


FACTSHEET

Entellisys® 5.6

Low voltage switchgear



Entellisys® continues to be a product of both revolutionary and incremental change.

It reflects ABB's unmatched knowledge of power distribution and mission critical requirements, bringing a remarkable advantage over traditional low voltage switchgear.

Entellisys low voltage switchgear is designed for mission-critical applications, providing a better integrated, more responsive approach to power distribution needs. In healthcare, education, data centers, oil and gas, and industrial applications, Entellisys addresses customer concerns related to operator safety, arc flash mitigation, diagnostics, and total cost of ownership.

Main features/Ratings

- Up to 6000 A horizontal bus and 5000 A breakers
- 150 kAIC @ 480 V, 100 kAIC @ 600 V
- EntelliGuard E breakers
- UL-1558 equipment and UL-1066 breakers
- NEMA 1, 3R (contact factory)
- **Control stack in climate-controlled area
- IEEE C37.20.1 (non-arc-resistant)
- UBC-2015 Seismically rated

Optional features

- Rear extensions to 60, 67, 74-inch-deep frame
- Infrared scanning window in rear doors
- Lockable T-handles on circuit breaker cubicle door
- Lockable T-handles on rear doors
- Overhead breaker lifting hoist

New in Entellisys 5.6

- New CPU with latest modern processor
- New CPU chassis/enclosure
- Update HMI with capacitive touchscreen and 19-inch display with software to Windows 10
- New IO offering improving system reliability with LED status indication maintained

Benefits of Entellisys

- Increased uptime with a redundant architecture and comprehensive diagnostics to identify issues quickly
- Keep operators outside the arc flash boundary with the touchscreen HMI in a remote control stack or wall mounted enclosure
- Lower Incident Energy with dynamic zone selective interlocking and bus differential protection
- Easy remote communications over Modbus TCP/IP. All of the lineup's information and control at your finger tips

Fuseless 100 kA interrupting capacity

Entellisys low voltage switchgear with EntelliGuard® E circuit breakers, has all of the valuable benefits of Entellisys at higher kA IC ratings without fuses. EntelliGuard E circuit breakers can be used in the same lineup with EntelliGuard circuit breakers. This flexibility provides the ability to have lineups with fuseless breakers from 800 A through 5000 A with 100 kA interrupting capacity.

Enhanced selectivity and arc flash protection

Entellisys 5.6 expands the selectivity capability of Entellisys as well as increasing arc flash protection in three significant ways:

1. Instantaneous Zone Selective Interlocking

(IZSI) Input – Downstream breakers with the EntelliGuard Trip Unit (ETU) or microEntelliGuard™ Trip Unit (MET) trip unit can be connected to the upstream Entellisys breakers. When a downstream fault occurs the trip units can send a signal and restrain the upstream Entellisys breakers with a longer time delay. IZSI with faster clearing times results in lower incident energy at downstream equipment while maintaining selectivity with the downstream breakers.

- #### 2. ZSI Output via IEC 61850
- Entellisys 5.0 can communicate over IEC 61850 to upstream relays (Multilin F-35 feeder relay and the 345 transformer relay) located on the MV primary breakers. This can dramatically improve the protection and reduce the arc flash incident energy of the incoming line-side bus. Entellisys will communicate to the upstream relay to restrain tripping for faults downstream of the LV main breaker. ZSI output to upstream relays over wires is still available by using discrete I/O. Communicating over IEC 61850 (Ethernet physical layer) enables ZSI upstream capability over a large geographic area and it also greatly simplifies the interconnections by using a local area network.

3. Selective Discrimination IOC (Instantaneous

Overcurrent) - In addition to Instantaneous protection users now also have Selective Discrimination IOC settings to choose from. Selective Discrimination IOC provides better coordination with downstream current limiting breakers and fuses because Entellisys can determine if a downstream breaker/ fuse is clearing a fault based on the waveform profile. This provides the capability to reduce incident energy with Instantaneous clearing times while maintaining selectivity with downstream current limiting devices.

All of the selectivity enhancements are available with EntelliGuard E circuit breakers.

EntelliGuard E ratings



Entellisys switchgear with EntelliGuard E or EntelliGuard power circuit breakers complies with ANSI standards C37.20.1 and is UL listed to standard 1558. The equipment has been conformance tested according to ANSI C37.51 and also meets the requirements for the CSA label.

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EntelliGuard E power circuit breaker ANSI/UL 1066 ratings

Breaker cat. no.		Interrupting rating tier (kA)			
Breaker type		254V	508V	635V	1/2s withstand
Envelope 1	EE08S	65	65	50	50
	EE08N	65	65	65	65
	EE08H	85	85	65	65
	EE08P	100	100	65	65
	EE16N	65	65	65	65
	EE16H	85	85	65	65
	EE16P	100	100	65	65
	EE20N	65	65	65	65
	EE20H	85	85	65	65
	EE20P	100	100	65	65
Envelope 2	EE32N	65	65	65	65
	EE08E	85	85	85	85
	EE08M	100	100	100	85
	EE16E	85	85	85	85
	EE16M	100	100	100	85
	EE20E	85	85	85	85
	EE20M	100	100	100	85
	EE32E	85	85	85	85
EE32M	100	100	100	85	

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Top reasons customers choose Entellisys

System-wide value delivered over broad functionality

	Benefits	Features
Arc flash mitigation	Entellisys lowers incident energy across the entire range of perspective fault currents and does it selectively. Lower incident energy protects equipment by causing less damage and faster recovery	Bus differential protection Dynamic ZSI HRGF
	The HMI placed outside the arc flash zone keep operators at a safe distance to monitor, control and troubleshoot the gear	Control stack Remote racking Remote HMI
Improved power system performance	Entellisys aids in uptime by providing fast protection while maintaining selectivity. Protection settings can change based on topography	Protection and selectivity – 87B, DZSI, MSGF, HRGF, etc. Setting changes based on topography
	Downtime can be prevented or minimized with diagnostics data. The event log is synchronized to microseconds providing accurate SOE. All breaker waveforms are synchronized and captured any time one breaker operates	Accurate event log for analysis Synch. WF capture for analysis
	Control is tightly integrated for secure, reliable sequences of operations. Circuit breaker predictive maintenance data aids in performance	Closely integrated control CB predictive maintenance
Flexibility, ease of use	As needs change, so does Entellisys. Features (relays, metering, etc.) can be added with no downtime. It is a platform that evolves with the facility	Redundant architecture Modify control logic with no downtime
	Intuitive HMI makes it easy for users to understand power system dynamics and status. Information at your fingertips. User access matched to skill level	Easy to monitor & control Mobile metering
Efficient and easy remote monitoring	Entellisys provides the entire lineup information via one interface for easy integration via Modbus TCP/IP. Entellisys maintains comm addresses in equipment so no changes with breaker exchanges. Control interfaces are flexible with 3 types: discrete I/O, PLC interface for fast exchange of control data, GOOSE for digital values. PC based HMI remote software	Architecture Modbus TCP/IP PLC interface IEC 61850 GOOSE for digital values HMI remote software

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