

TGN FlexControl

The power to control power

General Description

The FlexControl is an adaptive control system for power system regulation. It acts as a command-and-control hub for control signals, data collection and logging, calculation and communication with the outside world.

Energy systems such as solar cells and batteries can be controlled directly from FlexControl, either autonomously or by manually setting the operational policy.

Communications protocol

FlexControl is designed for maximum flexibility and communication with all kinds of equipment relevant to a local power grid. By standard, FlexControl communicates with external equipment via a range of communication protocols.

Adjustments can be made for communication via other protocols, provided they maintain adequate operational security.

Cyber security

No component of FlexControl communicates directly with the outside world and will therefore be highly resistant to cyber-attacks. All communication takes place via secure communication lines to a secured cloud terminal where data packets are controlled and forwarded to TGN Aggregate.

FlexControl utilizes the IEC 62443-3-3 security standard and implements requirements for Cyber security essential (SP1) that are requirements from DNV for IT security for IoT devices on marine structures, such as oil platforms and sub-sea installations.



Universal communication

Communicates with any controllable equipment via a wide range of protocols.

Smart algorithms

Built in smart algorithms allow for automated power optimization.

Trading ready

Communicates directly with trading houses to enable ancillary trading out of the box.

Pre-qualified for FFR/FCR

Comes prequalified for trading in the FFR and FCR markets.

Smart grid

Designed to act as the brain of a smart power grid.

Mobile ready solution

Can be set up as a movable unit together with ESS or other critical equipment.

Reliability & Security

Only the most reliable components are accepted.

Specifications

Model	FlexControl Synergy		FlexControl Evo	
	Standard	Upgraded	Standard	Upgraded
System Capability Specifications				
Auxiliary I/O capacity	0	10	0	256+
Datalogging	Yes	Yes	Yes	Yes
Fiber optic communication	No	Yes	No	Yes
4G/5G communication	No	Yes	Yes	Yes
Off-grid island mode	No	No	No	Yes
API data sharing	Yes	Yes	Yes	Yes
Data encryption				
Internal system data encryption	No	Yes	Yes	Yes
External data encryption	Yes	Yes	Yes	Yes
Dependencies				
Auxiliary power	n/a	16A 230V	16A 230V	16A 230V
Internet connection	5 Mbit	5 Mbit	5 Mbit	5 Mbit
General Specifications				
Protection level (IP rating)	IP65	IP65	IPXX	IPXX
Operating temperature range	-20°C to +60°C	-20°C to +60°C		
Storage temperature range	-20°C to +70°C	-20°C to +70°C		
Humidity range	5-85% RH, non-condensating	5-85% RH, non-condensating		
Dimensions				
Weight				
Material and Finish	ABS	ABS	Steel	Steel
Heat generation				
Communication protocols				
Supported industrial protocols	ModBus (TCP/IP, RTU), MQTT	ModBus (TCP/IP, RTU), PROFINET, FieldBUS, EtherCAT, Profibus, BACnet, MQTT	ModBus (TCP/IP, RTU), MQTT	ModBus (TCP/IP, RTU), PROFINET, FieldBUS, EtherCAT, Profibus, BACnet, MQTT
Communication interface	TCP/IP (Ethernet)	TCP/IP (Ethernet)	TCP/IP (Ethernet), RS232, RS-485 (Serial)	TCP/IP (Ethernet), RS232, RS-485 (Serial)
Standards				
Communication			NEK EN IEC 62351-3:2023	
System integration			NEK 400:2022 NEK 399:2022 NEK IEC 62485 (NEK 486:2021)	
Certifications and approvals				
CE	Electromagnetic Compatibility Directive 2014/30/EU (EMC)			
UL				
DNV-GL	Low Voltage Directive (2014/35/EU)			