Technical Specification

Technical specification – Control Cabinet type GAI3 for 5 feeders with motorized switch disconnectors and 4 FPIs

Product code 2RCA047017

These pictures above may include equipment not listed in this specification.
**General**

The cabinet is made for remote control of 4 switch disconnectors and 1 busbar sectionalizer including position indication from switch disconnectors, busbar sectionalizer and earthing switches. The cabinet also includes 4 pcs of advanced fault passage indicators. The design also includes a communication gateway using GPRS/3G/LTE. The cabinet is intended to be mounted on top of the Ring Main Unit (RMU) and includes mounting equipment for ABB's SafeRing RMU.

**Enclosure**

- Al-Zn coated cabinet with painted doors (RAL7035)
  - IP43
  - h=383mm, w=1410mm, d=335mm
- 1-point locking mechanism per door with key
- 50W anticondensation heater
- Ventilated cabinet
- Connections to the cabinet:
  - 3 pcs Control cable connectors on left side and 2 pcs Control cable connectors on right side
  - 1 pcs Power supply connector for aux supply cable up to 3* 1,5 mm² (right side)
  - Bushing for earthing conductor (bottom and right side)
  - Bushing for sensor cable (bottom and right side)
  - Bushing for antenna cable (bottom and right side)
- Local operation from switch on door (Operation: Disabled / Enabled)

**Power supply equipment**

- 230VAC power supply
- Surge protection device with auxiliary contact
- AC side protection with MCB C6A
- DC side protected with 1 pcs MCB C6A and 1 pcs MCB C3A
- DC motor circuits protected with MCB C6A /cubicle
- supply for communication switch with 1 pcs MCB C1A
Auxiliary contacts for essential MCBs

Surveillance of essential MCB aux contacts and surge protection trip alarm

24 VDC output voltage

24V (12 V * 2 in serial), 24Ah long life sealed valve regulated lead acid batteries

Wiring and terminal blocks

Terminal blocks (minimum):
- 6 mm² short-circuitable for measurement transformer circuits
- 2.5 mm² for other 6A supply circuits

Wiring (minimum):
- Motor control circuits: 1.5 mm²
- 1.0 mm² for other circuits
- Equipment grounding circuits 4 mm²

Remote control equipment

1pcs ARC600 controller module
- ARC600A2324NA

1 set RIO600 Fault Passage Indication System
- 1 pcs MOD600APSML07 RIO600 power supply module
- 1 pcs MOD600FLECMIR RIO600 galvanic communication module with RJ-45 interface
- 4 pcs MOD600ASIM8F RIO600 sensor input module with fault passage indication that are supporting ABB current and voltage sensors
- 2 pcs MOD600ADIM8L RIO600 binary input module with 8 input
- 1 pcs MOD600ADOM4 RIO600 binary output module with 4 output

Functionality:
- Communication protocols:
  - IEC 60870-5-104
  - integrated GPRS/3G/LTE modem
  - RJ45 Ethernet port for external modem
- IEC 60870-5-101
  - DSUB9 serial port for external modem
- Communication media
  - GPRS/3G/LTE
- Monitoring of up to 5 objects (Switch Open/Close and Earth switch Open/Close)
- Control of up to 5 objects (Switch Open/Close)
- Integrated battery charger and monitoring
- Battery temperature measurement
- Heater control
- Support of ABB combined and separated current and voltage sensors for 4 feeders of 5 including:
  - 3 phase measurements U & I
  - 3 phase advanced fault passage indication (FPI)
    - including multifrequency admittance-based earth-fault detection algorithm (MFA)
      - sensitivity up to 10kohm in symmetrical networks
      - for high impedance earthed, compensated and unearthed networks
    - directional and non-directional overcurrent and earth-fault detection
  - Current and voltage ranges: 4A-8kA and 480V-48kV
  - Power measurements: P,Q,S and cos ϕ
  - Accuracy of line voltages, currents and active power is < 0.5% and for other power measurements <1%
  - Active/ reactive energy counters
  - Detection of the harmonic disturbances (TDD,TDH) up to the 8th harmonics
  - Peak and average values of measurements
  - SF6 gas alarm

**Note**

Please note that the antenna and the sensors are not included in the control cabinet scope and needs to be ordered separately.