Multifunction HMI
- Standard LCD and touch type screens together with mimic option
- 24 configurable tri-state LEDs selectable red/green/yellow provided at the local human-machine interface
- 7 programmable function keys and direct control buttons for open/close (O/I) and control authority (43R/L)
- Standard local USB port and three signal monitoring terminals for testing purposes
- Multi-language display

Metering and Recording
- Measurement of V, I, P, Q, S, f and THM%
- Alarms and events (each with 1,024) can be recorded with 1ms resolution.
- 8 most recent time-tagged fault records including pre-fault and fault values for currents and voltages in text format
- Disturbance records provided using sampled data from all analog inputs and binary signals selected, recorded in COMTRADE format

Extensive Hardware Options and Flexible Adaptation
- Comprehensive range of hardware components
- Main Processing/computing board with enhanced processor
- Wide variety of binary input & output combinations
- Plug-in communication module
- Flexible hardware combinations to meet specific applications

Function-wise Implementation
- Library of function blocks enables wide application for protection, control, measurement and other functions
- Protection elements and schemes
- Control schemes
- Metering and recording functions
- Individual function blocks work independently
- Easy IED customisation to add/delete particular function blocks
- Flexible implementation of new functions and modification of specific functions

TOSHIBA

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TOSHIBA

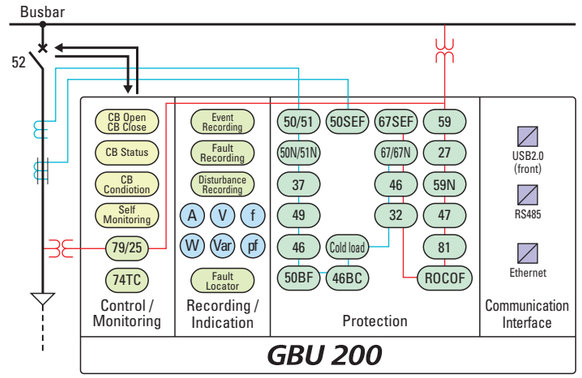
Leading Innovation

GR-200 Series
GBU 200
Bay Control IED

GR-200 Series — GBU 200

Bay Control IED

The GBU200, bay control unit is implemented on Toshiba's next generation GR-200 series IED platform and has been designed to provide control, protection and monitoring applications for power network equipment in electrical substations. This powerful and user-friendly IED will provide you with the flexibility to meet your application and engineering requirements in addition to offering high performance, the highest quality and operational peace of mind.



Features

- For control and monitoring of switchgear, transformers and other equipment or devices in EHV, HV, MV and LV substations
- Built-in feeder protection functions
- Suitable for single, double and one- and-a-half circuit breaker arrangements and for both GIS and AIS switchgear applications
- Various models and hardware options for flexible application depending on system requirements and controlled objects

Function / device number	Description	GBU200
Control function		
Control	Select-control	●
Interlock	Interlock	●
AutoSEQ	Automatic sequential control	●
Monitoring	Monitoring	●
DCB	Double command blocking	●
TAP	TAP control	●
DCAI	DCAI measurement	○
DCAO	DCAO control	○
SYNDIF	Synchrocheck between different network (e.g. between transmission line and generator plant)	●
MNOVL	Manual override	●
LoadShed	Load shedding	○
Protection		
50/67, 51/67	Non-directional / directional phase overcurrent protection (4 steps)	○
50HS /51HS	High-speed overcurrent protection (1 step)	○
50N/67N, 51N/67N	Non-directional / directional earth fault overcurrent protection (4 steps)	○
50NHS/ 51NHS	High-speed earth fault overcurrent protection (1 step)	○
50SEF/51SEF	Non-directional / directional sensitive overcurrent protection (2 steps)	○
46/67	Non-Directional / directional negative sequence phase over-current protection (2 steps)	○
50BF	Circuit breaker failure protection (2 stages)	○
37	Phase under-current protection (2 steps)	○
46BC	Broken conductor protection	○
49	Thermal overload protection	○

Function / device number	Description	GBU200
32	Directional power protection	○
59	Positive sequence phase over-voltage protection (4 steps)	○
59N	Earth fault over-voltage protection (4 steps)	○
47	Negative sequence phase over-voltage protection (2 steps)	○
27	Phase under-voltage protection (4 steps)	○
81	Frequency protection (6 steps)	○
ROCOF	Rate of change of frequency (df/dt) (6 steps)	○
51V	Voltage restricted overcurrent	○
85-50N/ 51N/67N	Command protection by OC/EF and DOC/DEF schemes	○
50SOTF	Switch on to fault protection	○
21FL	Fault locator	○
ICD	Inrush current detection function	○
CLP	Cold load protection function	○
79	Autoreclosing function (upto 4 shots)	○
25	Voltage check for autoreclosing	○
Common		
TCS	Trip circuit supervision	●
VTF	VTF detection function	●
CTF	CTF detection function	●
Event	Event, alarm and statistics	●
Measurement	Measurement	●
PQRQTY	Power quality monitoring	○
Counter	Counter	●
PLC	Programmable logic controller	●

●: Standard, ○: Equipped depending on the hardware and model configuration