Technical Specification

Technical specification – Control Cabinet type GAI3 for 3 feeders with motorized switch disconnectors and 3 FPIs

Product code 2RCA047014

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

ABB Oy
General

The cabinet is made for remote control of 3 switch disconnectors including position indication from switch disconnectors and 1 fused disconnector, and earthing switches. The cabinet also includes 3 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 the side of the Ring Main Unit (RMU).

Enclosure

- Painted steel cabinet with painted doors (RAL7035)
  - IP55
  - h=1046mm, w=380mm, d=330mm
- 1-point locking mechanism per door with key
- 50W anticondensation heater
- Ventilated cabinet
- Connections to the cabinet:
  - 4 pcs Control cable connectors on left side and 2 pcs Control cable connectors (on bottom of the cabinet)
  - 1 pcs Power supply connector for aux supply cable up to 3*1,5 mm² (on bottom of the cabinet)
  - Bushing for earthing conductor (on bottom of the cabinet)
  - Bushing for sensor cable (left side)
  - Bushing for antenna cable (on bottom of the cabinet)
- 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 battery test laod with 1 pcs MCB C3A
- 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), 17Ah 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
  - 3 pcs MOD600ASIM8F RIO600 sensor input module with fault passage indication that are supporting ABB current and voltage sensors
  - 1 pcs MOD600ADIM8L RIO600 binary input module with 8 input
  - 1 pcs MOD600ARTD4 RIO600 RIO600 RTD/mA input module

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 4 objects (Switch Open/Close and Earth switch Open/Close)
- Control of 3 objects (Switch Open/Close)
- Integrated battery charger and monitoring
- Temperature compensated battery charging
- Heater control
- Support of ABB combined and separated current and voltage sensors for 3 bays of 4 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.