


High Impedance Bus Differential – Selector Guide

Features	Device	MCAG/MVTP	MFAC/MVTP	MIB	P14X
APPLICATIONS					
Busbars with up to # circuits (centralized)					
Busbars with up to # circuits (distributed)					
High impedance Bus differential		•	•	•	•
PROTECTION & CONTROL					
Number of Differential Protection Zones		1	1	1	1
Check Zones					
Typical Operating Time (cycles)		<1.5	<1.5	<1.5	<1.5
Bus differential	87B	•	•	•	•
IOC, Ground/Neutral/Phase	50G/N/P			•	G/N/P
TOC, Ground/Neutral/Phase	51G/N/P				G/N/P
Overvoltage Auxiliary/Neutral	59X/N				•
Phase Undervoltage	27P				•
Current Transformer Supervision				•	•
Sensitive Overvoltage (Buswire Supervision)		•	•		•
Breaker Failure	50BF				•
End Fault Protection					
Breaker Flashover					
Lockout Functionality	86				•
Dynamic Bus Replica					
AUTOMATION					
Programmable Logic				•	•
FlexElements™					
Watchdog/Critical Failure Self-Test Monitoring					•
Settings Groups				2	4
Non-volatile latches (including contact latches) (max)					•
Contact Inputs Programmable - (max)				4	32
Contact Outputs Programmable - (max)				4	32
Contact Outputs non programable		5	3		
Virtual Inputs - (max)					
Virtual Outputs - (max)					
GOOSE Inputs / Remote Inputs (up to)					128
GOOSE Outputs / Remote Outputs (up to)					32
Direct Inputs/Outputs					•
User-Programmable LEDs (max)				4	18
User-definable mimic, metering, and annunciator					
User-Programmable Push Buttons (max)					10
User-Programmable Self Test					
User Definable Displays					
User Programmable Self-Test Contact					•
Timers				•	•
Selector Switch					
Digital Counters					
Digital Elements					
IRIG-B Input					•

Features Continued	Device	MCAG/MVTP	MFAC/MVTP	MIB	P14X
MONITORING & METERING					
Current				•	•
Voltage					•
Symmetrical Components					•
Power - Apparent , Real, Reactive					•
Energy					•
Power Factor					•
Frequency					•
Event Recorder - Number of Events				24	512
Oscillography				•	•
Trip/Close Coil Supervision				•	•
COMMUNICATIONS					
Front Port Local Access				•	•
RS232 Port				•	•
RS485 Port				•	•
Ethernet Port (Fiber and Copper, max)					•
Direct Fiber (800nm, 1330nm, 1550nm)					•
PROTOCOLS					
ModBus (RTU)				•	•
ModBus (TCP/IP)					
DNP 3.0					•
IEC60870-5-103					•
IEC60870-5-104					
IEEE 1588					•
IEC61850					•
IEC62439 / PRP					•
Simple Network Time Protocol (SNTP)					•
HTTP					
TFTP					
Process Bus (IEC 61850-9-2)					
Process Bus (IEC 61850-9-2)					

* High impedance bus differential is available when applying the Multilin B30 with the Multilin HID module.

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Features	Device	P741/2/3	P746	P747	B30	B90	B95 ^{PLUS}
APPLICATIONS							
Busbars with up to # circuits (centralized)			18	18	6	24	
Busbars with up to # circuits (distributed)		28					24
High impedance Bus differential							
PROTECTION & CONTROL							
Number of Differential Protection Zones		8	2	4	2	6	6
Check Zones		•	•	•	•	•	•
Typical Operating Time (cycles)		<0.65	<0.85	<0.85	<1	<1	<1
Bus differential	87B	•	•	•	•	•	•
IOC, Ground/Neutral/Phase	50G/N/P	G/N/P	G/N/P	P	G/N/P	P	P
TOC, Ground/Neutral/Phase	51G/N/P	G/N/P	G/N/P	P	G/N/P	P	P
Overvoltage Auxiliary/Neutral	59X/N				X/N		
Phase Undervoltage	27P		•	•	•	•	•
Current Transformer Supervision		•	•	•	•	•	•
Sensitive Overvoltage (Buswire Supervision)							
Breaker Failure	50BF	•	•	•	•	•	•
End Fault Protection		•	•	•	Logic	•	•
Breaker Flashover					•		
Lockout Functionality	86	•	•	•	•	•	•
Dynamic Bus Replica		•	•	•	•	•	•
AUTOMATION							
Programmable Logic		•	•	•	•	•	•
FlexElements™						•	
Watchdog/Critical Failure Self-Test Monitoring		•	•	•			
Settings Groups		4	4	4	6	6	2
Non-volatile latches (including contact latches) (max)		•	•	•	16	16/box	48
Contact Inputs Programmable - (max)		24/box + 8	40/box	40/box	80	96/box	288
Contact Outputs Programmable - (max)		16/box + 8	32/box	32/box	64	64/box	96
Contact Outputs non programmable							
Virtual Inputs - (max)					32	32	64
Virtual Outputs - (max)					64	64	288
GOOSE Inputs / Remote Inputs (up to)		64/box	32/box	128/box			
GOOSE Outputs / Remote Outputs (up to)		32/box	32/box	128/box			
Direct Inputs/Outputs					•	•	
User-Programmable LEDs (max)		18/box	18/box	18/box	48	48/box	
User-definable mimic, metering, and annunciator							•
User-Programmable Push Buttons (max)		10/box	10/box	10/box	12	12/box	
User-Programmable Self Test					•	•	•
User Definable Displays					•	•	3 SLDs
User Programmable Self-Test Contact		•	•	•	•	•	•
Timers		•	•	•	•	•	•
Selector Switch					•		
Digital Counters					•		
Digital Elements					•	•	
IRIG-B Input		•	•	•	•	•	•

Bus Protection

Features Continued	Device	P741/2/3	P746	P747	B30	B90	B95 ^{PLUS}
MONITORING & METERING							
Current		•	•	•	•	•	•
Voltage			•	•	•	•	•
Symmetrical Components		•	•	•	•		
Power - Apparent , Real, Reactive					•		
Energy					•		
Power Factor					•		
Frequency		•	•	•	•	•	•
Event Recorder - Number of Events		512	512	512	1024	1024	12288
Oscillography		•	•	•	•	•	•
Trip/Close Coil Supervision		•	•	•	•	•	•
COMMUNICATIONS							
Front Port Local Access		•	•	•	•	•	•
RS232 Port		•	•	•	•	•	
RS485 Port		•	•	•	•	•	
Ethernet Port (Fiber and Copper, max)		•	•	•	3	3	3
Direct Fiber (800nm, 1330nm, 1550nm)		•	•	•	•	•	
PROTOCOLS							
ModBus (RTU)		•	•	•	•	•	
ModBus (TCP/IP)					•	•	•
DNP 3.0			•	•	•	•	•
IEC60870-5-103		•	•	•	•	•	
IEC60870-5-104					•	•	•
IEEE 1588					•	•	
IEC61850		•	•	•	•	•	•
IEC62439 / PRP		•	•	•	•	•	
Simple Network Time Protocol (SNTP)		•	•	•	•	•	•
HTTP					•	•	•
TFTP					•	•	•
Process Bus (IEC 61850-9-2)		P743	•		•		•

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