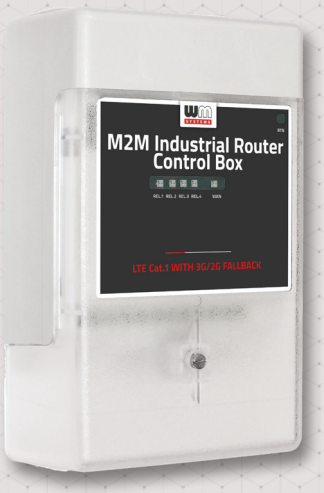
M2M INDUSTRIAL ROUTER CONTROL BOX

Universal load control box with remote relay control for tariff switching, Load Management and Lighting Control

Simple, but versatile solution suitable for a wide range of IIoT applications.
It allows operators to control connected devices via relays on-demand or automatically according to an autonomous schedule.



Our 4-relay load control switch is a compact and cost-effective solution for the remote control of connected devices. It consists of a switch and a modem integrated all-in-one.
It possible to optimize current consumption in closed distribution systems in industrial, agricultural, and other companies and institutions and to obtain financial savings.

Street Light Management

This product enables operators to control public lighting remotely.
Upgrade your street light control cabinets with smart features by adding our Control Box. It allows fine-tuned control and supervision of all components including lamps and dimming light intensity to each of the electric cabinets according to particular needs. One box is able to control 4 street lamp groups, which can accommodate hundreds of lamps. This can be done on-demand or according to a scheduled program.

In each control cabinet, our solution provides the following features:
Street Light control & switching | Data collection | Switching and operation status | Data exchange with OSLP compatible software | Scheduled operation / on-demand manual control

Moreover, advanced monitoring and management processes are included:
Power consumption | Lamp failure detection | Remote management and maintenance

MAIN FEATURES

- Central switching for authorized persons only
- 4pcs latching relays to control (2-3 way mode switching, 250V AC, 50-60Hz / 16A)
- Physical inputs: Ethernet (RJ45, LAN) / RS485 (IEC1107, for meters) / P1 interface (RJ45, for meters) with 5V DC power output / microSD card slot
- Supercapacitor to protect against outages
- IEC 1107 / OSLP protocol support
- Manual light switching / scheduled switching
- Automated operation depending on weekdays/sunset/geo-position – or on-demand
- Event and operation monitoring and reporting
- OpenWRT operation system (Linux-based device operating software, web UI)
- Remote parametrizing, FW updates, reboot
- Security features (IPSec, SSH, TLS)

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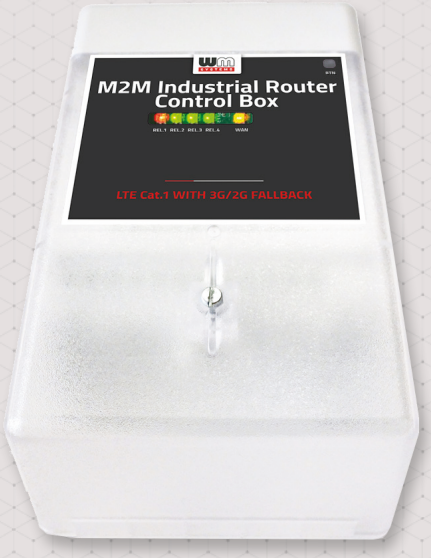
LOAD MANAGEMENT ON THE SMART GRID

As part of a Demand Response Systems (DR) our load control switch can be used to monitor energy usage in the area and automatically switch off equipment with high consumption such as water heaters or HVAC systems when demand spikes. The 4 relays of the load switch can be configured to control electric loads.



STREET LIGHT CONTROL SYSTEM

- Street Light Control and Load Management features
- Scalable smart grid control and public lighting systems control
- IEC 1107 / OSLP open protocol (device-server) communication
- Supplier requested on-demand central lighting control
- Scheduled and manual switching
- Handling time zones, daylight saving
- Monitoring operation, event reporting, outage management
- Authorized access and control
- Alerts (outages, consumption reductions, energy falls)

DEVICE SOFTWARE

- OpenWRT system: Linux-based operating system, webGUI user interface
- Protocols: DHCP, DynDNS, IP route, NAT, IPv4/IPv6, IP passthrough, HTTP(S), SSHv2, IPSec, IEC 1107, OSLP, TLS v1.2
- Management: Device Manager software (remote configuration, firmware updates, QoS)
- Customization is available!

M2M INDUSTRIAL ROUTER CONTROL BOX®		LTE Cat.1		LTE Cat.M / NB		
Input Voltage Range		· ~100-240 VAC +10% / -10%, 50-60Hz +/- 5%				
Power Consumption / Current		· Minimal: 3W · Average: 5W · Max: 9W (0.25A)				
Max Input Voltage THD		· 5%				
Communication module	Mobile technology	· LTE Cat.1 with 2G "fallback"	· LTE Cat.1 with 3G/2G "fallback"	· LTE Cat.M / Cat.NB	· LTE Cat.M / Cat.NB	· LTE Cat.M / Cat.NB with 2G "fallback"
	Module type	· Telit LE910S1-EA	· Telit LE910C1-EUX	· Telit ME910C1-E1	· Telit ME910G1-W1	· Telit ME910G1-WW
	Bands / Frequency (MHz)	· LTE: B1(2100) / B3(1800) / B5(850) / B7(2600) / B8(900) / B20(800) / B28(700) / B38(2600) / B40(2300) / B41(2500) · 2G: B3(1800) / B8(900)	· LTE: B1(2100) / B3 (1800) / B7(2600) / B8(900) / B20(800) / B28A(700) · 3G: B1(2100) / B3(1800) / B8(900) · 2G: B3(1800) / B8(900)	· LTE Cat.M / Cat.NB: B3(1800) / B8(900) / B20(800)	· LTE: B1(2100) / B2(1900) / B3(1800) / B4(1700) / B5(850) / B8(900) / B12(700) / B13(700) / B18(800) / B19(800) / B20(800) / B25(1900) / B26(850) / B27(800) / B28(700) / B66(1700) / B71(600) / B85(700)	· LTE: B1(2100) / B2(1900) / B3(1800) / B4(1700) / B5(850) / B8(900) / B12(700) / B13(700) / B14 (700) / B18(800) / B19(800) / B20(800) / B25(1900) / B26(850) / B27(800) / B28(700) / B66(1700) / B71(600) / B85(700) · 2G: B2(1900) / B3(1800) / B5(850) / B8(900)
	Speed (DL/UL)	· LTE Cat.1: 10/5 Mbps · 2G (GSM/EDGE): 80/40 kbps	· LTE Cat.1: 10/5Mbps · 3G (HSPA+): 42/5.76 Mbps · 2G (GSM/EDGE): 80/40 kbps	· LTE Cat.M: 300/375 kbps · LTE Cat.NB: 20-250/250 kbps	· LTE Cat.M: 588 kbps/1 Mbps · LTE Cat.NB: 120/160 kbps	· LTE Cat.M: 588 kbps/1 Mbps · LTE Cat.NB: 120/160 kbps · 2G (EGPRS): 264/210 kbps
	SIM card slot	· mini SIM (2FF type)				
	Antenna	· for LTE antenna (SMA, 50 Ohm)		· for LTE Cat.M / Cat.NB antenna (SMA, 50 Ohm)		
Interfaces	Connectors	· Ethernet (RJ45, LAN) · RS485/IEC-1107 interface (isolated) – for meters · P1 interface (RJ45, for meter) with 5V DC power outpu · microSD card				
Relay output	Relay type / Size	· 4pcs latching relays (2pcs relays: COM/NC, 2pcs relays: COM/NC/NO) - potential-free · Relay status backup/relay switching in case of outage				
	Nominal voltage Uc/ Current Ic	· 250VAC, 50Hz or 60Hz / 16A				
User interface	Street Light Control software	· Street Light and Load Management features · Data sending to Concordia Software Platform or other OSLP protocol compatible software (Open Street Light Protocol with server by encryption, secure file upload and communication, TCP/IP) · Monitoring software (central light switching - by schedules/on-demand, handling time zones and daylight saving, counting lighting operation hours, monitoring, event reporting, alerts)				
	Operation system	· Open-source OpenWRT operating system, local configuration on web user interface · Protocols: DHCP, DynDNS, IP route, NAT, IPv4/IPv6, IP passthrough, HTTP(S), SSHv2, IPSec, IEC 1107, OSLP, TLS v1.2				
	Management	· Device Manager software (remote configuration, firmware updates, QoS)				
	Indication	· 5 LEDs (relay status, operation status)				
Security	Security features	· Watchdog, firewall, supercapacitor (> 10sec without power, for safe shutdown), time zones, handling daylight saving, continuous monitoring, alerts, reports, secure TLS communication				
Environment	Temperature range	· Operation / Storage temperature: between -40 °Celsius and +85 °Celsius degree				
Enclosure	Enclosure / Protection / Mount	· IP52 plastic enclosure (according to DIN 43861 part 2) with transparent terminal block cover (protecting ports), built-on mounting				
	Dimensions / Weight	· 175 x 104 x 60 mm / 420gr				

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