

PIANO NAZIONALE DI RIPRESA E RESILIENZA (PNRR)

Missione 4 - Componente 2 - Investimento 1.3

“Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base” - Finanziato dall'Unione europea – NextGenerationEU

Avviso MUR D.D. n. 341 del 15.03.2022

Partenariato Esteso “NEST - Network 4 Energy Sustainable Transition”

D.D. n. 1561 del 11.10.2022

Codice Identificativo: PE00000021 - CUP: E63C22002160007

CAPITOLATO TECNICO

N 2 Phasor Measurement Unit ABB RES670 2.0

Energizing quantities, rated values and limits for protection transformer modules:

Current $I_r = 1$ or 5 A $(0.2-40) \times I_r$

Operative range $(0-100) \times I_r$

Permissive overload $4 \times I_r$ cont.

$100 \times I_r$ for 1 s *)

Burden < 150 mVA at $I_r = 5$ A

< 20 mVA at $I_r = 1$ A

Ac voltage $U_r = 110$ V $0.5-288$ V

Operative range $(0-340)$ V

Permissive overload 420 V cont.

450 V 10 s

Burden < 20 mVA at 110 V

Frequency $f_r = 50/60$ Hz $\pm 5\%$

Optical ethernet module

Number of channels 1 or 2 (port A, B for IEC 61850-8-1 / IEEE C37.118 and port C, D for IEC 61850-9-2LE / IEEE C37.118)

Standard IEEE 802.3u 100BASE-FX

Type of fiber $62.5/125$ mm multimode fibre

Wave length 1300 nm

Optical connector Type ST

Communication speed Fast Ethernet 100 Mbit/s

N 1 Fault Data Recorder with Phasor Measurement Unit LogicLab FR947-EX

General Characteristics

Standard $19''$ rack mount

Height / Width / Depth: $6U$ or $9U$ / $19''$ / 31 to 40 cm

Operating temperature range: $-10 \div +55^\circ\text{C}$

Storage temperature range: $-40 \div +85^\circ\text{C}$

Relative Humidity: $< 95\%$

Atmospheric pressure: $70 \div 106$ kPa

Intrusion Protection: IP20

System frequency: $50/60$ Hz

Power supply

Power supply voltage (Vaux):

Universal AC/DC power supply

AC $88-264$ V $48-62$ Hz

DC $88-350$ V

Maximum power consumption: 40 W

Voltage dips and short interruption

Insensitive to 100% of Vaux for 50 ms (min)



Insensitive to 50% of Vaux for 100ms (min)

Analog inputs

4 to 32 analog inputs

Three different connections:

Screw fixing removable connector (standard)

Spring-clamp connectors for high reliability wiring

Barrier strips connectors for cables with ring terminals

Analog to digital conversion: 24 bit

One ADC per analog input

Sigma-Delta ADC with sampling frequency up to 5.7 MHz

PGA Amplifier for up to 5 different measuring range

Channel typology (voltage/current) in factory configurable

Dielectric strength: 3000V DC (1 min)

Configurable sample rate (fs):

up to 224 sample/period @16bit

up to 144 sample/period @24bit

Bandwidth (-3 dB): DC (0 Hz) ÷ 0.49·fs

Flat bandwidth(±0,005 dB): DC (0 Hz) ÷ 0.45·fs

Stop band attenuation: >100 dB (f>0.55·fs)

Resolution: 16 or 24 bit @1

SNR (Signal to noise ratio): >92 dB

Cross-over: < -92 dB

Current analog inputs

Max Full-scale: up to 150Arms (Standard)

Standard full-scales (FSI): 15A, 30A, 50A, 150A, 400A

Accuracy guaranteed range: 0,01·In ÷ FSI

RMS Accuracy (Standard): (0.1% of Reading + 0.005%·FSI)

RMS Accuracy (-C Option): (0.1% of Reading + 0.01%·FSI)

Accuracy (Low DC input): (0.01% of Reading + 0.0005%·FSI)

Voltage analog inputs

Max Full-scale: 700Vrms

Standard full-scales (FSV): 100V, 200V, 700V

RMS Accuracy (Standard): (0.1% of Reading + 0.005%·FSV)

Accuracy (Low DC input): (0.01% of Reading + 0.0005%·FSV)

Measure calculated and accuracy

Frequency** (±0.3 mHz)

ROCOF** (±1 mHz/s)

THD* (±0.5%)

Active, reactive and apparent powers*** (0.4%)

Power factor*** (±0.005)

Partial and total Energy*** (0.5%)