50155 standard, OT4/ST1.



Alongside solutions that support operational efficiency, the Finder portfolio also includes technologies designed to enhance the passenger experience. Integrated seat-mounted power and charging systems for smartphones, tablets, and laptops provide seamless connectivity, delivering a more comfortable, convenient, and modern travel experience.



TECHNOLOGIES FOR PASSENGER COMFORT

Complementing Finder's railway solutions, the 4box portfolio includes a range of passenger-seat power solutions, such as the Side Panel Socket, the P40 Socket, and the 25 W AC USB Charger. Specifically designed for seamless integration into train seating, these devices provide convenient access to power and charging directly at each passenger seat.

By enabling passengers to charge smartphones, tablets, and laptops throughout their journey, these solutions enhance onboard comfort, connectivity, and the overall travel experience, while combining a compact design with the robustness required for modern railway applications.



PANTOGRAPH MANAGEMENT

- 46T Series
- 56T Series



DRIVER'S CONTROL CONSOLE

- 46T Series
- 80T Series
- 83T Series
- 11 Series



EXTERIOR LIGHT CONTROL

- 11 Series
- 39T Series
- 46T Series
- 55T Series



COUPLER

- 70T Series
- 83T Series



BOGIE MONITORING
- 56T Series



SIGNALLING
- 39T Series
- 7ST Series



DOOR CONTROL
- 46T Series
- 7ST Series
- 80T Series
- 83T Series
- 86T Series



AIR CONDITIONING
- 39T Series
- 55T Series
- 70T Series



DOOR OPENING/CLOSING

- 39T Series
- 46T Series
- 55T Series
- 75T Series



ANCILLARY EQUIPMENT

- 22 Series
- 55T Series
- 86T Series



INTERNAL LIGHT MANAGEMENT

- 11 Series
- 46T Series
- 55T Series
- 56T Series



MOBILE DEVICE CHARGING & USBs

-  Side P40
-  USB CA 20W - CCA 25W
- 22 Series
- 56T Series



MESSAGE PANELS / INFOTAINMENT

- 46T Series
- 55T Series
- 80T Series



Pantograph management

Pantograph control requires fast, highly reliable systems to ensure continuous power transfer between the overhead line and the train.

Finder solutions deliver precise motion control and dependable circuit protection, providing the performance and reliability required for demanding railway applications.

46T Series

56T Series



External/Internal light management

Light management requires precision, synchronisation, and resistance to environmental stress. At the same time, interior lighting systems must deliver visual comfort, energy efficiency, and long-term reliability.

Finder relays and timers enable intelligent control of onboard lighting, ensuring efficient management of headlights, position lights, and external signalling. These solutions enhance safety and visibility in all operating conditions while optimising energy consumption.

11 Series

46T Series

56T Series

39T Series

55T Series



Bogie monitoring

Bogie monitoring systems continuously monitor and manage the train's dynamic functions, contributing to enhanced safety, stability, and ride comfort.

Finder relays deliver outstanding performance and long-term reliability, even under continuous vibration, wide temperature variations, and demanding duty cycles.

56T Series



Driver's control console

The driver's control console requires reliable, fast-acting components capable of withstanding constant vibration to ensure the safe operation of critical train functions.

Finder relays and timers deliver dependable performance, precise control, and long-term reliability, even in the most demanding railway environments.

46T Series

80T Series

83T Series

11 Series



Coupler

Train couplers provide power supply and support maintenance operations while trains are out of service.

Finder components ensure electrical safety, mechanical robustness, and reliable performance in power connection and energy management applications throughout maintenance activities.

70T Series

83T Series



Signalling

Railway signalling systems demand the highest levels of reliability and safety.

Finder force-guided contact relays provide safe and dependable control of signalling and monitoring circuits, helping to protect railway infrastructure while ensuring the continuous and reliable operation of the network.

39T Series

75T Series



Door control

Railway door control systems require highly reliable components to ensure safe, precise, and efficient door operation.

Finder solutions deliver accurate control, synchronised movement, and exceptional reliability, ensuring safe opening and closing cycles even under intensive operating conditions.

46T Series 80T Series 86T Series
75T Series 83T Series



Air conditioning

Railway HVAC systems require highly reliable components to efficiently control ventilation, compressors, and air conditioning equipment.

Finder solutions help maintain a consistent onboard climate while optimising energy efficiency and ensuring reliable, uninterrupted operation in demanding railway environments.

39T Series
55T Series
70T Series



Ancillary equipment

Onboard ancillary equipment management requires compact, high-performance components to power and control a wide range of service equipment throughout the train.

Finder solutions provide reliable operation and continuous performance, supporting onboard appliances that enhance passenger comfort and the overall travel experience.

22 Series 86T Series
55T Series



Door opening/closing

Door opening and closing systems must deliver fast, safe, and precise operation throughout every duty cycle.

Finder solutions provide efficient control of automatic door mechanisms, ensuring long-term reliability and helping to protect passengers during boarding and alighting operations.

39T Series 55T Series
46T Series 75T Series



Message panels / Infotainment

Modern onboard infotainment systems and passenger information displays provide real-time travel information, enhancing the overall passenger experience.

Finder solutions support the reliable control of passenger information displays, audio systems, and onboard communication equipment, ensuring continuous operation and high-quality service throughout the journey.

46T Series
55T Series
80T Series



Mobile device charging & USBs

Passenger seating solutions require practical, safe, and seamlessly integrated charging solutions.

With the 4box Side Panel Socket, P40 Socket, and the 25 W USB-C Charger, passengers can conveniently power and charge smartphones, tablets, and laptops throughout their journey, enhancing onboard comfort, connectivity, and the overall travel experience.



Side
P40
USB CA 20W - CCA 25W

22 Series
56T Series

Plug-in power relays

46T Series

- AC coils or DC coils with extended range
- Cadmium Free contacts (standard version)
- Contact material options
- Plug-in terminals
- Plug-in 97 series sockets
- Coil EMC suppression modules
- Accessories (Sockets and Timer modules)



Driver's control console



Pantograph management



Door control



Door opening/closing



Message panels / Infotainment



External/Internal light management



* Short term (10 min) +85°C

Contact specification

		46.52T	46.61T
Contact configuration		2 CO (DPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	8/15	16/80
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2000	4000
Rated load AC15 (230 V AC)	VA	350	750
Single phase motor rating (230 V AC)	kW	0.37	0.55
Breaking capacity DC1: 24/110/220 V	A	6/0.5/0.15	12/0.5/0.25
Minimum switching load	mW (V/mA)	300 (5/5)	300 (10/5)
Standard contact material		AgNi	AgSnO ₂

Coil specification

Nominal voltage (U _N)	V AC (50/60 Hz)	230	230
	V DC	24 - 72 - 110	24 - 72 - 110
Rated power	VA/W	1.2/0.5	1.2/0.5
Operating range	AC	(0.80...1.1)U _N	(0.80...1.1)U _N
	DC	(0.70...1.25)U _N	(0.70...1.25)U _N
Holding voltage	AC/DC	0.4 U _N	0.4 U _N
Must drop-out voltage	AC/DC	0.1 U _N	0.1 U _N

Technical data

Mechanical life DC	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³
Operate/release time	ms	10/3	15/5
Insulation between coil and contacts (1.2/50 μs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range	°C	-40...+70*	-40...+70*
Environmental protection		RT II	RT II

Approvals (according to type)



Plug-in mount, general purpose 55T Series

- DC coils with extended range
- Cadmium Free contacts (standard version)
- Plug-in 94 series sockets
- Coil EMC suppression modules
- Accessories (Sockets and Timer modules)



Air conditioning



Door opening/closing



Ancillary equipment



External/Internal light management



Message panels / Infotainment



* Short term (10 min) +85°C

55.34T



Contact specification

Contact configuration		4 CO (4PDT)
Rated current/Maximum peak current	A	7/15
Rated voltage/Maximum switching voltage	V AC	250/250
Rated load AC1	VA	1750
Rated load AC15 (230 V AC)	VA	350
Single phase motor rating (230 V AC)	kW	0.24
Breaking capacity DC1: 24/110/220 V	A	7/0.5/0.25
Minimum switching load	mW (V/mA)	300 (5/5)
Standard contact material		AgNi

Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	—
	V DC	24 - 72 - 110
Rated power DC	W	1
Operating range	AC	—
	DC	$(0.70...1.25)U_N$
Holding voltage	DC	$0.5 U_N$
Must drop-out voltage	DC	$0.1 U_N$

Technical data

Mechanical life AC/DC	cycles	$50 \cdot 10^6$
Electrical life at rated load AC1	cycles	$150 \cdot 10^3$
Operate/release time	ms	11/3
Insulation between coil and contacts (1.2/50 μ s)	kV	4
Dielectric strength between open contacts	V AC	1000
Ambient temperature range	°C	-40...+70*

Environmental protection

RT I

Approvals (according to type)



Plug-in power relays

56T Series

- AC coils or DC coils with extended range
- Cadmium Free contacts (standard version)
- Contact material options
- Plug-in 96 series sockets
- Plug-in/Faston Faston 187
- Coil EMC suppression modules
- Accessories (Sockets and Timer modules)



Bogie monitoring



Pantograph management



Mobile device charging & USBs



External/Internal light management



* Short term (10 min) +85°C

56.32T



56.34T



Contact specification		56.32T	56.34T
Contact configuration		2 CO (DPDT)	4 CO (4PDT)
Rated current/Maximum peak current	A	12/20	12/20
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	3000	3000
Rated load AC15 (230 V AC)	VA	700	700
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 24/110/220 V	A	12/0.5/0.25	12/0.5/0.25
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi
Coil specification		56.32T	56.34T
Nominal voltage (U _N)	V AC (50/60 Hz)	120 - 230	120 - 230
	V DC	24 - 72 - 110	24 - 72 - 110
Rated power	VA (50 Hz)/W	1.5/1	2/1.3
Operating range	AC	(0.8...1.1)U _N	(0.8...1.1)U _N
	DC	(0.70...1.25)U _N	(0.70...1.25)U _N
Holding voltage	AC/DC	0.6 U _N	0.6 U _N
Must drop-out voltage	AC/DC	0.1 U _N	0.1 U _N
Technical data		56.32T	56.34T
Mechanical life AC/DC	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³
Operate/release time	ms	8/8	8/8
Insulation between coil and contacts (1.2/50 μs)	kV	4	4
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range	°C	-40...+70*	-40...+70*
Environmental protection		RT I	RT I
Approvals (according to type)		CE UK CA	

Relay interface modules

MasterPLUS - RAILWAY

39T Series

- 6.2 mm wide
- DC multi-voltage coil with wide operating range
- Cadmium free contacts (standard version)
- Contact material options
- Accepts output fuse module 093.63 (for 5 x 20 mm fuses) - space saving protection for the output circuit
- Easy common connection of adjacent relay terminals A1, A2 and 11 using jumper links
- **39.31T:** box clamp
- **39.61T:** Push-in terminals



Air conditioning



Door opening/closing



External/Internal light management



Signalling



* Short term (10 min) +70 °C

39.31T



39.61T



Contact specification

Contact configuration		1 CO (SPDT)
Rated current/Maximum peak current	A	6/10
Rated voltage/Maximum switching voltage	V AC	250/400
Rated load AC1	VA	1500
Rated load AC15 (230 V AC)	VA	300
Single phase motor rating (230 V AC)	kW	0.185
Breaking capacity DC1: 24/110/220 V	A	6/0.2/0.12
Minimum switching load	mW (V/mA)	500 (12/10)
Standard contact material		AgNi

Supply specification

Nominal voltage (U _N)	V DC	24...132
Rated power	W	0.25
Operating range	V DC	16.8...165
Release voltage	V DC	6

Technical data

Mechanical life AC/DC	cycles	10 · 10 ⁶
Electrical life at rated load AC1	cycles	60 · 10 ³
Operate/release time	ms	5/6
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)
Dielectric strength between open contacts	V AC	1000
Ambient temperature range	°C	-20...+55*
Protection category		IP 20

Approvals (according to type)



Timer modules

86T Series



Door control



Ancillary equipment

Timer modules for use in conjunction with relay & socket

- **86.00T** - Multi-function & multi-voltage timer module
Plug-in for use with 96 series sockets
- **86.30T** - Bi-function & multi-voltage timer module
Plug-in for use with 94, 96 and 97 series sockets
- Specified time range from 0.05 s to 100 h
- LED indicator



* Short term (10 min) +70°C

86.00T



AI: On-delay
DI: Interval
SW: Symmetrical flasher
(starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with
control signal
DE: Interval with control signal on
EE: Interval with control signal off
FE: Interval with control signal on
and off

86.30T



AI: On-delay
DI: Interval

Contact specification

Contact configuration	
Rated current/Maximum peak current	A
Rated voltage/Maximum switching voltage	V AC
Rated load AC1	VA
Rated load AC15 (230 V AC)	VA
Single phase motor rating (230 V AC)	kW
Breaking capacity DC1: 24/110/220 V	A
Minimum switching load	mW (V/mA)
Standard contact material	

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)
	V DC
Rated power AC/DC	W
Operating range	V AC (50/60 Hz)
	DC

Technical data

Specified time range		(0.05...1)s, (0.5...10)s, (5...100)s, (0.5...10)min, (5...100)min, (0.5...10)h, (5...100)h
Repeatability	%	± 1
Recovery time	ms	≤ 50
Minimum control impulse	ms	50
Setting accuracy full range	%	± 5
Electrical life at rated load in AC1	cycles	See 56T series relays
Ambient temperature range	°C	-25...+55*
Protection category		IP 20

Approvals (according to type)



Monitoring relays

70T Series



Air conditioning



Coupler

3 Phase - Rotation and phase loss monitoring relay

- Universal voltage monitoring
(U_N from 208 V to 480 V, 50/60 Hz)
- Phase loss monitoring, under phase regeneration
- Positive safety logic - make contact opens if the relay detects an error
- European patent pending for the innovative principle at the root of the 3 phase monitoring and error survey system
- Box clamp
- **70.61T**: 1 CO (SPDT), 6 A (width 17.5 mm)
- **70.62T**: 2 CO (DPDT), 8 A (width 22.5 mm)



* Short term (10 min) +70°C

70.61T



70.62T



Contact specification		70.61T	70.62T
Contact configuration		1 CO (SPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	6/15	8/15
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	1500	2000
Rated load AC15	VA	250	400
Single phase motor rating (230 V AC)	kW	0.185	0.3
Breaking capacity DC1: 24/110/220 V	A	3/0.35/0.2	8/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	300 (5/5)
Standard contact material		AgNi	AgNi
Supply specification		70.61T	70.62T
Nominal system voltage (U_N)	V AC	208...480	208...480
Frequency	Hz	50/60	50/60
Rated power	VA (50 Hz)/W	8/1	11/0.8
Operating range	V AC	170...500	170...520
Technical data		70.61T	70.62T
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$60 \cdot 10^3$
Switch-off/reaction time	s	< 0.5/< 0.5	< 0.5/< 0.5
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20
Approvals (according to type)		CE UK ENE cULUS	CE UK ENE

Modular timers

17.5 mm wide

80T Series



Door control



Message panels / Infotainment



Driver's control console

- High input/output isolation
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology
- Box clamp



* Short term (10 min) +70°C

80.01T



AI: On-delay
DI: Interval
SW: Symmetrical flasher
(starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on

80.11T



AI: On-delay

Contact specification

Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	8/15
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	4000
Rated load AC15 (230 V AC)	VA	750	750
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 24/110/220 V	A	16/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi

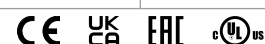
Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240
	V DC	24...240	24...220
Rated power AC/DC	VA (50 Hz)/W	< 1.8/< 1	< 1.8/< 1
Operating range	V AC	16.8...265	16.8...265
	V DC	16.8...265	16.8...242

Technical data

Specified time range		(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min, (0.1...2)h, (1...24)h	
Repeatability	%	± 1	± 1
Recovery time	ms	≤ 50	≤ 50
Minimum control impulse	ms	50	—
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20

Approvals (according to type)



Modular timers

17.5 mm wide

80T Series



Door control



Message panels / Infotainment



Driver's control console

- High input/output isolation
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology
- Box clamp



* Short term (10 min) +70°C

80.41T



BE: Off-delay with control signal

80.61T



BI: Power off-delay
(True off-delay)

Contact specification			
Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	8/15
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	2000
Rated load AC15 (230 V AC)	VA	750	400
Single phase motor rating (230 V AC)	kW	0.55	0.3
Breaking capacity DC1: 24/110/220 V	A	16/0.3/0.12	8/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	300 (5/5)
Standard contact material		AgNi	AgNi
Supply specification			
Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240
	V DC	24...240	24...220
Rated power AC/DC	VA (50 Hz)/W	< 1.8/< 1	< 0.6/< 0.6
Operating range	V AC	16.8...265	16.8...265
	V DC	16.8...265	16.8...242
Technical data			
Specified time range		(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min, (0.1...2)h, (1...24)h	(0.05...2)s, (1...16)s, (8...70)s, (50...180)s
Repeatability	%	± 1	± 1
Recovery time	ms	≤ 50	—
Minimum control impulse	ms	50	500 (A1-A2)
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20
Approvals (according to type)			

Modular timers

22.5 mm wide

83T Series



Driver's control console



Door control



Coupler

- High input/output isolation
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- Multi-voltage versions with "PWM clever" technology
- **83.02T**: 2 timed contacts or 1 timed + 1 instantaneous contact, timing can be regulated using external potentiometer
- Box clamp



* Short term (10 min) +70°C (EN 50155)

83.02T



AI: On-delay
DI: Interval
GI: Pulse delayed
SW: Symmetrical flasher (starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on
WD: Watchdog (Retriggerable interval with control signal on)

83.62T



BI: Power off-delay
 (True off-delay)

Contact specification			
Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	12/30	8/15
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	3000	2000
Rated load AC15 (230 V AC)	VA	750	400
Single phase motor rating (230 V AC)	kW	0.5	0.3
Breaking capacity DC1: 24/110/220 V	A	12/0.3/0.12	8/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi
Supply specification			
Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240
	V DC	24...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 2/< 2	< 1.5/< 2
Operating range	V AC	16.8...265	16.8...265
	V DC	16.8...265	16.8...242
Technical data			
Specified time range		(0.05...1)s, (0.5...10)s, (0.05...1)min, (0.5...10)min, (0.05...1)h, (0.5...10)h, (0.05...1)d, (0.5...10)d	(0.05...2)s, (1...16)s, (8...70)s, (50...180)s
Repeatability	%	± 1	± 1
Recovery time	ms	200	—
Minimum control impulse	ms	50	500 ms (A1 - A2)
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	60 · 10 ³	100 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20
Approvals (according to type)			

Modular timers

22.5 mm wide

83T Series



Driver's control console



Door control



Coupler

- High input/output isolation
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- Multi-voltage versions with "PWM clever" technology
- Box clamp



* Short term (10 min) +70°C (EN 50155)

83.11T



AI: On-delay

83.41T



BE: Off-delay with control signal

83.91T



LI: Asymmetrical flasher (starting pulse on)
LE: Asymmetrical flasher (starting pulse on) with control signal
PI: Asymmetrical flasher (starting pulse off)
PE: Asymmetrical flasher (starting pulse off) with control signal

Contact specification				
Contact configuration		1 CO (SPDT)	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	16/30	16/30
Rated voltage/Maximum switching voltage	V AC	250/400	250/400	250/400
Rated load AC1	VA	4000	4000	4000
Rated load AC15 (230 V AC)	VA	750	750	750
Single phase motor rating (230 V AC)	kW	0.5	0.5	0.5
Breaking capacity DC1: 24/110/220 V	A	16/0.3/0.12	16/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi	AgNi
Supply specification				
Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240	24...240
	V DC	24...240	24...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 1.5/< 2	< 1.5/< 2	< 1.5/< 2
Operating range	V AC	16.8...265	16.8...265	16.8...265
	V DC	16.8...265	16.8...265	16.8...265
Technical data				
Specified time range		(0.05...1)s, (0.5...10)s, (0.05...1)min, (0.5...10)min, (0.05...1)h, (0.5...10)h, (0.05...1)d, (0.5...10)d		
Repeatability	%	± 1	± 1	± 1
Recovery time	ms	200	200	200
Minimum control impulse	ms	—	50	50
Setting accuracy-full range	%	± 5	± 5	± 5
Electrical life at rated load in AC1	cycles	50 · 10 ³	50 · 10 ³	50 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*	-25...+55*
Protection category		IP 20	IP 20	IP 20
Approvals (according to type)				

Relay module with forcibly guided contacts 7ST Series



Door opening/closing



Door control



Signalling

For safety applications, with class A forcibly guided contact relays EN 61810-3 (ex EN 50205)

- For functional reliability in machinery and plant engineering according to EN 13849-1
- Coil status visual indication with LED
- Screwless terminal



* Short term (10 min) +85°C

7S.12...5110T



7S.14...4220/4310T



7S.16...5420T



		7S.12...5110T	7S.14...4220/4310T	7S.16...5420T
Contact specification				
Contact configuration		2 contacts (1 NO + 1 NC)	4 contacts (2 NO + 2 NC and 3 NO + 1 NC)	6 contacts (4 NO + 2 NC)
Rated current/Maximum peak current	A	6/15	6/15	6/15
Rated switching voltage	V AC (50/60 Hz)	250	250	250
Rated load AC1	VA	1500	1500	1500
Rated load AC15 (230 V AC)	VA	700	700	700
Breaking capacity DC1: 24/110/220 V	A	6/0.6/0.2	6/0.9/0.3	6/0.9/0.3
Breaking capacity DC13: 24 V	A	1	3	5
Minimum switching load	mW (V/mA)	60 (5/5)	60 (5/5)	60 (5/5)
Standard contact material		AgNi + Au	AgSnO ₂	AgSnO ₂ +Au
Coil specification				
Nominal voltage (U _N)	V AC (50/60 Hz)	110...125 - 230...240	110...125 - 230...240	110...125 - 230...240
	V DC	24	24 - 110	24 - 110
Rated power	VA (50 Hz)/W	2.3/1	2.3/1	2.3/1
Operating range	AC	(0.85...1.1)U _N	(0.85...1.1)U _N	(0.85...1.1)U _N
	DC	—	—	—
DC extended range (24 and 110 V only)		(0.7...1.25)U _N	(0.7...1.25)U _N	(0.7...1.25)U _N
Holding voltage	AC/DC	0.45 U _N / 0.45 U _N	0.55 U _N / 0.55 U _N	0.55 U _N / 0.55 U _N
Must drop-out voltage	AC/DC	0.1 U _N / 0.1 U _N	0.1 U _N / 0.1 U _N	0.1 U _N / 0.1 U _N
Technical data				
Mechanical life	cycles	10 · 10 ⁶	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³	100 · 10 ³
Operate/release time	ms	7/11	12/10	12/10
Insulation between coil and contacts (1.2/50 µs)	kV	6	6	6
Dielectric strength between open contacts	V AC	1500	1500	1500
Ambient temperature range	°C	-40...+70*	-40...+70*	-40...+70*
Protection category		IP 20	IP 20	IP 20
Approvals (according to type)				

Light dependent relays



Driver's control console



External/Internal light management

11 Series

Relays for automatic control of lighting according to ambient light level - with separate light sensor

- Low energy consumption
- For the first 3 working cycles the delay time (On and Off) is reduced to zero in order to aid installation
- LED status indication
- SELV separation between contact and supply circuit
- Double insulation between supply and light sensor
- Cadmium free contact material
- Cadmium free light sensor (IC photo diode)
- Box clamp

11.31



* Short term (10 min) +70°C

Contact specification

Contact configuration		1 NO (SPST-NO)
Rated current/Maximum peak current	A	16/30 (120 - 5 ms)
Rated voltage/Maximum switching voltage	V AC	250/400
Rated load AC1	VA	4000
Rated load AC15 (230 V AC)	VA	750
Nominal lamp rating:		
230 V incandescent/halogen	W	2000
fluorescent tubes with electronic ballast	W	1000
fluorescent tubes with electromagnetic ballast	W	750
CFL	W	400
230 V LED	W	400
LV halogen or LED with electronic ballast	W	400
LV halogen or LED with electromagnetic ballast	W	800
Minimum switching load	mW (V/mA)	1000 (10/10)
Standard contact material		AgSnO ₂

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	12...24
	DC	12...24
Rated power	VA (50 Hz)/W	2.5/0.9
Operating range	V AC (50 Hz)	10.2...28.8
	DC	10.2...32

Technical data

Electrical life at rated load in AC1	cycles	100 · 10 ³
Threshold setting:	Standard range lx	1...100
	High range lx	—
Hysteresis (switching Off/On ratio)		1.25
Delay time: switching On/Off	s	1/6
Ambient temperature range	°C	-25...+55*
Protection category: light dependent relay/light sensor		IP 20/IP 54

Approvals (according to type)



Modular contactors

22 Series



Door opening/closing



Mobile device charging & USBs



Ancillary equipment

- Continuous duty for the coil and contacts
- AC/DC silent coil (with varistor protection)
- Protective separation (reinforced insulation) between coil and contacts
- Mechanical and LED indicators
- Compliant with EN 61095:2009
- Auxiliary contact module available, quick-assembly with the main contactor (1 NO + 1 NC and 2 NO versions)
- AgSnO₂ contacts, specifically intended for lamp loads and for high inrush current loads
- Box clamp

22.32.0.xxx.4x20

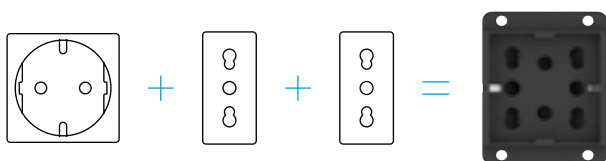


22.34.0.xxx.4x20



Contact specification				
Contact configuration			2 NO, 3 mm*	4 NO, 3 mm*
* Contact gap ≥ 3 mm for NO contacts only; NC contacts ≥ 1.5 mm			(o 1 NO + 1 NC o 2 NC)	(o 3 NO + 1 NC o 2 NO + 2 NC)
Rated current/Maximum peak current	A		25/120	25/120
Rated voltage	V AC		250/440	250/440
Rated load AC1 / AC-7a (per pole @ 250 V)	VA		6250	6250
Rated current AC3 / AC-7b	A		10	10
Rated load AC15 (per pole @ 230 V)	VA		1800	1800
Single-phase motor rating (230 V AC)	kW		1	4
Three-phase motor rating (400 - 440 V AC)	A		15	15
Rated current AC-7c	A		10	10
Nominal lamp rating:	230 V incandescent/halogen	W	2000	2000
	fluorescent tubes with electronic ballast	W	800	800
	fluorescent tubes with electromechanical ballast	W	500	500
	CFL	W	200	200
	230 V LED	W	200	200
	LV halogen or LED with electronic ballast	W	200	200
	LV halogen or LED with electromechanical ballast	W	800	800
Breaking capacity DC1: 24/110/220 V	A		25/5/1	25/5/1
Minimum switching load	mW (V/mA)		1000 (10/10)	1000 (10/10)
Standard contact material			AgSnO ₂	AgSnO ₂
Coil specification				
Nominal voltage (U _N)	V DC/AC (50/60 Hz)		12 - 24 - 48 - 60 - 120 - 230	12 - 24 - 48 - 60 - 120 - 230
Rated power AC/DC	VA (50 Hz)/W		2/2.2	2/2.2
Operating range	DC/AC (50/60 Hz)		(0.8...1.1)U _N	(0.8...1.1)U _N
Holding voltage	DC/AC (50/60 Hz)		0.4 U _N	0.4 U _N
Must drop-out voltage	DC/AC (50/60 Hz)		0.1 U _N	0.1 U _N
Technical data				
Mechanical life AC/DC	cycles		2 · 10 ⁶	2 · 10 ⁶
Electrical life at rated load AC-7a	cycles		30 · 10 ³	30 · 10 ³
Operate/release time	ms		30/20	18/40
Insulation between coil and contacts (1.2/50 µs)	kV		6	6
Ambient temperature range	°C		-20...+50	-20...+50
Protection category			IP 20	IP 20
Approvals (according to type)			CE UK ENE cULus	UL R1A

4b Side | FOR PANELS



Thanks to Side, you can eliminate the need for adaptors. With just two modules, you can now enjoy the functionality of two types of socket. You can use either one Schuko socket, or two bipasso sockets. Side is the socket that does not require a mounting frame to install the socket outlet.

- Panel-mounted power socket with screw terminal connection, 4 mm mounting holes.
- Italian Standard and German Standard



Designed and patented in Italy

4b P40



The universal standard socket from 4box. P40 gives you the functionality of the two most commonly used electrical sockets in a single module: a Schuko socket or a bipasso socket.

- Italian Standard and German Standard



4b USB CA 25W



COMING SOON

USB CA 25W is a USB socket with a 25 W output that can rapidly charge your devices thanks to Fast Charge technology and Power Delivery protocol.

- USB 25 W in a single module
- 25 W Power Delivery 100-230 V ~ 50/60 Hz;
- two ports Type C+A, 5 V DC 3.0 A



4b USB CCA 25W



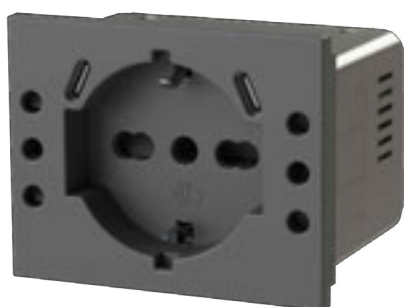
COMING SOON

The most complete solution for USB charging in a single module. USB CCA 25W boasts two USB C Power Delivery ports and one USB A Fast Charge port, providing maximum charging speed and application flexibility.

- USB in a single module
- 100-230 V AC 50/60 Hz
- 3 Power Delivery 25 W ports Type C+C+A 5 V DC 3.0 A



4b USB P503

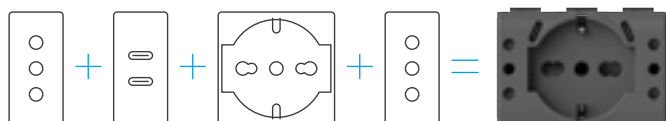


USB P503 is the first universal recessed charging point. 5 different electrical sockets and 2 USB type C outputs in one device.

A single power supply terminal, USB P503 is fitted with a single terminal block for quick and easy installation.

- Italian Standard and German Standard
- two USBs: 230 V AC 50/60 Hz,
two ports Type C+C 5 V DC 3.0 A

Designed by 4box, product manufactured under licence by AVE S.p.A.





Faster

Fast Charge is a technology that allows battery-powered devices to be charged with more power than the typical 5 W and 2 A of most USBs standards. It allows the device's battery to be **recharged faster** by acting on a charger's amperage and voltage, so as to **increase the battery's absorption capacity**.



Safer

Power Delivery is a **charging protocol via USB C** that delivers **more power, faster and more safety** than standard chargers. With **Power Delivery** you can charge your device up to **70% faster** than with standard chargers.

Plugs suitable for use with Side, P40 and USB P503

Italian standard



2P 10 A



2P+E 10 A



2P+E 16 A

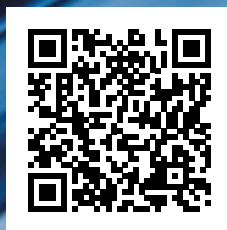
German standard



2P+E

All 4box solutions can be customised to meet the specific requirements of each manufacturer.

RAILWAYS CATALOGUE



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