M FAMILY FEATURE COMPARISON

The M+ PC software program may be run on a PC with the Windows 95/98/NT operating systems. The program may be used locally on the RS232 front serial port or remotely on the RS485 port. It provides full access to the relay data with the following features:

- View actual values
- View relay status
- View/edit settings on-line/off-line
- View event recorder for troubleshooting
- Configure inputs, outputs and LEDs through programmable logic
- Utilize a custom protection curve
- Upgrade relay firmware

All status information such as target messages and digital input/output states may be viewed with the M+ PC software.

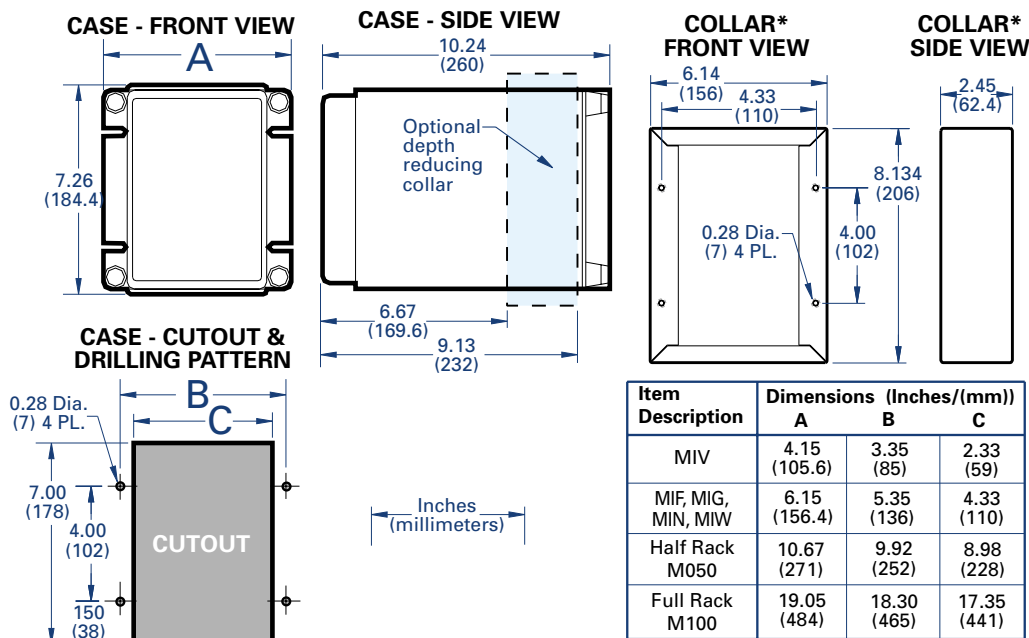## M FAMILY COMMON GUIDEFORM SPECIFICATIONS

The relay shall be provided in one integrated package suitable for incorporation in an integrated substation or industrial protection and control system. It shall be modular design to easily facilitate upgrading or repair by replacement of modules. The faceplate interface shall include an alphanumeric vacuum fluorescent display, keypad, and LED target indicators.

	FEATURES	DEVICE	MIF	MIG	MIN	MIV	MIW
PROTECTION	Phase Undervoltage	27P				■	
	Directional Low Forward Power	32LF					■
	Directional Reverse Power	32RP					■
	Loss of excitation	40					■
	Current Unbalance	46		■			
	Voltage Unbalance	47				■	■
	Thermal Image Unit	49	■	■			
	Ground Overvoltage	59N				■	
	Ground IOC	50NH/50NL	■	■	■		
	Phase IOC	50PH/50PL	■	■	■		
	Ground TOC	51N	■	■			
	Phase TOC	51P	■	■			
	Phase Overvoltage	59				■	
	Fuse Failure	VTFF					■
	Ground Directional	67N			■		
	Isolated Ground Directional	67IG			■		
	Petersen Coil Ground Directional	67PC			■		
	Overfrequency	81O				■	
	Underfrequency	81U				■	
	Starts/hour and Locked Rotor			■			
	Undercurrent			■			
	Restricted Earth Fault	87R		O			
	Breaker Failure Protection		O	■	O		
	Programmable I/O and LEDs		O	■	O		
	Breaker Arcing Current		O				
	Programmable Logic		O	■	O		
	Multiple Setting Groups		■	■	■		■
MONITORING AND METERING	Event Recorder		O	■	O	■	■
	Oscillography		O	■	O	■	■
	Thermal Capacity		■	■	■		
COMMUNICATIONS	Alphanumeric Display		■	■	■	■	■
	3 button keypad		■	■	■	■	■
	ModBus® Communications		■	■	■	■	■
	RS232 Serial Port		■	■	■	■	■
	RS485 Serial Port		■	■	■	■	■

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DIMENSIONS

The M Family of products have a drawout construction in 4" wide modules for relays including current channels or in 2" wide modules for relays including only voltage channels. These drawout modules may be mounted in standard 19" racks, half racks, individual cases, or supplied with depth reducing collar for space efficiency.

CASE - FRONT VIEW
A
7.26 (184.4)

CASE - SIDE VIEW
10.24 (260)
Optional depth reducing collar
6.67 (169.6)
9.13 (232)

COLLAR* FRONT VIEW
6.14 (156)
4.33 (110)
8.134 (206)
4.00 (102)
0.28 Dia. (7) 4 PL.

COLLAR* SIDE VIEW
2.45 (62.4)

CASE - CUTOUT & DRILLING PATTERN
B
C
0.28 Dia. (7) 4 PL.
7.00 (178)
4.00 (102)
CUTOUT
150 (38)
Inches (millimeters)

Item Description	Dimensions (Inches/(mm))		
	A	B	C
MIV	4.15 (105.6)	3.35 (85)	2.33 (59)
MIF, MIG, MIN, MIW	6.15 (156.4)	5.35 (136)	4.33 (110)
Half Rack M050	10.67 (271)	9.92 (252)	8.98 (228)
Full Rack M100	19.05 (484)	18.30 (465)	17.35 (441)

* MIV excluded   832755a8.ai