



- Monitoring of Primary and Secondary networks
- Phase to Neutral voltage range 0...280V AC 50/60Hz
- 1-phase or 3-phase+N configurations
- Monitoring of 3-phase Asymmetry and Rotation
- Generator and Coupler control
- USB and MODBUS-RTU communication
- Configuration via panel keyboard or PC application
- Text panel display for configuration and monitoring
- 10,8...30V DC power supply
- Compliant with EN 60947-1, EN 60947-6-1



**Technical data**

Measurement circuit			
Voltage measurement method		phase to neutral	
PRI and SEC network types		1-phase or 3-phase	
Phase to neutral voltage range	V AC	0...280	
Frequency range	Hz	47...63	
Asymmetry and rotation monitoring		Yes	
Voltage measurement accuracy	%	2	
L1, L2, L3 input impedance	MΩ	10	
Digital Inputs			
Low input level	V	0...2	
High input level	V	8...30	
Input current @ 24VDC	mA	1,9mA	
Internal delay	ms	80	
Rated surge voltage 1,2/50μs	V	500	
Galvanic insulation to control circuit		No	
Relay Outputs			
Contact arrangement Q1, Q2, Q3, ALARM		Form C	
Contact arrangement START GEN, SUCTION		Form A	
Rated contact voltage	V	250	
Rated switching current in category	AC1	A/V AC 6/250	
	DC1	A/V DC 6/24	
Switching load range AC1	VA	1500	
Contact resistance	mΩ	≤ 100	
Galvanic insulation to control circuit		Yes	
Power supply			
Supply voltage range	V DC	10,8...30	
Power consumption	W	≤ 5	
Galvanic insulation to control circuit		No	
Rated surge voltage 1,2/50μs	V	500	
MODBUS interface			
Data rate	bps	9600	
Supported frames		Reading of analog, digital inputs, relay outputs and status register	
Galvanic insulation to control circuit		No	
Insulation			
Insulation rated voltage	V AC	400	
Rated surge volt. of analog inputs and relay outputs	V	4 000 1,2/50μs	
Overvoltage category		III	
Pollution degree		2	
Dielectric strength	V AC	control – analog input	4 000
		control – relay output	4 000
		open contact	1 000
General data			
Electrical life at 50% of rated load in category AC1	cycles	≥ 1,5 x 10 <sup>5</sup>	
Mechanical life	cycles	≥ 1 x 10 <sup>7</sup>	
Dimensions (a x b x h) / weight	mm / g	228,5 x 125 x 74 / 680	
Storage / ambient temperature	°C	-40...+70 / -20...+55	
IP rating		IP20	
Relative humidity	%	85	
Shock resistance	g	15	
Vibration resistance	mm	0,35 10...55Hz	
Flammability		pcb and housing: UL-94-V0	

**Description**

The ATS-1000 controller is designed to realize automatic transfer switch functions. Monitors phase L-N voltages of two networks - primary PRI and secondary SEC. Can be configured to operate in 1-phase or 3-phase networks with asymmetry and phase rotation monitoring.

Depending on software settings the following four network configurations are supported: Network-Network, Network-Network-Coupler, Network-Generator and Network-Generator-Coupler.

The ATS-1000 has a built in control of a power generator and provides the automatic start, the suction control and the monitoring of the readiness to take load.

The Digital Inputs can be used for monitoring of contactors or circuit breakers, fire alarm deactivation or external locking.

Built in text display and keyboard allows convenient configuration and current status monitoring without the need of connecting to the PC.

USB interface can be used for configuration, status monitoring and viewing of logged events by dedicated PC application.

MODBUS-RTU interface allows remote monitoring and integration with PC computers or touch panels.

**Mounting**

1. Disconnect supply, monitoring and relay outputs voltages.
2. Make sure there is no voltage on connection wires.
3. Mount the controller in the control cabinet.
4. Make external connections.
5. Turn the supply voltage on.
6. Configure the controller using panel keyboard or PC application.

**Attention**



Read and understand these instructions before installing, operating or maintaining the equipment.  
Never carry out work on live parts! Danger of fatal injury! The product must not be used in case of obvious damage. To be installed by an authorized person.

**Coding**

**ATS-1000**

**External connections**

<b>Analog Inputs</b>	<b>PRI and SEC networks</b> <b>L1, L2, L3</b> – phase contacts <b>N</b> – neutral wire contacts	<b>Digital Inputs</b>	<b>COMMON</b> – common point of Digital Inputs, connect to any input for activation <b>Q1 ON</b> – Q1 closing control <b>Q2 ON</b> – Q2 closing control <b>Q3 ON</b> – Q3 closing control <b>Q1 TRIP</b> – Q1 release control <b>Q2 TRIP</b> – Q2 release control <b>GEN RDY</b> – "generator ready to take load" control <b>IDLE</b> – external lock active high <b>LOCK</b> – external lock active low <b>FIRE</b> – fire alarm, active low
<b>MODBUS</b>	<b>SG</b> – ground of RS485 interface <b>A</b> – A input of RS485 interface <b>B</b> – B input of RS485 interface <b>TR</b> – 120Ω internal line termination, connect to <b>A</b> to terminate	<b>Power Supply</b>	<b>„+”</b> – positive input of DC supply <b>„-”</b> – negative input of DC supply <b>PE</b> – earth connection
<b>Relay Outputs</b>	<b>Q1</b> – output to control Q1 breaker <b>Q2</b> – output to control Q2 breaker <b>Q3</b> – output to control Q3 breaker <b>GEN START</b> – external generator start control <b>SUC</b> – generator suction control <b>ALM</b> – ALARM mode output		

**Supported configurations**

	<b>Network-Network</b> with contactors or circuit breakers
	<b>Network-Generator</b> with contactors or circuit breakers
	<b>Network-Network</b> with coupler
	<b>Network-Generator</b> with load drop

**Basic functions**

- Time control of opening and closing Q1, Q2, Q3.
- Q1, Q2 release control.
- Generator configuration - start attempts, start time, break time, suction control, cooling option, readiness to take load control.
- Load drop option.
- Fire lock.
- External or internal LOCK options.
- 6 LED indication.
- Automatic return or no return modes.
- Manual control option.
- Optional password protection.
- Event logging.
- Current status monitoring.
- USB and MODBUS-RTU communication.
- Configuration via PC application.
- Polish and English text display menu.



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