

# RCL

## Radio remote control



Radio remote controls with handheld transmitter, extremely compact and lightweight, suitable to satisfy the requirements of operators across a broad range of industries.

### FEATURES

- Radio remote controls featuring an extremely compact and handy design, with an high degree of personalization.
- Easy and user-friendly coding featuring over 16 million codes for safety.
- Transmitters with green button to turn receiver on, red button to turn it off and fast flashing LEDs for low battery warning.
- Pushbuttons with tactile dome or rubber membrane with carbon contact.
- IP protection degree: RCL remote controls are classified IP 55 and IP 65 / IP 67.
- Extreme temperature resistance: from -20°C to +55°C.

### OPTIONS

- Available in configurations from 2 to 20 buttons featuring up to **40 programmable functions (version with Shift option)**, ON and OFF button.
- Versions with 2,4 or 6 functions, featuring stainless steel faceplate with vandal proof security buttons, available on request to work in the harshest of environments.
- Hard wired remote controls (from 2 to 20 functions), with a curly cable attached, stretching out from 0.45 m to 4,5 (0,45 - 4,5 m) to connect directly to the receiver, available on request.
- Optional external antennas to be simply added to the SMA fitting to maintains full operating range of 60 / 300 metres in adverse conditions.
- Wide range of high quality solenoids to carry loads that are well in excess of the 15 amp relays.

- **Air Actuator System** designed for sectors which use hydraulic valves with levers for controlling the operative functions (see page 6 for more details).
- Two styles of housing the transmitter when it's not in use: a basic version and one featuring a buzzer and light, used to warn that the transmitter is missing from its holder.
- Possibility to private label the transmitter with a personalized brand (only for large volumes) and to configure the right legends of the buttons.
- Magnets to enable the user to place the transmitter on metal surface and clear plastic IP67 or fabric / clear face covers with lanyard included available on request.
- Receivers featuring **Master Output** available, to give an extra independent control from the trasmitter (see page 6 for more details) and customizable by software for a wide variety of applications (see table on page 6).
- Possibility to control multiple receivers from the same transmitter by software programme and to add switches to the side of teh receiver to cut off power and control the system.
- Customized harness wiring from own wiring diagram and protective potting / ruggedisation of the receiver PCB.

### CERTIFICATIONS

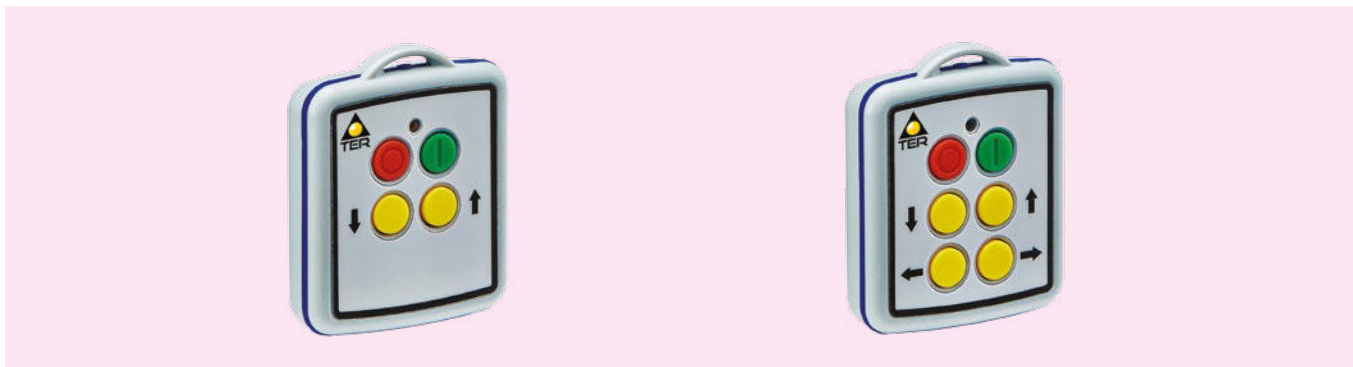
- CE Marking.
- FCC Certification.

## RCL M

Radio remote control suitable for light industrial applications.

Available in configurations from 2 to 4 buttons (2 - 4 functions), RCL M is a compact and ergonomic radio remote control, which fits nicely in the palm of the hand's user.

Facia customization available.



## RCL S

Sturdy, reliable and ergonomic radio remote control, designed for a wide range of industrial applications.

Available in configurations from 2 to 6 buttons (1 - 2 - 4 - 6 functions), RCL S fits firmly in the hand's user thanks to its PVC enclosure.

Customization available for the tactile dome function buttons protected by a wipe clean overlay.



## RCL I

Versatile and sturdy radio remote control, designed for a variety of uses, from automation to towing.

RCL I is available in configurations from 2 to 20 buttons (2 / 4 / 6 / 8 - 10 / 12 - 16 / 18 - 20 / 22+ functions with SHIFT option).

Available in configurations featuring 2, 4 or 6 functions with stainless steel faceplate, featuring vandal proof security buttons, designed to work in the harshest conditions.

Customization available for the tactile dome function buttons protected by a wipe clean overlay.



## CERTIFICATIONS

Conformity to Community Directives	2014/53/EU Radio Equipment Directive (RED)
	2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment - RoHS II
	2004/104/EEC Directive adapting to technical progress Council Directive 72/245/EEC relating to the radio interference (electromagnetic compatibility) of vehicles and amending Directive 70/156/EEC on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers
Conformity to CE Standards	EN 60204-1 Safety of machinery - Electrical equipment of machines
	EN ISO 13849-1 Safety of machinery - Safety-related parts of control systems - General principles for design
	ETSI EN 300 220-2 Short Range Devices (SRD) operating in the frequency range 25 MHz to 1000 MHz; Harmonised Standard for access to radio spectrum for non specific radio equipment
	EN 301 489-1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Common technical requirements - Harmonised Standard for ElectroMagnetic Compatibility
	EN 301 489-3 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz.
Conformity to FCC Standards	EN 301 489-17 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Part 17: Specific conditions for Broadband Data Transmission Systems - Harmonised Standard for ElectroMagnetic Compatibility
	FCC CFR 47 Part 15.109
Conformity to IC Standards	ICES-003 Issue 6 - 433.050MHz to 434.790MHz
	ICES-003 Issue 6 - 902.025MHz to 927.975MHz
Markings and homologations	CE FCC

## TECHNICAL SPECIFICATIONS OF THE TRANSMITTER UNIT

Type	RCL M	RCL S	RCL I
Operational ambient temperature	-25°C/+55°C	-25°C/+55°C	-25°C/+55°C
IP protection degree	IP 65 / IP 67	IP 55	IP 65 / IP 67
Pushbuttons configuration	1 power on pushbutton + 1 power off pushbutton + 2 or 4 functions pushbuttons	1 power on pushbutton + 1 power off pushbutton	1 power on pushbutton + 1 power off pushbutton + 2 / 4 / 6 / 8 - 10 / 12 - 16 / 18 - 20 functions pushbuttons
	-	1 power on pushbutton + 1 power off pushbutton + 2 / 4 / 6 functions pushbuttons	Shift option: up to 40 functions
	-	-	Stainless option: 1 power on pushbutton + 1 power off pushbutton + 2 / 4 / 6 functions pushbuttons
Type of pushbuttons	Rubber membrane with carbon contact		Tactile dome
Quiescent current draw	4 µA		15 µA
Operating current draw	20 mA		24 mA
Protection against reverse polarity	Yes		
Registration codes	> 16 million		
Range	45 m (from the receiver, when driving a momentary output, without signal drop out) 150 m optional	60 m (from the receiver, when driving a momentary output, without signal drop out) 300 m optional	
Transmitted Power	1 mW		
Power supply	2 x 1.5 V battery (AAA)	1 x 9 V battery (PP9)	4 x 1.5 V battery (AAA)

## TRANSMITTER UNITS OVERALL DIMENSIONS

### RCL M



**2 functions**  
63.4 x 72.4 x 25.5 mm



**4 functions**  
63.4 x 72.4 x 25.5 mm

### RCL S



**1 function**  
61 x 104.5 x 9 mm



**2 functions**  
61 x 104.5 x 9 mm



**4 functions**  
61 x 104.5 x 9 mm



**6 functions**  
61 x 104.5 x 9 mm

### RCL I



**2 - 4 functions**  
82 x 150 x 35.6 mm



**6 functions**  
82 x 150 x 35.6 mm



**8 - 10 functions**  
82 x 185 x 35.6 mm



**12 - 16 functions**  
82 x 245 x 35.6 mm



**18 - 20 functions**  
82 x 285 x 35.6 mm



## POSSIBLE TRANSMITTER - RECEIVER COMBINATIONS

Transmitters	Receivers			
	Mini RX	Standard 15-amp FET's	Deep 15-amp FET's	Keypad
RCL M	X	X	X	X
RCL S	X	X	X	X
RCL I			X	X

## TECHNICAL SPECIFICATIONS OF THE RECEIVER UNITS

Type	Mini RX	Standard 15-amp FET's	Deep 15-amp FET's	Keypad
Operational ambient temperature	-40°C/+80°C			
IP protection degree	IP 65 / IP 66			
Functions	2	2 / 4 / 6	10 / 16 / 20	2 / 4 / 6
Frequency	433.050 ÷ 434.790 MHz			
Modulation	2-GFSK. Gaussian Frequency Shift Keying			
Sensitivity	-113.7dBm ÷ -81.3dBm			
Antenna impedance	50 Ohm			
Power supply	12/24V DC (Nominal)			
Power consumption	0.372 W at 12 V and 0.408 W at 24 V			
Antenna	Internal – ¼ wave wire --- SMA Connector fitted for extension			
Standby current consumption	31mA 12 V / 17 mA 24 V			
Relays	7.5A rated Mosfet (Positive Switching)	10A rated Mosfet (Positive Switching)		
Housing material	Clear PVC (Lid) – Black ABS (Base)	Clear PC/FR V0 and UV stabilised (Lid) – Black PC V0 and UV stabilised (Base)		

## RECEIVER UNITS OVERALL DIMENSIONS



**Mini RX**  
119.4 x 89 x 40.6 mm



**Standard 15-amp FET's**  
149.9 x 119.4 x 50.8 mm



**Keypad**  
149.9 x 119.4 x 50.8 mm



**Deep 15-amp FET's**  
149.9 x 119.4 x 70 mm

## PERSONALIZATION AVAILABLE OF THE RECEIVERS

All the receivers are set up in the factory with momentary functions, horizontal interlocks and a 30 minutes automatic timeout. These settings can be modified by software for a wide variety of applications.

Option	Function
Timed limits	Possibility to set the receivers to operate with a variety of timings (i.e by delaying a function to activate after the transmitter function button has been pressed)
Latching	When a function is being operated for an extended period, possibility for the button to stay on until it is pressed again to turn off.
Horizontal interlocking removal	Possibility to remove the horizontal interlocking that prevent from activating an output on function two when function one is operational
Master output removal	Possibility to have the Master operational on certain functiones and not on others
Control multiple receiver	Possibility to control multiple receivers from the same transmitter

## OPTIONAL OF THE RECEIVER UNITS

Option
Lateral switches to cut off power and control the system
Customized harness wiring from own wiring diagram
Protective potting / reggedisation of the receiver PCB

## RECEIVER WITH MASTER OUTPUT

The Master Output gives an extra independent control from the transmitter.

Often used for electro hydraulic power packs, clutch pumps, dump valves, it is factory configured in a continuous mode, allowing the receiver to be active all the time after pressing the Start button on the transmitter.

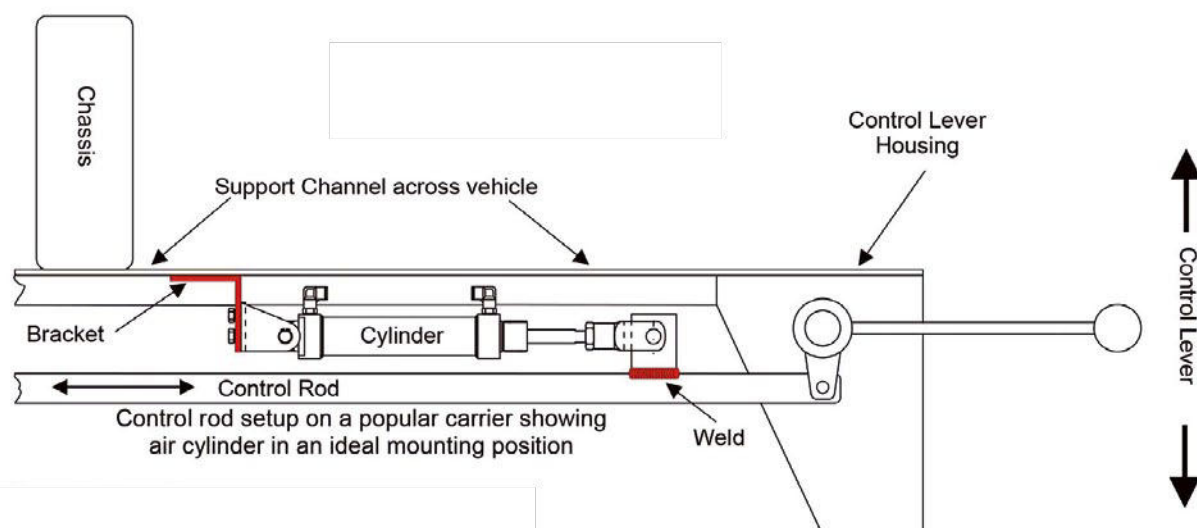
It can also be configured as parallel mode, where it turn on/off as the function buttons are operated, or removed from operation on a function by function basis.

## ACTUATOR SYSTEM

Radio system control designed for trucks where the only means of controlling the vehicle functions are by hydraulic valves with levers.

The Air Actuator System features electrically operated air valves to control the actuator fitted above the lever control rod, with one end attached to the rod and the other end to the chassis.

The air supply is controlled through the air valves (see fitting drawing) which, in turn, are switched by the radio remote transmitter / receiver system.



## STANDARD SYSTEMS - 15 AMP DC

Code	Receiver type	Transmitter type
TERL92000	2 Function FET Receiver	RCL M No Master
TERL92002	2 Function FET Receiver	RCL M
TERL 92004	4 Function FET Receiver	RCL M
TERL92100	2 Function FET Receiver	RCL S No Master
TERL92101	1 Function FET Receiver	RCL S
TERL92102	2 Function FET Receiver	RCL S
TERL92104	4 Function FET Receiver	RCL S
TERL92106	6 Function FET Receiver	RCL S
TERL92108	8 Function FET Receiver	RCL S
TERL92200	2 Function FET Receiver	RCL I No Master
TERL92202	2 Function FET Receiver	RCL I
TERL92204	4 Function FET Receiver	RCL I
TERL92206	6 Function FET Receiver	RCL I
TERL92210	10 Function FET Receiver	RCL I
TERL92216	16 Function FET Receiver	RCL I
TERL92220	20 Function FET Receiver	RCL I
TERL92S02	2 Function FET Receiver	RCL I / Stainless Keypad
TERL92S04	4 Function FET Receiver	RCL I / Stainless Keypad
TERL92S06	6 Function FET Receiver	RCL I / Stainless Keypad

## STANDARD SYSTEMS - 15 AMP DC - EXTERNAL RECEIVER KEYPAD

Code	Receiver type	Transmitter type
TERL92000K	2 Function FET Receiver w/ External Keypad	RCL M No Master
TERL92002K	2 Function FET Receiver w/ External Keypad	RCL M
TERL92004K	4 Function FET Receiver w/ External Keypad	RCL M
TERL92100K	2 Function FET Receiver w/ External Keypad	RCL S No Master
TERL92101K	1 Function FET Receiver w/ External Keypad	RCL S
TERL92102K	2 Function FET Receiver w/ External Keypad	RCL S
TERL92104K	4 Function FET Receiver w/ External Keypad	RCL S
TERL92106K	6 Function FET Receiver w/ External Keypad	RCL S
TERL92108K	8 Function FET Receiver w/ External Keypad	RCL S
TERL92200K	2 Function FET Receiver w/ External Keypad	RCL I No Master
TERL92202K	2 Function FET Receiver w/ External Keypad	RCL I
TERL92204K	4 Function FET Receiver w/ External Keypad	RCL I
TERL92206K	6 Function FET Receiver w/ External Keypad	RCL I
TERL92208K	8 Function FET Receiver w/ External Keypad	RCL I
TERL92S02K	2 Function FET Receiver w/ External Keypad	RCL I / Stainless Keypad
TERL92S04K	4 Function FET Receiver w/ External Keypad	RCL I / Stainless Keypad
TERL92S06K	6 Function FET Receiver w/ External Keypad	RCL I / Stainless Keypad

## STANDARD SYSTEMS - 15 AMP DC - SHIFTED FUNCTIONS

Code	Receiver type	Transmitter type
TERL92320	10 & 10 Function FET Receiver	10 Function RCL I Shift
TERL92322	20 & 2 Function FET Receiver	20 Function RCL I Shift
TERL92324	20 & 4 Function FET Receiver	20 Function RCL I Shift
TERL92326	20 & 6 Function FET Receiver	20 Function RCL I Shift
TERL92330	20 & 10 Function FET Receiver	20 Function RCL I Shift
TERL92332	16 & 16 Function FET Receiver	16 Function RCL I Shift
TERL92336	20 & 16 Function FET Receiver	20 Function RCL I Shift
TERL92340	20 & 20 Function FET Receiver	20 Function RCL I Shift

## TRANSMITTER ONLY

Code	No. of function	Transmitter type
TERL90002TX	2	RCL M
TERL90004TX	4	RCL M
TERL92101TX	1	RCL S
TERL92102TX	2	RCL S
TERL92104TX	4	RCL S
TERL92106TX	6	RCL S
TERL92108TX	8	RCL S
TERL92202TX	2	RCL I
TERL92204TX	4	RCL I
TERL92206TX	6	RCL I
TERL92210TX	10	RCL I
TERL92216TX	16	RCL I
TERL92220TX	20	RCL I
TERL92S06TX	6	RCL I with Stainless Keypad (HD)
TERL92312TX	6	RCL I with Shift function
TERL92320TX	10	RCL I with Shift function
TERL92332TX	16	RCL I with Shift function
TERL92340TX	20	RCL I with Shift function

## RECEIVER ONLY - 15 AMP DC

Code	Receiver type
TERL9200RX	2 Function FET Receiver - No Master
TERL9201RX	1 Function FET Receiver
TERL9202RX	2 Function FET Receiver
TERL9204RX	4 Function FET Receiver
TERL9206RX	6 Function FET Receiver
TERL9210RX	10 Function FET Receiver
TERL9216RX	16 Function FET Receiver
TERL9220RX	20 Function FET Receiver



## RECEIVER ONLY - 3 AMP DC

Code	Receiver type
TERL9200RXK	2 Function FET Receiver with Keypad - No Master
TERL9201RXK	1 Function FET Receiver with Keypad
TERL9202RXK	2 Function FET Receiver with Keypad
TERL9204RXK	4 Function FET Receiver with Keypad
TERL9206RXK	6 Function FET Receiver with Keypad
TERL9208RXK	8 Function FET Receiver with Keypad
TERL11RX00	2 Function Mini Receiver - No Master
TERL11RX02	2 Function Mini Receiver
TERL11RX04	4 Function Mini Receiver

## STANDARD SYSTEMS - 3 AMP DC

Code	Receiver type	Transmitter type
TERL110000	2 Function Mini Receiver	RCL M No Master
TERL110002	2 Function Mini Receiver	RCL M
TERL110004	4 Function Mini Receiver	RCL M
TERL111000	2 Function Mini Receiver	RCL S No Master
TERL111002	2 Function Mini Receiver	RCL S
TERL111004	4 Function Mini Receiver	RCL S
TERL112000	2 Function Mini Receiver	RCL I No Master
TERL112002	2 Function Mini Receiver	RCL I
TERL112004	4 Function Mini Receiver	RCL I

## WIRED TRANSMITTERS

Code	No. of function	Transmitter type
TERLWR2204	4	RCL I Wired Remote, with 7m (25ft) curly cable
TERLWR2206	6	RCL I Wired Remote, with 7m (25ft) curly cable
TERLWR2310	10	RCL I Wired Remote, with 7m (25ft) curly cable
TERLWR2316	16	RCL I Wired Remote, with 7m (25ft) curly cable
TERLWR2320	20	RCL I Wired Remote, with 7m (25ft) curly cable

## ACCESSORIES

Category	Code	Description
Transmitter Covers	TERLAC9801	Bumper, Silicone + Lanyard - for RCL S Transmitters
	TERLAC9802	Cover Clear IP 67 + Lanyard - for RCL S Transmitters
	TERLAC9804	Cover Fabric, ZIP + Lanyard - for RCL S Transmitters
	TERLAC9805	Cover Fabric + Lanyard - for 2, 4, 6 Function RCL I Transmitters
	TERLAC9805M	Cover Fabric + Lanyard - for 2, 4, 6 Function RCL I Transmitters with Magnets
	TERLAC9806	Cover Fabric + Lanyard - for 10 Function RCL I Transmitters
	TERLAC9806M	Cover Fabric + Lanyard - for 10 Function RCL I Transmitters with Magnets
	TERLAC9807	Cover Fabric + Lanyard - for 16 Function RCL I Transmitters
	TERLAC9808	Cover Fabric + Lanyard - for 20 Function RCL I Transmitters

Category	Code	Description
Transmitter Covers	TERLAC9810	Holder - RCL M Transmitter - 2/4/6/8 Function.
	TERLAC9812	Holder - RCL I Transmitter
	TERLAC9813	Holder Electronic, with LED and Buzzer - RCL I Transmitter
	TERLAC9814	Holder - RCL I Transmitters - 10/12/16/20 Functions
	TERLAC9815	Holder - RCL S Transmitters
	TERLAC9816	Holder Electronic, with Buzzer - RCL S Transmitters
Aerial Kits	TERLAC9860	Standard Aerial - Assembly 0.4 m (1.40 ft)
	TERLAC9861	Standard Aerial - Assembly 1 m (3.25 ft)
	TERLAC9862	Standard Aerial - Assembly 1.65 m (5.40 ft)
	TERLAC9863	Standard Aerial - Assembly 3 m (10.00 ft)
	TERLAC9865	Standard Aerial - Assembly 5 m (10.00 ft)
	TERLAC9869	Standard Aerial - Assembly 9 m (29.25 ft)
Potting	TERLAC9871	Potting for Ruggedization - Mini Receivers
	TERLAC9872	Potting for Ruggedization - Standard & Deep Receivers
Actuators - Spare Parts	TERLAC9918	Valve only 12 Volt - 2 way
	TERLAC9920	Actuator only - with elbows and fixing brackets
	TERLAC9930	Actus Actuator - No Radio - Actuator Only
Software Configuration	TERLCONFIG1	Software Configuration - 2, 4, 6 Function Receivers
	TERLCONFIG2	Software Configuration - 10, 16, 20 Function Receivers
	TERLCONFIG3	Software Configuration - All Extend/Shift Receivers
	TERLCONFIGC	Software Config Cable
Solenoid	TERLAC9820	Solenoid 12 Volt, Emergency Disconnect
	TERLAC9821	Solenoid 24 Volt, Emergency Disconnect
	TERLAC9822	Solenoid 12 Volt, DC Motor reversing. Standard Duty
	TERLAC9823	Solenoid 24 Volt, DC Motor reversing. Standard Duty
	TERLAC9824	Solenoid 12 Volt, DC Motor reversing. Heavy Duty
	TERLAC9825	Solenoid 24 Volt, DC Motor reversing. Heavy Duty
Relay	TERLAC9826	Relay 12 Volt - Automotive Cube
	TERLAC9827	Relay 24 Volt - Automotive Cube
	TERLAC9828	Relay 12 Volt - Motor reversing
	TERLAC9829	Relay 24 Volt - Motor reversing
Filter	TERLAC9831	DC Power Filter Kit 15 Amp
Switch	TERLAC9832	Switch with Sealing Hood - ON/OFF Single Pole (S35)
	TERLAC9833	Switch with Sealing Hood - ON/ON Double Pole (S37)
	TERLAC9834	Switch with Sealing Hood - MOM/OFF/MOM Double Pole (S39)