

# TK800 Series – Industrial GPRS / UMTS / LTE Router

*The new generation*



### LTE with 100 Mbps

LTE standard for high transmission rates and good network coverage in sparsely populated areas



### Extreme robust

High quality metal housing and -25 ° C to + 70 ° C operating temperature range for demanding and harsh environments



### Dynamic Multipoint VPN

GRE, L2TP, IPSec, DMVPN, OpenVPN  
Simple and fast configuration of thousands of routers thanks DMVPN



### MIMO / Diversity

Two SMA (f) antenna connectors for better reception and low susceptibility to faults even with difficult conditions



### Dual SIM

High availability with the use of SIM cards of two different network operators thanks to fallback



### Command Line Interface

In addition to the web interface, the router can be configured through a lean command line



### I/O support

A digital input and a relay output for connections to sensors and actuators (only for TK800 with additional EX)



### Serial Interfaces

Each one RS-232 and RS-485 interface for connecting serial devices (only for TK800 with additional EX)



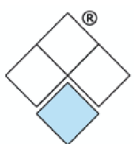
### Five Ethernet Ports

Up to five RJ45 Ethernet ports. One of them as WAN port usable (Static IP, DHCP, PPPoE)



### EMC

High electromagnetic compatibility according to 61000-4 for use in high-stress environments



SARTELCO® SISTEMI SRL

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## TK800 Series – Industrial GPRS / UMTS / LTE Router

## Technical Details

	TK802U	TK802U-EX0	TK802L	TK802L-EX0	TK805L-EX0
<b>CELLULAR FEATURES</b>					
Type	UMTS router		LTE router		
Chipset	Cinterion PHS8		Huawei ME909		
2G standard	GSM, GPRS		GSM, GPRS		
3G standard	UMTS, HSDPA, HSUPA, HSPA		UMTS, HSDPA, HSUPA, HSPA+		
4G standard	-		LTE		
Frequency GSM/ GPRS	850/900/1800/1900 MHz		850/900/1800/1900 MHz		
Frequency UMTS	850/900/1800/1900/2100 MHz		850/900/1800/1900/2100 MHz		
Frequency LTE	-		800 / 1800 / 2600 MHz		
Download (max)	14.4 Mbps		100 Mbps		
Upload (max)	5.76 Mbps		50 Mbps		
Authentication	CHAP/PAP/MS-CHAP/MS-CHAP2				
Cellular antenna connector	2x SMA (f)				
APN functions	APN (Access Point Name), VPDN (Virtual Private Dialup Network, IP VPN of the network operator)				
Dial On Demand	Always online or dial, SMS or local data transfer				
SMS functions	Reboot and status SMS				
<b>ETHERNET INTERFACE</b>					
Connector	2x RJ45 port 10/100TX (1 of them WAN)			5x RJ45 port 10/100TX (1 of them WAN)	
WAN-Port	1 Port			1 Port	
VLAN	-			dot1q	
<b>SERIAL INTERFACE</b>					
Amount	-	2	-	2	
Type	-	RS-232, RS-485	-	RS-232, RS-485	
Serial interface	-	TXD, RXD, GND, A(RS-485+), B(RS-485-)	-	TXD, RXD, GND, A(RS-485+), B(RS-485-)	
Connector	-	Terminal blocks 5-pin (m)	-	Terminal blocks 5-pin (m)	
Baud rate	-	1200 - 115200 bps	-	1200 - 115200 bps	
Additional protocols	-	Transparent TCP, Virtual COM, Modbus TCP / RTU	-	Transparent TCP, Virtual COM, Modbus TCP / RTU	
<b>ADDITIONAL INTERFACES</b>					
Console port	1x RJ45 Console port (RS-232)				
I/Os	-	1x Digital Input, 1x Relay Output	-	1x Digital Input, 1x Relay Output	
SIM card slot	2				
<b>SOFTWARE CHARACTERISTICS</b>					
Configuration	Webbrowser, Telnet, SSH and Serial port				
Updates	Webbrowser, Serial port, TFTP, FTP				
<b>ADVANCED FUNCTIONS</b>					
Watchdog	Software and hardware watchdog				
LED	LED indicators for the signal strength, 8 status LEDs: POWER, STATUS, WARN, ERROR, Modem, 2x SIM, VPN				

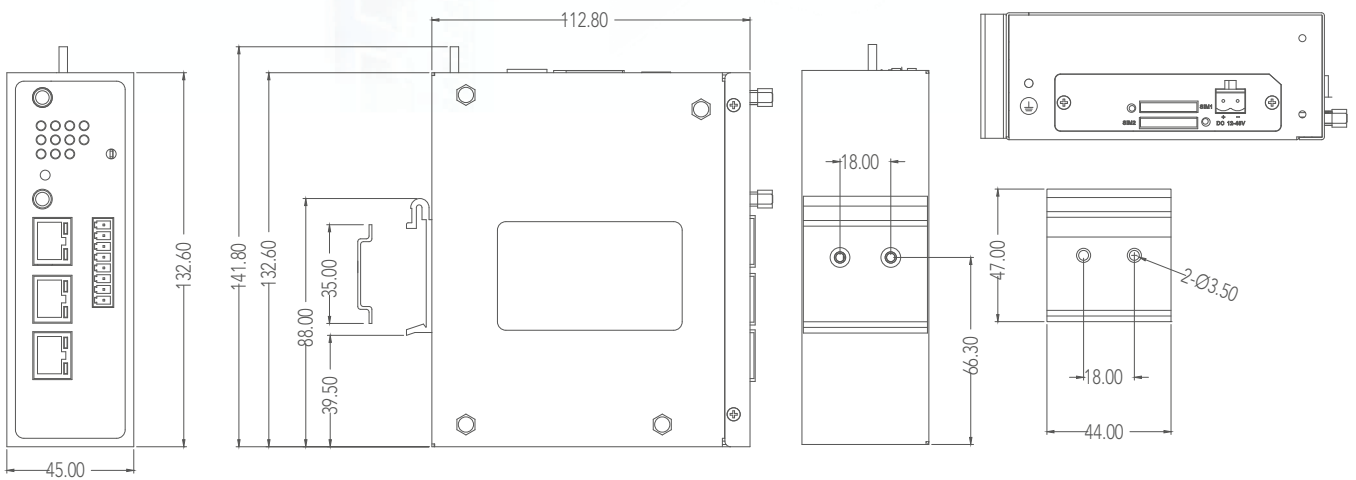
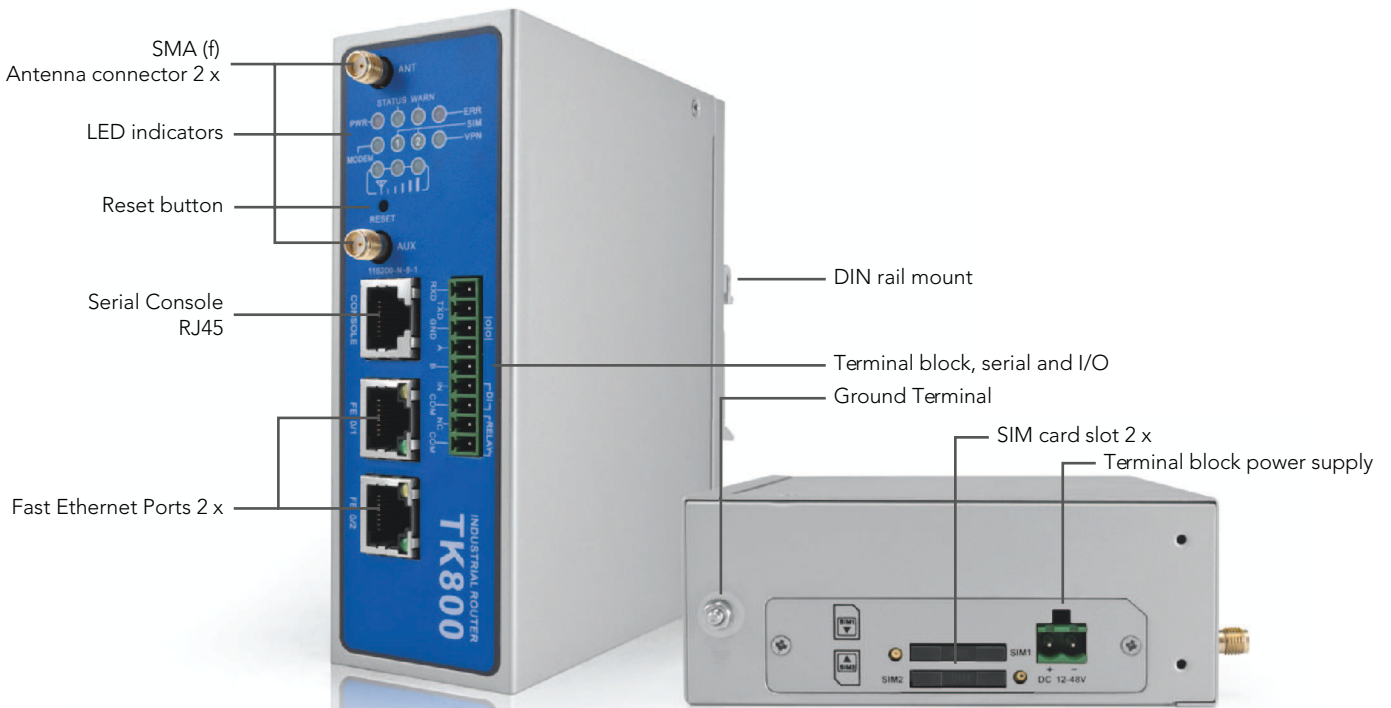
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	TK802U	TK802U-EX0	TK802L	TK802L-EX0	TK805L-EX0
<b>NETWORK CHARACTERISTICS</b>					
Routing	Static routes and dynamic routes with RIP or OSPF				
Network protocols	ICMP, TCP, IP, UDP, DHCP, SNTP, DNS, HTTP, HTTPS, Telnet, ARP, VRRP, PPP, SSH				
Connection inspection	PPP LCP echo and ICMP keep alive and IP SLA / tracking for checking connections				
NAT and PAT	Network Address Translation (NAT) and Port Address Translation (PAT)				
DDNS (DynDNS)	Supports Dynamic DNS				
VRRP	Automatically switch to slave router if the master router fails				
IPsec	Tunnel mode, Transport mode, DMVPN				
OpenVPN	Client				
GRE	Point-to-Point				
VPN authentication	Preshared keys, digital certificates				
Firewall	Stateful Packet Inspection (SPI), ACLs				
Access control	ACLs, RADIUS, TACACS+, LDAP				
Realtime clock	Provides the system with the current time (NTP)				
<b>POWER SUPPLY</b>					
Power supply	12 - 48 V DC				
Connector	Terminal blocks 2-pin (m)				
Power consumption standby	2.6 W			3.8 W	
Power consumption aktiv	3.6 W			5.3 W	
<b>PHYSICAL CHARACTERISTICS</b>					
Housing material	Metal				
Ingress protection	IP30				
Dimensions (W x H x D)	45 x 132.6 x 112.8 mm				
Weight	557 g			600 g	
Mounting	DIN rail				
<b>ENVIRONMENTAL</b>					
Operating temperature range	-25 - +70 °C				
Storage temperature range	-40 - +85 °C				
Humidity	5 - 90 %, non condensing				
Shock	IEC 60068-2-27				
Free fall	IEC 60068-2-32				
Vibration	IEC 60068-2-6				
<b>EMC CHARACTERISTICS</b>					
EDS	EN 61000-4-2, level 4				
Surge protection	EN 61000-4-5, level 3				
EFT	EN 61000-4-4, level 4				
RF	EN 61000-4-3, level 4				
RC	EN 61000-4-6, level 3				
Oscillatory wave immunity	EN 61000-4-11, level 3				
Variation magnetic field immunity	EN 61000-4-8, level 5				

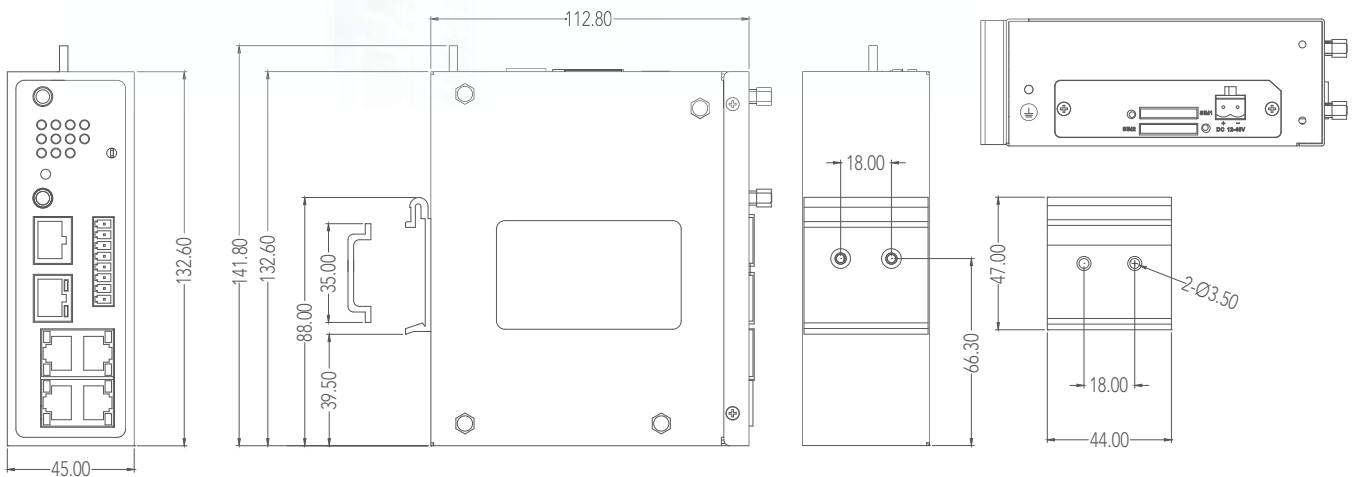
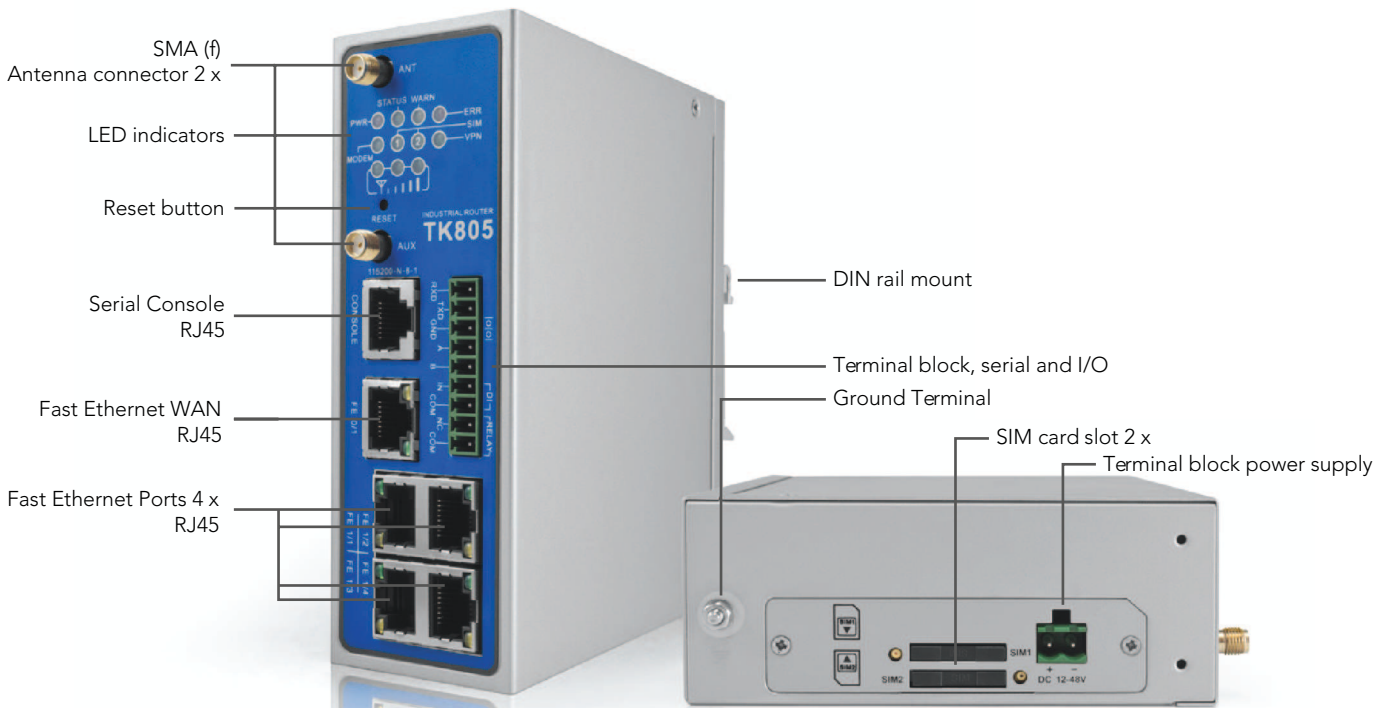
# TK800 Series – Industrial GPRS / UMTS / LTE Router

Dimensions TK802



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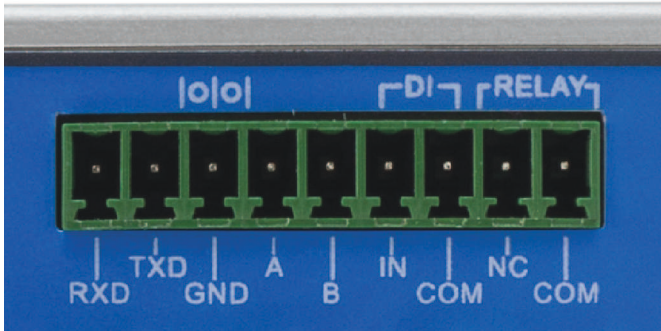
Dimensions TK805



## TK800 Series – Industrial GPRS / UMTS / LTE Router

### Serial Interfaces / I/Os

The standard TK800 router features two Ethernet ports and a serial interface for configuration. As an extension, two serial interfaces (1x RS-232, 1x RS-485) and a digital input and a relay output are available.



Pin assignment:  
Terminal block 9-pin

PIN	DESCRIPTION
RS-232	RXD / TXD / GND
RS-485	A(RS-485+) / B(RS-485-)
DI	IN / COM
Relay	NC / COM

### Improve availability with Dual-SIM

The devices can be operated with two SIM-cards. The combination of two different SIM cards from different network providers leads to a redundancy in the network connection. Fails the network of a mobile operator, can automatically be switched to the second SIM card.



Pin assignment:  
Terminal block 2-pin

PIN	DESCRIPTION
+ / -	12 - 48 V DC

### LTE with up to 100 Mbps

The TK800 series is available in a UMTS and a LTE version. With LTE, the fourth generation wireless standard, you can achieve higher speeds and lower latencies. They also benefit from better coverage, especially in rural areas by the provider. The use of diversity or MIMO antennas also ensures better reception.

All routers are downward compatible in the mobile communications standard. So the 4G version also supports 3G (HSPA +, HSDPA, HSDPA, UMTS) and 2G (EDGE, GPRS, GSM). If the network with the highest standard is not available or the reception is too weak, the system automatically switches to the next best network.





## TK800 Series – Industrial GPRS / UMTS / LTE Router

## Antennas

Apart from many different antennas, we offer antenna extensions and adapters for each application. Below you can find a list of recommendable antennas for the TK800 Series routers.



**WAO-GUL0L-2C000-SMAM0**



**WAO-GUL0W-2D500-SMAM0**



**WAO-GUL0W-2D999-SMAM0**



**WAO-GUL0D-2B050-SMAM0**

GENERAL DATA				
Type	Portable antenna	Rod antenna	Rod antenna	Low-profile antenna
Radiation Type	Omnidirectional	Omnidirectional	Omnidirectional	Omnidirectional
Antenna Connector	SMA (m)	SMA (m)	SMA (m)	SMA (m)
Frequency Range	698 - 960 / 1710 - 2700 MHz	824 - 960 / 1710 - 2170 MHz	824 - 960 / 1710 - 2170 MHz	870 - 960 / 1710 - 2170 MHz
Gain	2 dBi	2 dBi	2 dBi	2 dBi
Cable	SOM00-1950100-SOF0B	5 m	10 m	0,5 m



**CACELY-N**



**FP8241850-10VP**



**BMLPVMB/LTE**

GENERAL DATA			
Type	Yagi antenna	Panel antenna	Low-profile antenna
Radiation Type	Directional	Directional	Omnidirectional
Antenna Connector	N (f)	N (f)	Universal-Plug
Frequency Range	880 - 960 / 1710 - 2170 MHz	824 - 960 / 1710 - 2170 MHz	698 - 2700 MHz
Gain	6 / 8 dBi	10 / 11 dBi	3 dBi
Cable	<ul style="list-style-type: none"> <li>• SOM00-1950200-N0M00</li> <li>• SOM00-1950500-N0M00</li> </ul>	<ul style="list-style-type: none"> <li>• SOM00-1950200-N0M00</li> <li>• SOM00-1950500-N0M00</li> </ul>	<ul style="list-style-type: none"> <li>• Antennenfuß: MVP</li> <li>• SOM00-1950200-N0M00</li> </ul>

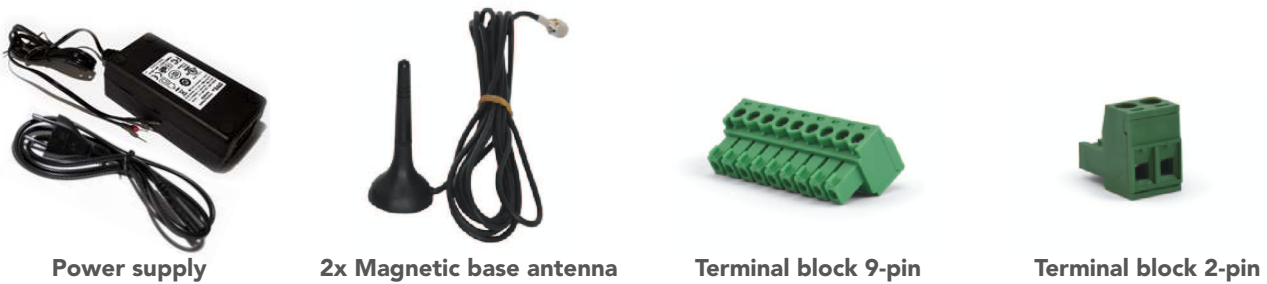
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Antenna accessories



GENERAL DATA				
Characteristic	Vandal-proof permanent mount	Antenna cable	Antenna cable	Antenna cable
Antenna connector	N (f)	SMA (m) - Bulkhead SMA (f)	SMA (m) - N (m)	SMA (m) - N (m)
Cable length	-	1 m	2 m	5 m

Router accessories



ACCESSORIES			
100 - 265 V AC to 12 V DC	2.5 m Cable	only TK802x-EX0	12 - 48 V DC
included in delivery	included in delivery	included in delivery	included in delivery
Art. No. 6912TK000000	Art. No. 6911WAGEN000	Art. No. 6912TK000004	Art. No. 6912TK000005

Welotec is using a ISO 9001:2008 certified quality management system • All specifications are subject to change

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