



# 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

✦ All necessary technical & installation information can be found on the front and side of the device

✦ Individual test measurements and other production data for each device can be read from the QR code, as well as instruction manuals and other technical materials

✦ detects smooth DC residual currents above 6 mA

✦ Basic installation requirements are engraved into housing

✦ Better protection of terminals against touching the parts under voltage

✦ Rated conditional short-circuit current: 10 kA

✦ RCCBs can be supplied with single phase and three phase busbars

✦ Supply is possible both from top and bottom terminals

✦ Clearly marked terminals to ensure appropriate connection

✦ Real contact position indication for easier identification, whether RCCB is in ON or OFF position

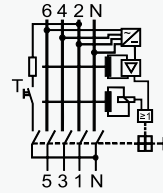
## EFI-4 A eV

$I_n$ [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

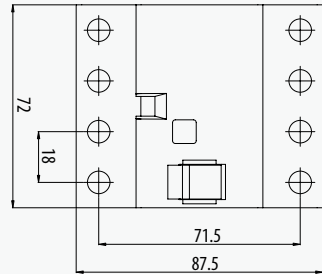
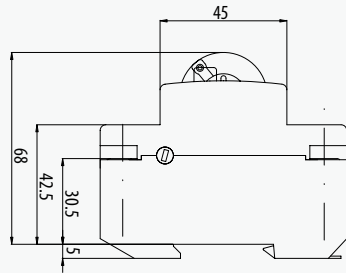
Technical data EFI-4 A eV	
Type	EFI-4 A eV
<b>Electrical</b>	
Rated Voltage $U_n$	400/415V AC
Rated current $I_n$	25, 40, 63 A
Rated frequency $f_n$	50/60Hz
Mode of operation	A type functionality : voltage independent DC functionality: voltage dependent
Sensitivity	Alternating, pulsed and smooth direct currents
Rated insulation voltage $U_i$	440V
Rated impulse withstand voltage (1,2/50 $\mu$ s)	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)
<b>Mechanical</b>	
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 <sup>2</sup>
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 EFl-4 A eV	
	P/pole [W]	
25	1,33	
40	3,12	
63	6,62	



conductor cross-section [mm <sup>2</sup> ]	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 pressure on each cable



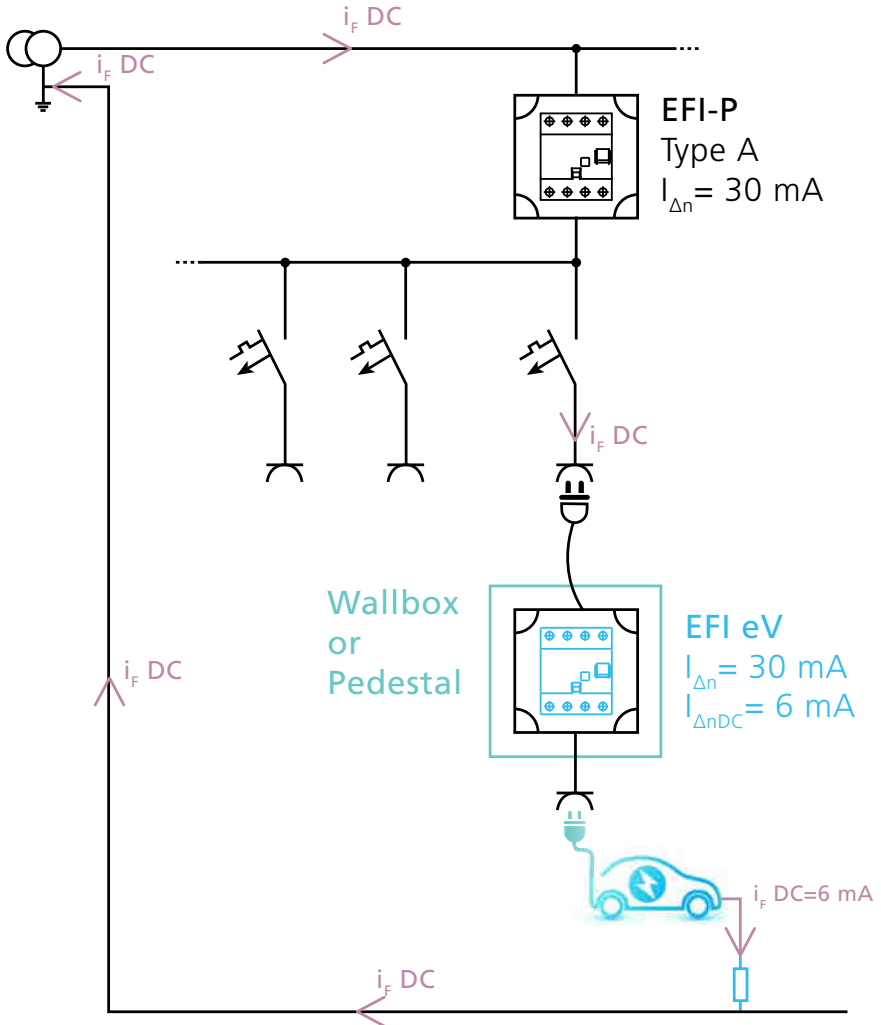
conductor cross-section [mm <sup>2</sup> ]	Number of single conductors, flexible Cu conductors					
	1	2	3	4	5	6
1,5	✓	✓	✓	✓	✓	✓
2,5	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✗	✗	✗
10	✓	✓	✗	✗	✗	✗
16	✓	✗	✗	✗	✗	✗
25	✓	✗	✗	✗	✗	✗

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

# Design recommendations

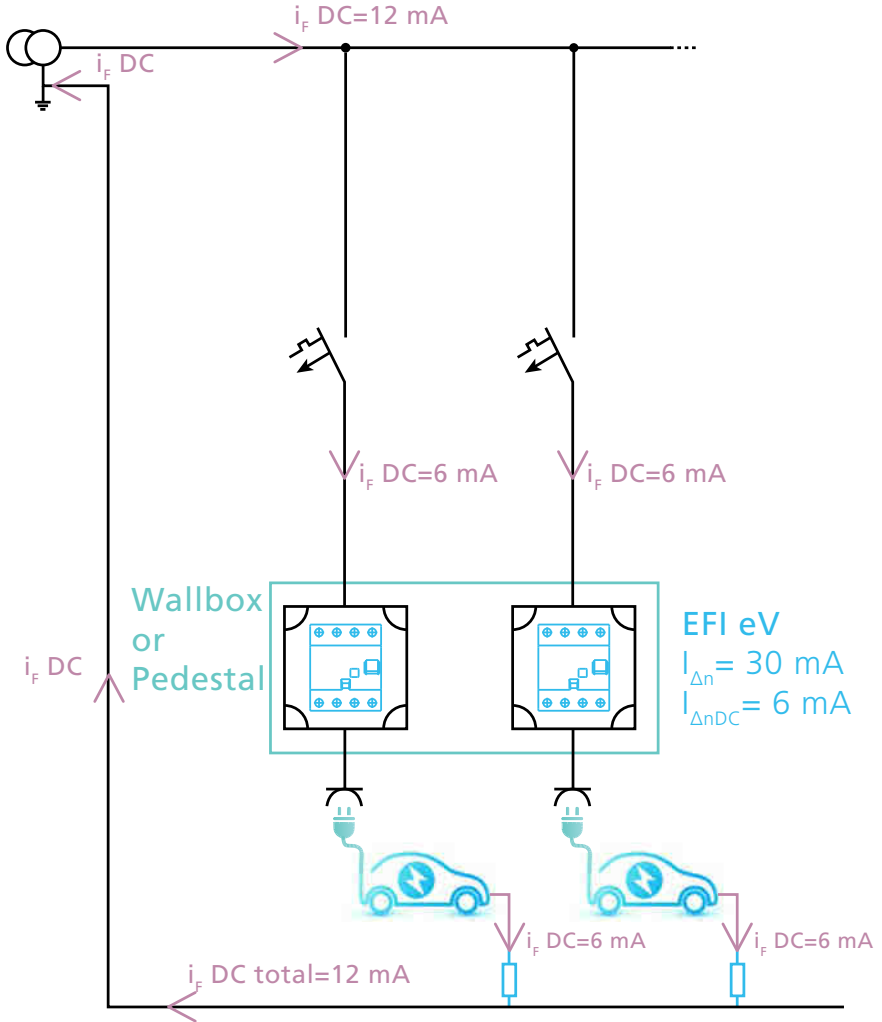
## TN-System

✦ If the charging unit is plugged 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).



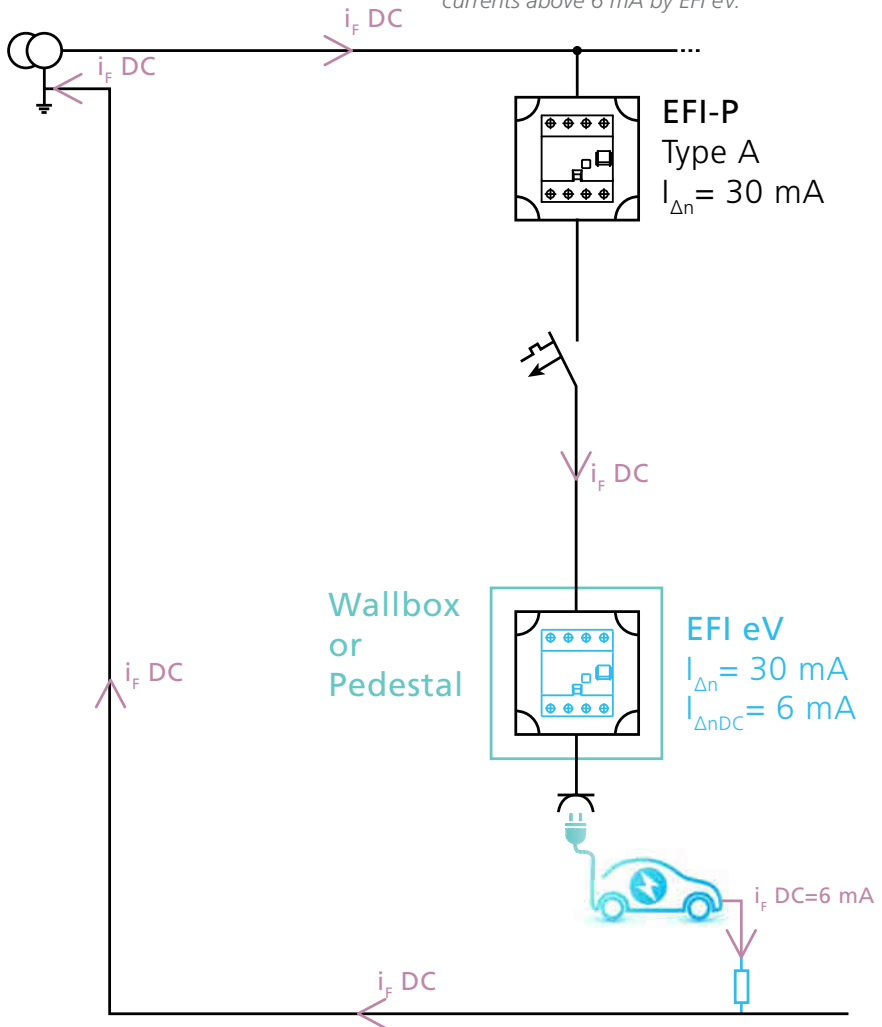
# TN-System

⚡ 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.

