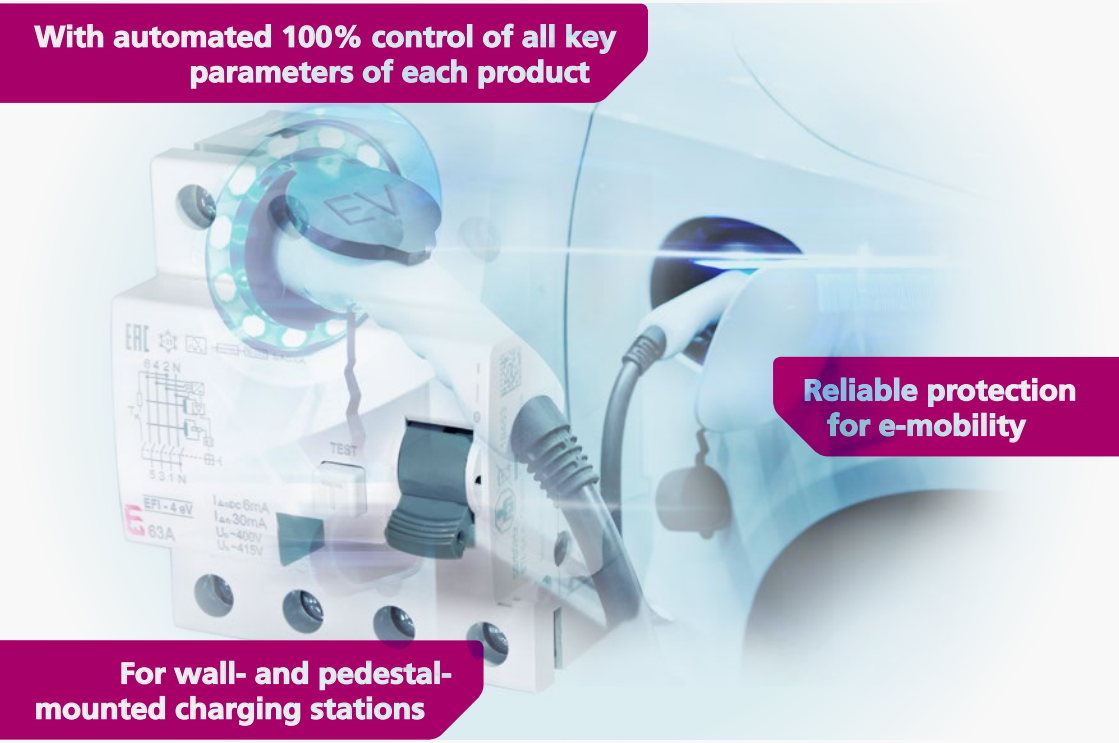
EFI eV

Residual Current Circuit Breakers for Protection of EV Charging Stations

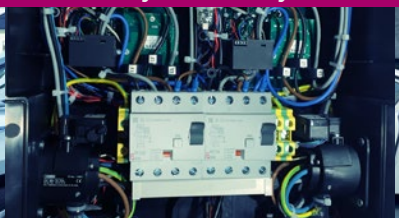
With automated 100% control of all key parameters of each product



Reliable protection for e-mobility

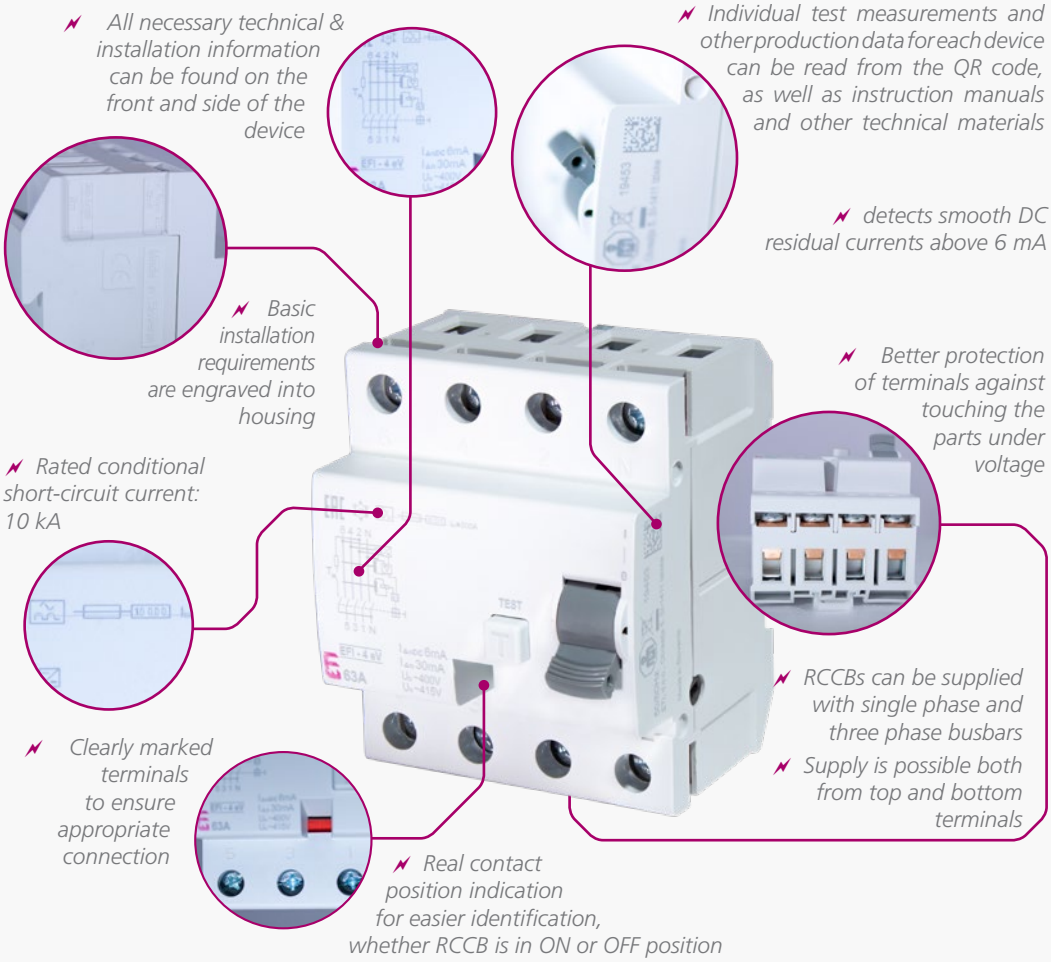
For wall- and pedestal-mounted charging stations

Thinking of safety - so you don't have to



Advantages of EFI eV

- *Meets requirements from standard IEC 60364-7-722 --> Low-Voltage electrical Installations - Requirements for special installations or locations - Supplies for electric vehicles*



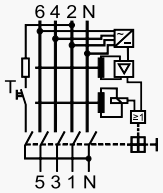
EFI-4 A eV

I_n [A]	$I_{\Delta n}$ [A]	Nr. of poles	A type	Weight [g]	Packaging [pcs]
25	0,03	4	002062632	328	1/27
40	0,03	4	002062633	328	1/27
63	0,03	4	002062634	328	1/27

Technical features

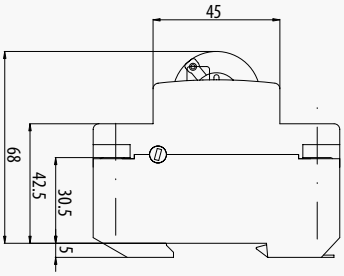
Technical data EFI-4 A eV	
Type	**EFI-4 A eV**
Electrical	
Rated Voltage U_n	400/415V AC
Rated current I_n	25, 40, 63 A
Rated frequency f_n	50/60Hz
Mode of operation	A type functionality : voltage independent DC functionality: voltage dependent
Sensitivity	Alternating, pulsed and smooth direct currents
Rated insulation voltage U_i	440V
Rated impulse withstand voltage (1,2/50µs)	4kV
Electrical isolation	> 4mm contact space
Rated residual operating current	30 mA
DC tripping treshold	6 mA
Rated conditional short-circuit current I_{cn}	10kA
Rated making and breaking capacity I_m	630A
Max back-up fuse for short circuit protection	80A gG
Voltage range test circuit	196 – 253 V AC
Min. operating voltage	80 V
Standards	IEC/EN 61008, IEC 62955:2018
Mechanical Endurance	10.000 cycles
Electrical endurance	2.000 cycles
Shock resistance	acc to IEC/EN 61008-1
Resistance to vibrations acc. To IEC 60068-2-7	5g (50, 60 & 500Hz)
Mechanical	
Frame size	45mm
Device height	68mm (DIN rail acc to EN6071)
Device width	72mm (4 x Module Units)
Degree of protection	IP20
Overvoltage category	III
Upper and lower terminals	open mounted/lift terminals
Terminal capacity	1-25mm^2
Terminal screw	M5 (Pozidrive PZ2)
Terminal torque	max 3Nm
Busbar thickness	0,8 - 2 mm
Operating temperature	-25°C ... +65°C
Storage and transport temperature	-40°C ... +85°C
Resistance to climatic conditions	IEC/EN 61008
Contact position indicator	mechanical red/green
Mounting position	any
Mounting on the rail	35mm acc to EN50022
Supply possibility	top or bottom
Locking device	Locking is possible through button and cover

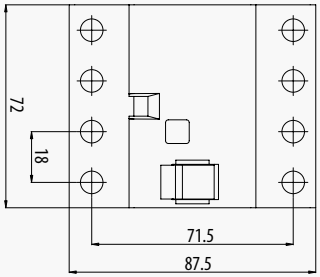
In [A]	Maximum power dissipation EFI-4 A eV P/pole [W]
25	1,33
40	3,12
63	6,62



conductor cross-section [mm²]	Number of single conductors, rigid, single-wire Cu conductor				
	1	2	3	4	5
1,5	✓	✓	✓	✓	×
2,5	✓	✓	✓	×	×
4	✓	✓	✓	×	×
6	✓	✓	×	×	×
10	✓	✓	×	×	×
16	✓	×	×	×	×
25	✓	×	×	×	×

Remark: When you use more than 2 cables you have to be careful how those cables are inserted, due to insure proper presure on each cable



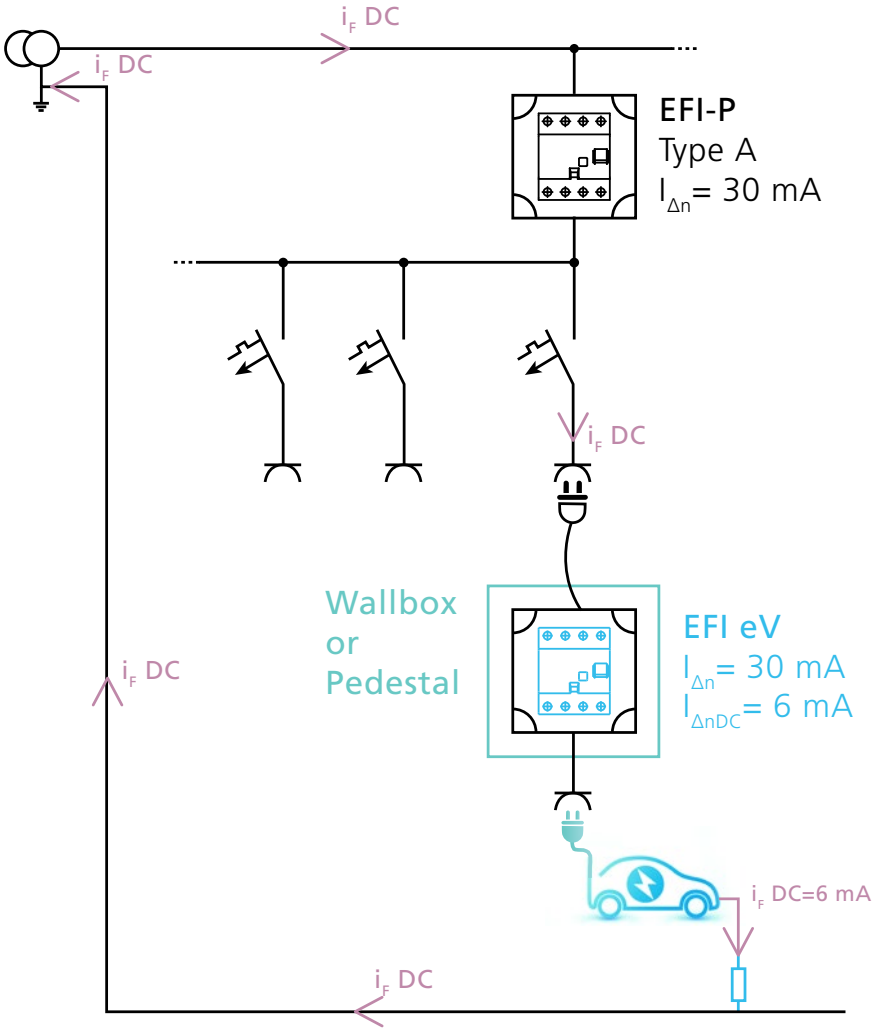


conductor cross-section [mm²]	Number of single conductors, flexible Cu conductors					
	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	×	×	×
10	✓	✓	×	×	×	×
16	✓	×	×	×	×	×
25	✓	×	×	×	×	×

Combination of rigid single-wire and flexible multi-wire Cu conductors is not allowed

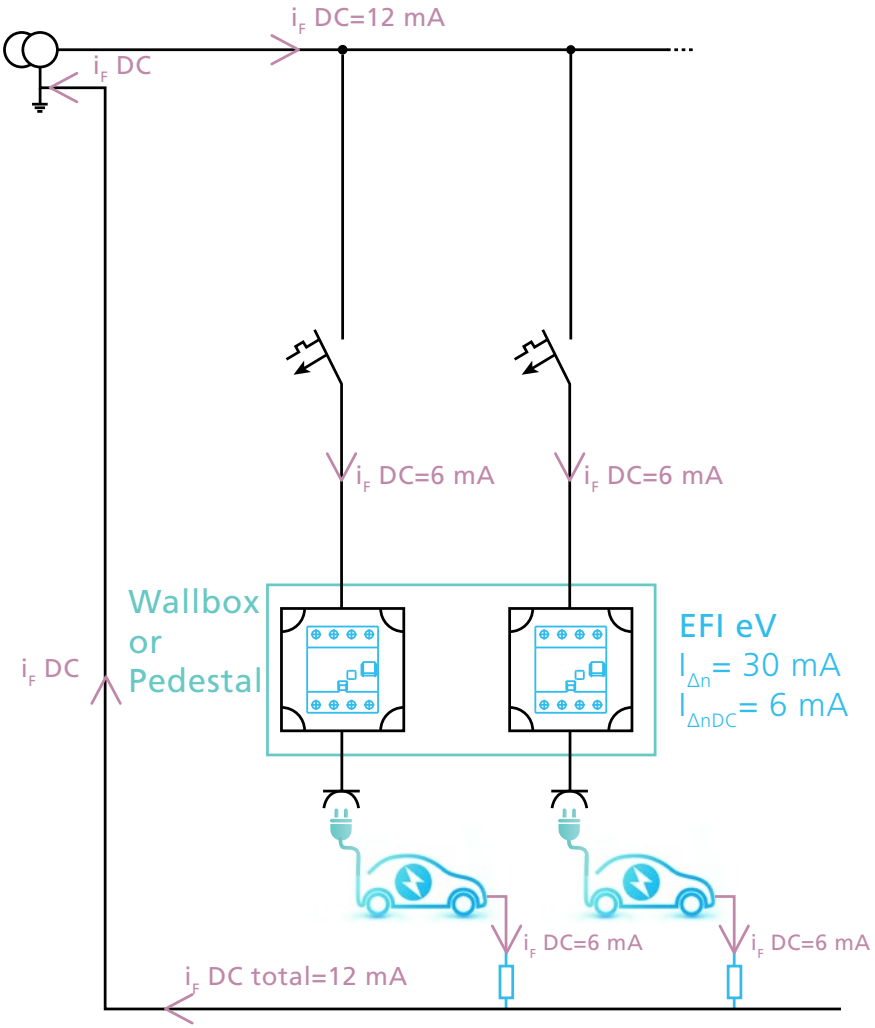
TN-System

If the charging unit is pluged into an existing socket, protected with a Type A RCCB, additional protection against smooth DC residual currents above 6 mA must be provided (IEC 60364-7-722).



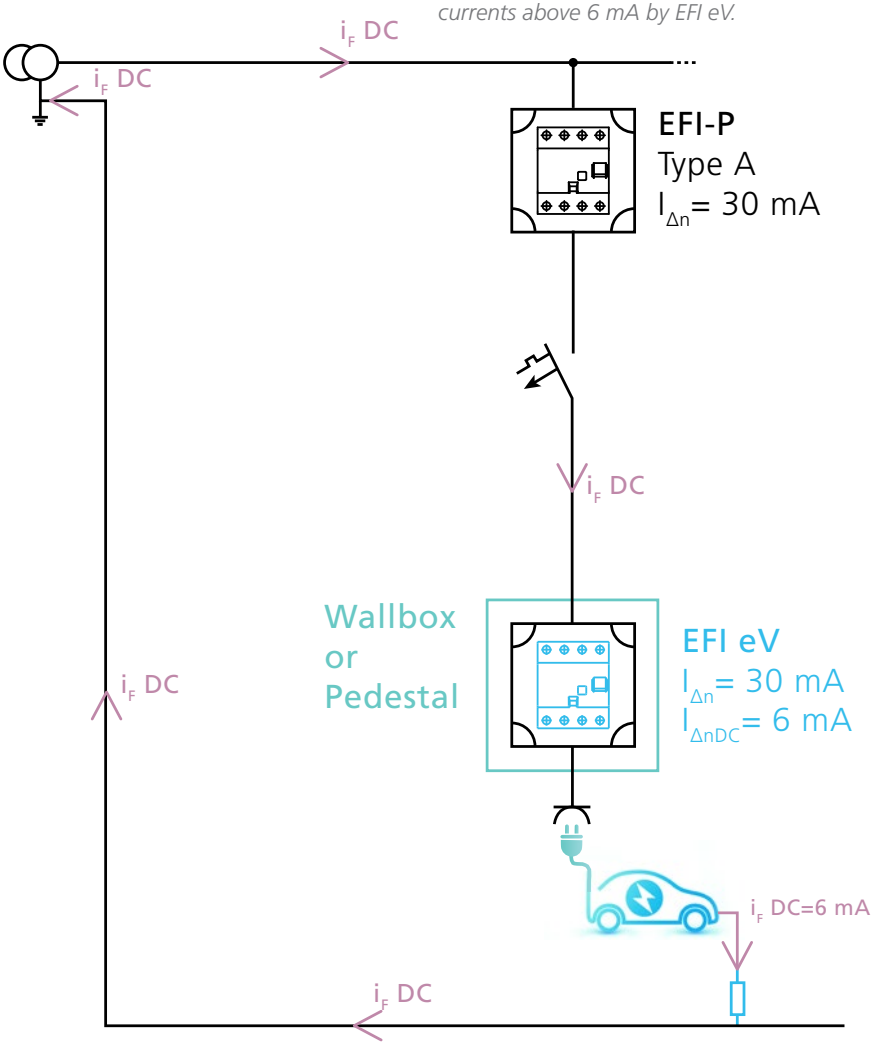
TN-System

If the charging unit has a fixed connection, EFI eV will provide complete protection against residual currents.



TT-System

In these systems, switch-off times must comply to stricter rules so even the charging units with fixed connection require a Type A RCCB, which needs to be additionally protected against smooth DC residual currents above 6 mA by EFI eV.



TT-System

If more charging units are in use, the first RCCB must be a Type B device to protect from the sum of all smooth DC residual currents. Each charging plug socket must also be protected with EFI eV.