MoRos LAN
MoRos Modem
Industrial All-round Router

INSYS icom

MoRoS LAN

MoRoS Modem

The all-rounders
for highest flexibility

The MoRoS series of INSYS icom is characterised by a large variety of possibilities that exceed pure routing by far. MoRoS devices consist of a modem, a router and a switch, provide a RS232 interface, digital inputs/outputs and feature an integrated programming environment for user-specific applications (Linux sandbox).
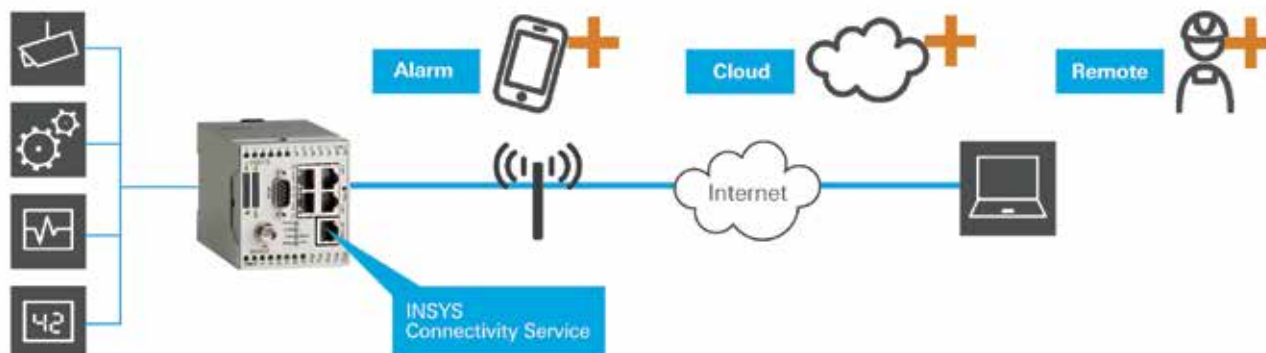
The configuration of the devices is simple and intuitive and can be managed via web interface. The combination of VPN and firewall provides a maximum of IT security. You'll set-up your own VPN network quick and easy with the optional icom Connectivity Suite VPN service. PCs, routers and locally connected network devices can be integrated in just a few steps.

The Monitoring App allows you to extend the functionality of the devices by monitoring controls and other devices as well as sending messages via e-mail or SMS.

Moreover, application data can be transferred quick and easy to cloud services like Cumulocity or Telekom "Cloud der Dinge" for central management and visualisation.

Highlights

- Modem, router and switch in one device

- Comprehensive functionality and interfaces incl. RS232 + I/Os

- IT security: VPN, stateful firewall

  4+1-port switch with 10/100 Mbit/s

- Redundant communication paths

- Integrated programming environment Linux sandbox

- Quick start for icom Connectivity Suite VPN service

- Monitoring App for monitoring Siemens LOGO!™, S7 and Modbus TCP/RTU devices

Sample application with cellular radio networks

www.insys-icom.com

Technical Data
MoRoS - General Functions

Router	
Function	IPv4/IPv6 router, connection management, DHCP server and client, Full NAT (IP forwarding, port forwarding, netmapping), DNS relay, dynDNS support, PPoE for ADSL modem via LAN (ext), dial-in, dial-out, callback
Security	OpenVPN (client and server), IPsec (ESP normal/aggressive mode), GRE, PPTP, stateful firewall and MAC filters, RADIUS authentication, 10 users for dial-in, authentication via PAP/CHAP/MS-CHAP/MS-CHAP 2, dial filters for dial-out, Linkloss Detection, Failed Login Detection, no backdoor
Redundancy	LAN ext. port for external DSL modem, RS232 interface for external phone modem, 2 dial-out targets, 2 OpenVPN servers
Connection stability	Connection monitoring on several levels, hardware watchdog
Ethernet Switch, interfaces	
Ports	4+1 x RJ45 (4 switch ports + 1 LAN/ext) 10/100 MBit/s for full and half duplex operation
Function	Automatic detection of patch cable/cross-over cable, automatic speed adjustment, port mirroring
Serial interface	Serial-Ethernet gateway (incoming and outgoing connections, Modbus TCP/RTU gateway, modem emulation, editable AT answer list, phone number conversion to IP addresses)
Inputs/Outputs	2 digital inputs (low active) for message dispatch, dial-out connection establishment (dial out, VPN serial), VPN tunnel, 2 potential-free outputs switchable via web interface, via SMS, time-controlled, connection display PPP/VPN
Operation	
Configuration	Local and remote web interface (http, https), command line interface (CLI), Telnet, SSH, text and binary file (also for backup), quick start for ICS Menu languages: German, English, French
Indications (LEDs)	Connection status, data/signal, device status/VPN, power, switch ports
Diagnosis	Comprehensive log files, support package, integrated help functions, Diagnosis tools: ping, tcpdump, traceroute, DNS lookup, AT commands
Customer-specific programming environment	User access to embedded Linux (sandbox), 150 MB permanent memory, socket access, example programs: e-mail and SMS client, serial logger, etc.
Messages	Hardware watchdog, system messages via e-mail, SMS (not MoRoS LAN and ADSL), SNMP traps, SNMP V1/V2c/V3
Events for messages (selection)	Establishing WAN or VPN connection, alarm or pulses on input 1, auto update, ethernet link up/down, configuration change, firewall violation, failed authentification
Additional features	NTP client and server, buffered real-time clock, optional monitoring packages
Updates	Update of firmware and configuration (local and remote), daily auto update via server (http, ftp)
Enviromental conditions	
Power supply	10 ... 60 V DC (±0%)
Humidity	0...95% (non-condensing)
Mounting / protection class	DIN rail mounting / housing: IP40, terminals: IP20
Applied standards	Radiation: EN 55022 Class B, EN 61000-6-3 Interference resistance: EN 55024, EN 61000-6-2 Security: EN 60950-1 (except MoRoS LAN, since not required)
Monitoring App (monitoring function)	
Monitoring elements	Timer, incoming SMS for cellular devices, internal flags
Logical combination of the elements	AND, OR, NOR, NAND, XOR
Actions	Message dispatch, http call, timer start
Messages	SMS, e-mail: Freely configurable text, also actual values from monitored elements

Technical Data
MoRoS Variants - Specific Functions of Individual Versions

MoRoS LAN - Ethernet	
Power consumption (during connection)	Approx. 2.5 W, max. 3 W
Dimensions (WxHxD)	70 x 75 x 110 mm (4 HP)
Operating temperature	-30...+70 °C -30...+85 °C under restricted conditions (refer to www.insys-icom.com/restricted)
Certifications	CE, FCC part 15 class A
MoRoS Modem - PSTN	
MoRoS Modem	Analogue modem (PSTN): Dial-up line up to 56 kBits/s, international use
Power consumption (during connection)	Approx. 2.5 W, max. 3 W
Dimensions (WxHxD)	70 x 75 x 110 mm (4 HP)
Operating temperature MoRoS Modem	0...+55 °C
Certifications	CE, FCC part 15 class A

* Please use MoRoS ADSL 2.1B PRO in case of parallel operation with ISDN devices

Note: The discontinued versions GPRS, ADSL and ISDN can be found in the data sheet on
https://www.insys-icom.com/en/support/documentation-and-downloads/

Order Numbers
MoRoS

Order numbers

Product description	Features	Order number
MoRoS LAN PRO	LAN-LAN router	10000208
MoRoS Modem PRO	Analogue modem (PSTN)	10000199

Suitable accessories

Product description	Features	Order number
Power supply unit	24 V power supply unit for DIN rail	10014249
icom Connectivity Suite VPN	VPN Service for M2M Applications	insys-icom.com/en/VPN
M2M SIM cards	Industrial SIM cards, multi-roaming, pooling, management portal	insys-icom.com/en/M2M-SIM

Monitoring Packages

Product description	Features	Order number
Monitoring package LOGO!™	Licence for monitoring Siemens LOGO!™ 0BA4 through 0BA8	10017303
Monitoring package Modbus TCP/RTU	Licence for monitoring Modbus TCP/RTU, function codes 1-6	10017305
Monitoring Package S7	Licence for monitoring Siemens S7 -200/-300/-400/-1200/-1500	10017306

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