finder
RELAYING INNOVATION

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.

findernet.com

ABOUT US

finder
RELAYING INNOVATION

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
- 7ST 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

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

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
39T Series
46T Series
55T Series
56T 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

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

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
7ST 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
7ST Series
80T Series
83T Series
86T 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
55T Series
86T 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
46T Series
55T Series
7ST 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

		46.52T	46.61T
* Short term (10 min) +85°C			
Contact specification			
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	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$100 \cdot 10^3$
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)		CE UKCA	

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

		55.34T
* Short term (10 min) +85°C		
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 µs)	kV	4
Dielectric strength between open contacts	V AC	1000
Ambient temperature range	°C	–40…+70*
Environmental protection		RT I
Approvals (according to type)		CE UK CA

Plug-in power relays

56T Series

- Bogie monitoring
- Pantograph management
- Mobile device charging & USBs
- External/Internal light management

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

		56.32T	56.34T
* Short term (10 min) +85°C			
Contact specification			
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			
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			
Mechanical life AC/DC	cycles	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$100 \cdot 10^3$
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 UKCA	

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	$10 \cdot 10^6$	
Electrical life at rated load AC1	cycles	$60 \cdot 10^3$	
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)		CE UK CA	

Timer modules

Door control

Ancillary equipment

86T Series

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

		86.00T	86.30T
		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	**AI:** On-delay **DI:** Interval
* Short term (10 min) +70°C			
Contact specification			
Contact configuration		See 56T series relays	See 46T, 55T, 56T series relays
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)	12…240	12…24
	V DC	12…240	12…24
Rated power AC/DC	W	1.2	0.15
Operating range	V AC (50/60 Hz)	10.2…265	9.6…33.6
	DC	10.2…265	9.6…33.6
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	± 1
Recovery time	ms	≤ 50	≤ 50
Minimun control impulse	ms	50	—
Setting accuracy full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	See 56T series relays	See 46T, 55T and 56T series relays
Ambient temperature range	°C	–25…+55*	–25…+55*
Protection category		IP 20	IP 20
Approvals (according to type)			

Monitoring relays

Air conditioning

Coupler

70T Series

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)

		70.61T	70.62T
* Short term (10 min) +70°C			
Contact specification			
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			
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			
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 UKCA EAC cULus	CE UKCA EAC

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

		80.01T	80.11T
		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	**AI:** On-delay
* Short term (10 min) +70°C			
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	$100 \cdot 10^3$	$100 \cdot 10^3$
Ambient temperature range	°C	–25…+55*	–25…+55*
Protection category		IP 20	IP 20
Approvals (according to type)		CE UKCA EAC cULus	

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

		80.41T	80.61T
		BE: Off-delay with control signal	**BI**: Power off-delay (True off-delay)
* Short term (10 min) +70°C			
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	$100 \cdot 10^3$	$100 \cdot 10^3$
Ambient temperature range	°C	–25…+55*	–25…+55*
Protection category		IP 20	IP 20
Approvals (according to type)		CE UKCA EAC cULus	

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

	83.02T	83.62T
	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)	**BI:** Power off-delay (True off-delay)

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

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	$60 \cdot 10^3$	$100 \cdot 10^3$
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

	83.11T	83.41T	83.91T
	AI: On-delay	**BE:** Off-delay with control signal	**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
* Short term (10 min) +70°C (EN 50155)			
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	$50 \cdot 10^3$	$50 \cdot 10^3$	$50 \cdot 10^3$
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

	7S.12...5110T	7S.14...4220/4310T	7S.16...5420T
* Short term (10 min) +85°C			
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	$10 \cdot 10^6$	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1 cycles	$100 \cdot 10^3$	$100 \cdot 10^3$	$100 \cdot 10^3$
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)	CE UKCA EAC cULus		

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	$100 \cdot 10^3$
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)			CE UK CA EAC

Modular contactors
22 Series

Door opening/closing

Mobile device charging & USBs

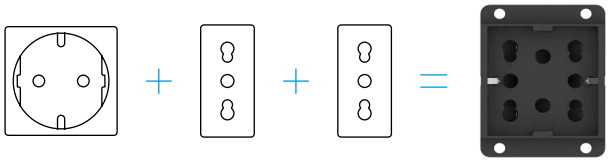
Ancillary equipment

- 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)
- $AgSnO_2$ 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 * Contact gap ≥ 3 mm for NO contacts only; NC contacts ≥ 1.5 mm			2 NO, 3 mm* (o 1 NO + 1 NC o 2 NC)	4 NO, 3 mm* (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	$2 \cdot 10^6$	$2 \cdot 10^6$
Electrical life at rated load AC-7a		cycles	$30 \cdot 10^3$	$30 \cdot 10^3$
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)				

Mobile device charging & USBs

4box 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

BREVETTATO 4box

Designed and patented in Italy

4box 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

USB CA 25W

NEW

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

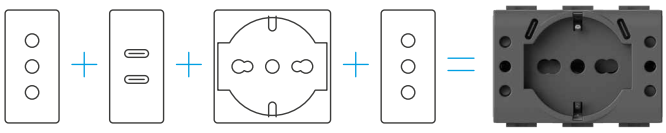
USB CCA 25W

NEW

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

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

For more information, download the complete railway catalogue.

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