

# FWL 550 Remote control station & PLC w/ LTE router & VPN

The new remote control power pack from SCHRAML

#### The FWL 550: the new leader in remote control technology

Our new FWL 550 IoT remote control component is remote control technology at the highest level. It does everything that you can expect from a modern remote control station today:

- a flexible and highly stable data transmission to the control centre through the integrated LTE modem, the VPN router and the LAN interface e.g. for LTE / GPRS, DSL, SHDSL, LAN. For the highest level of failure protection, also with automatic alternative route switching between DSL and LTE if one of the two routes is not available.
- an absolutely reliable long-term intermediate storage thanks to its extremely large storage capacity.
- simultaneous use as a full-fledged PLC with CODESYS IEC program. So you save space and costs compared to a separate PLC.
- the possibility of remote programming of the PLC via VPN with flexible use of the VPN services OpenVPN, IPsec and WireGuard.

The FWL 550 is the consistent further development of our proven FWL 455 remote control station, which also scores with its **eight digital inputs onboard**, its flexible expandability with I / 0 modules, the space and cost savings through the **integrated LTE modem and the VPN router** and with its **very robust aluminum housing**.

The FWL 550 belongs to the new SCHRAML hardware generation, which is equipped with **extremely powerful ARM Cortex QuadCore processors** and thus offers a performance that is comparable to that of a "full-blown" computer.





#### Remote control station and full PLC in one

You can use the new SCHRAML FWL 550 remote control station with the CODESYS automation software according to IEC 61131-3 **as a full-fledged PLC**. "All in one", with the corresponding cost savings, consistency and easy start-up.

The FWL 550 thus becomes a flexible all-rounder that is just as suitable for simple data acquisition and storage as it is for use as a controller. Regardless of whether you are automating a smaller pumping station or implementing complex sewer network management with directly interacting PLCs in your sewer structures (direct cross communication). The FWL 550 is also perfect for PLC coupling. There is no need to intervene in existing PLCs for the direct and flexible coupling (warranty)





## Establish a VPN tunnel directly from the FWL 550 - e.g. for remote PLC programming

You can comfortably set up a VPN tunnel between the central network and the remote station directly via the FWL 550 and thus safely configure and program the station and PLC remotely without having to approach them. Via **VPN Forwarding** you can also include devices connected to the FWL 550 remote control station, e.g. webcams, or other PLCs in the VPN tunnel. If the FWL 550 remote control station is connected to the control centre via LTE mobile radio, use the **integrated LTE / VPN router** for the VPN.

The remote control station supports the three **market-leading VPN solutions IPsec**, **OpenVPN and WireGuard** and can therefore flexibly comply with the central VPN specifications. The VPN tunnel between the control centre and the station **can be activated permanently or only temporarily**. The temporary activation takes place **directly in the AQASYS control system** and is advantageous if you only need brief access to the station / PLC - for example, to bring a changed PLC program or a new station configuration to the station / PLC. This protects your data rate and avoids unnecessary access to the station / PLC.





The connection of the FWL 550 remote control station - as well as all other hardware components from SCHRAML - to the central AQASYS control system is perfectly protected during data transmission via DSL and mobile radio via our **IoT security gateways**. Incoming data traffic from the station passes through the gateways as a "security lock". This means that **there is no need for an open port in the control centre** to receive data. A simple and at the same time revolutionary security concept offered only by SCHRAML.

With the optional AQASYS module "high IT security", the entire communication can take place as **SSI / TLS encrypted** and with **system-specific certificates**.



#### Safe data transmission thanks to automatic alternative route switching

Would you like to connect your FWL 550 remote control station to the control centre via DSL or LAN / VPN, but you want to be sure that the data transfer works reliably even when the internet / cable connection is not available? Then use the **automatic substitute path switching and alert**, which you can licence as an optional module for the station.

The FWL 550 closely checks whether the wired Internet connection is "up" and **automatically switches to an LTE mobile communication connection** after a defined period of non-availability. To do this, it uses the LTE modem integrated in the FWL 550. If the station later recognises that the wired route is working again, it will automatically switch back to it.





#### High-performance webcam integration with visualisation in AQASYS 10

Webcam recordings can be transmitted to the AQASYS process control system with high performance and securely via VPN. In the new AQASYS 10 version, the webcam images are saved in an image archive. With the optional module "Webcam Visualisation and Event Viewer", webcam images can be displayed directly in the new dashboard and in the process images.

The archived images for each point in time are displayed directly in the line chart. When moving the line with the mouse, a "Video" is created - similar to a flip book - with which the processes are perfectly visualised over the selected period of time.



(Live) webcam image in the dashboard



Webcam archive image display directly in the line chart

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#### Operating and monitoring security through HMI visualisation

You have full control over the processes at the station directly at the FWL 550 remote control station - regardless of a remote control or internet connection: on an **HMI panel or on a mobile Windows tablet or laptop that is connected to** the FWL 550 via WLAN. Thanks to the AQASYS HMI software, you use **the same process pictures** as on the desktop and WebClient.

The HMI visualisation gives you double security: You can use it to **monitor and control**, the station fail-safe on site, even if the connection to the control centre is not "up". With the HMI LAN / VPN variant, you even have access to all stations and processes network.



### Technical specifications

Performance features				
Data transfer possible via LTE / GPRS, DSL, LAN - optionally with automatic alternative route switching between DSL and LTE if one route	N, SHDSL fails		<b>0</b>	
8 digital inputs onboard, expandable via L-Bus and external I / 0 modules (FWL 4xx)			Integrated LTE modem (Mini-SIM) for future-proof data transmission in the 4G network	
Can also be programmed as a PLC with CODESYS (IEC 61131-3)				
Comprehensive, loss-free storage and processing of all measured values and messages in the event of unavailability of the data transmission			<ul> <li>VPN tunnel can be activated permanently or temporarily from AQASYS for e.g. direct and convenient remote PLC programming</li> <li>Webcam connection         <ul> <li>Direct integration into AQASYS</li> <li>Archiving in image gallery</li> <li>Time / event-related image sequences in line charts</li> <li>Current webcam image in the dashboard</li> </ul> </li> </ul>	
VPN tunnel (with / without VPN forwarding) permanently active or temporarily activated from the control system -> e.g. for safe and convenient PLC remote programming				
T security: SSL / TLS encryption of data transmission with X.509-based certificates from the router to the control system is possible				
General information				
Operating System	Linux	:	- Guirent webcam illage i	וו נווב עמטווטטמוע
Compatible from AQASYS version	10			
Data transmission			1700 TERMICOM1 1200	4 x401
Integrated LTE modem and VPN router				
VPN services: OpenVPN, IPsec, WireGuard	٠			
Input / Output modules			2 Digital Input	
I / Os onboard	8 DE		745550 www.sci	esamilide X000 X801 COM2
No of I / O cards that can be expanded directly via the bus Interfaces	10 can also be expanded u	using a bus coupler	3 Santy wanter. Motors Santy wanter. Motors Santy and the Motor	
LAN	2		SCHRAML	5
WLAN	•		544 EEO	RESET STOP
RS485 (Modbus RTU)	1		FWL 550	C Steen
Serial / RS232	1 (f	or e.g. terminal)	1.000	LAN2
USB	1		20024V PE OV OV	XSN0 WLAN
PLC			· 귀만만한 · · · ·	2
separate PLC function with CODESYS according	to IEC 61131-3		00000 X801	x302 X990
PLC coupling via TCP / IP (e.g. S7, Modbus TCP, Panasonic Mewtocol TCP etc.)	all commo	n PLCs	X101 PE	
Storage			4	
Storage capacity	for 14 days archive depth for measured value archiv Al + AO: 1 million   DI + DO: 5	(report archive); /e entries max .: i00,000   C: 500.000	8 digital inputs onboard	High-performance ARM Quad core processor
Installation and operation			6	7
Dimensions (width x height x depth in mm)     123 x       Power supply     24		x 50	2 LAN interfaces	RS485 interface
		;	+ WLAN	(Modbus RTU)
Other	DIN rail mounting   but	ffered real-time clock		

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