

ES-WFS/RX5

Electronic vehicle immobiliser



1 Important notes



Warning

After opening the housing, open, unprotected printed circuit boards are accessible, on which the connection terminals or operating buttons are located.

Anyone handling such devices or operating the buttons must ensure adequate earthing before doing so in order to prevent damage through electrostatic discharge (ESD).

2 Use

Construction vehicles, boats etc. can be provided with increased protection against theft by means of the installation of the ES-WFS electronic vehicle immobiliser. The vehicles can only be started after being enabled by certain handheld transmitters. The vehicle immobiliser is suitable for vehicles with 12 V or 24 V electrical systems.

The special encoding of the transmitted signal prevents transmitted signals scanned by third parties from enabling a vehicle again.

3 Method of functioning

The ES-WFS/RX5 receiver has three relays for interrupting control circuits in the protected vehicles as well as two relays to command the direction indicator lamps.

When the button is pressed on a handheld transmitter that is registered in the receiver, the working contacts of the control relays close until the button is pressed again. 12 V or 24 V must be applied to the input for switched plus when the vehicle is started. As long as a signal is present here the receiver no longer reacts to commands from the handheld transmitter. When the vehicle is stopped the voltage at the input for switched plus must be switched off. The relay contacts switch back to the resting state automatically approximately 1.5 hours after this, if this has not already been done via the handheld transmitter.

If a receiver recognises a switch-on command (enable vehicle) from a registered handheld transmitter, the relays for the indicator lamps will be energised for approx. 0.5 sec; in the case of a switch-off command (disable vehicle) they will be energised twice.

A maximum of 64 handheld transmitters can be registered in any receiver; each handheld transmitter can be registered in any number of receivers.

Pre-registered handheld transmitters.

A certain number of handheld transmitters can be pre-registered in each receiver in the factory. The serial numbers of these handheld transmitters are determined by the type number. Only handheld transmitters with the same type number as a receiver can switch the relays in this receiver; other handheld transmitters will be ignored. The type number is printed on a yellow label, which is adhered to every handheld transmitter and every receiver.

However, every handheld transmitter can be additionally registered in every receiver up to a maximum of 64 handheld transmitters, including those pre-registered.

Registering a handheld transmitter

After pressing the learn button, the receiver is in learning mode for 5 sec.

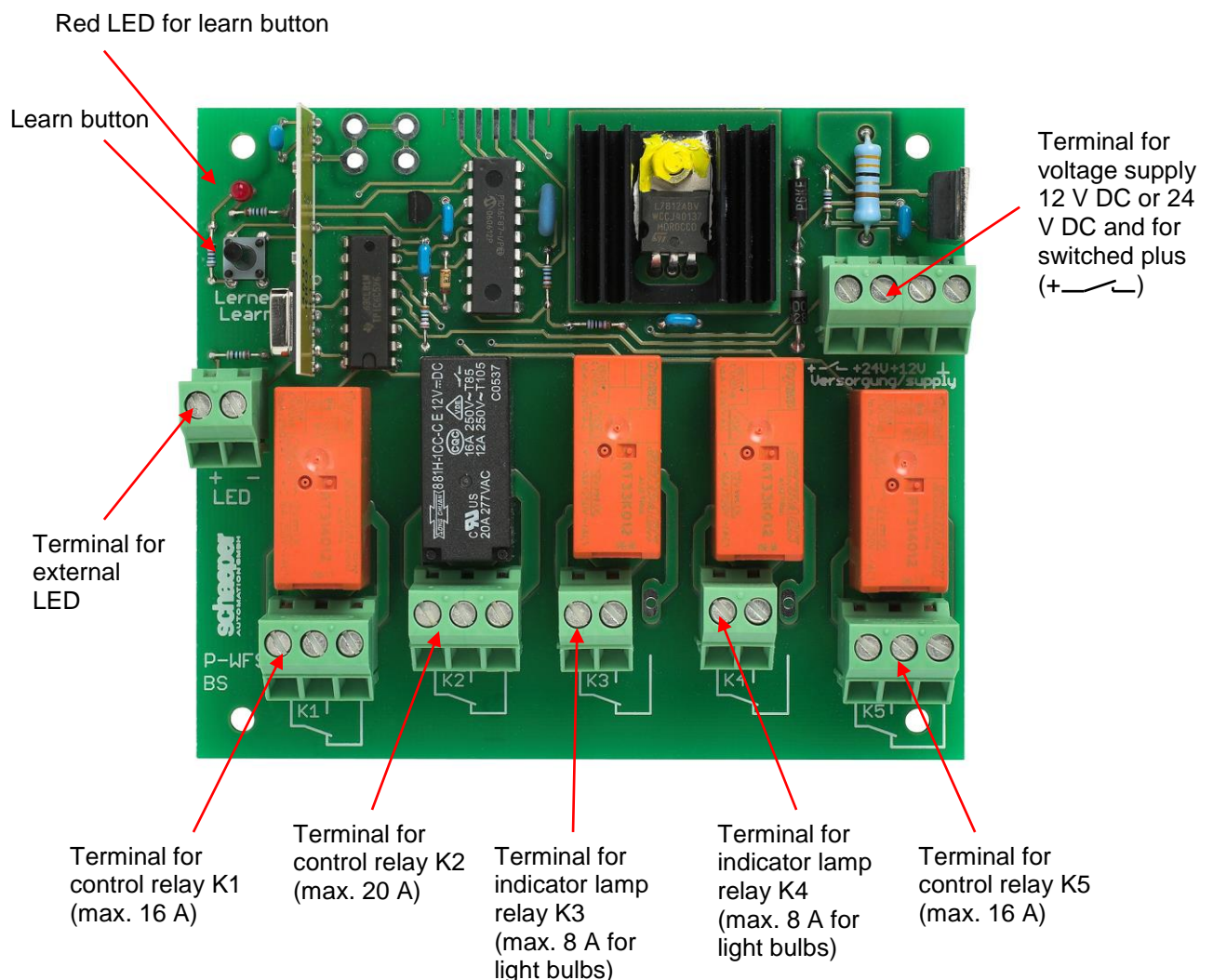
1. Press the learn button above the terminals for the external LED.
2. The red LED lights up.
3. Press the button on the handheld transmitter to be registered, the LED goes out.
4. After the LED goes out, the handheld transmitter is registered.

Deleting a handheld transmitter


It is only possible to completely delete all registered handheld transmitters at once. To do this, press and hold the learn button for 10 seconds until the LED goes out. All handheld transmitters have now been deleted.

This prevents third parties from being able to enable the vehicle, for example if a handheld transmitter is lost. In this case all handheld transmitters in the respective receiver are deleted and all handheld transmitters which should remain valid are subsequently re-registered.

4 Terminals and operating elements




5 Technical data

Voltage-supply	24V:	+15V ... 28V DC (+70°C),	+15V ... 30V DC (+20°C)
	12V:	+10V ... 16V DC (+70°C),	+8,5V ... 18V DC (+20°C)
	 :	Earth (-)	

Dropout voltage for relays K1 to K5: max. 5 V DC

Current Consumption	ready-to-receive	12V: max. 21 mA, typ. 15 mA;	24V: max. 31mA, typ. 20mA
Relay assignment	all relays switched on, typ. 190 mA		
	K1:	Control current circuit, 1 changeover, max. 16 A	
	K2:	Control current circuit, 1 changeover, max. 20 A	
	K3:	Indicator lamp drive, 1 NO contact, max. 16 A (light bulbs max. 8A)	
	K4:	Indicator lamp drive, 1 NO contact, max. 16 A (light bulbs max. 8A)	
	K5:	Control current circuit, 1 changeover, max. 16 A	

All current specifications apply for max. 28 V DC / 250 V AC.

Input	Switched plus (12 V to 24 V): if voltage is present, relays K1 to K5 no longer react		
Switched plus 	to the button being pushed on the handheld transmitter. The relays K1, K2 and K5 return to their resting state approx. 1.5 hours after the voltage at this input is switched off.		
Output LED	For LED display; when control current circuits are interrupted (NO contacts of K1, K2 and K5 are open) this output is pulsed on for 0.25 sec at intervals of 1 sec. For direct connection of an LED without series resistor (anode to +, cathode to -).		
Operating temperature	-25 ... +70°C		
Radio signal range	With rod antenna:	approx. 100 m with free line of sight	
	Without rod antenna:	approx. 4 - 7m with free line of sight	
Frequency	433,92MHz		
Battery	Handheld transmitters contain one 12 V battery type GP23A		
Dimensions	Receiver: L x W x D: 120mm x 122mm x 58mm (excluding cable connector and rod antenna)		
	Handheld transmitter:	L x W x D: 66mm x 36mm x 16mm	
Weight	Receiver:	approx. 430g	
	Handheld transmitter:	approx. 80g	