MFC 4150 / 4150X HART® Communicator

MFC 4150 General Purpose
CE

MFC 4150X Intrinsically Safe

ATEX, $_c$UL$_{us}$

HART
COMMUNICATION PROTOCOL

Competitive Comparison

vs. Rosemount 375

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MFC Competitive Comparison

Key comparisons: Meriam MFC versus the Rosemount 375

Comparison Item	Meriam MFC 4150 / X	Rosemount 375
Availability ("On" to HART communication)	15 seconds (typical)	1 minute 20 seconds (typical)
Battery life	60 hrs (6 ea AA alkaline) 27 hrs with back light on	2 - 4 hours per rechargeable pack
Std Config Memory	200 Configurations	25 Configurations
Dimensions	10.375" (L) x 4.125" (W) x 1.875" (D); wt = 1.7 lbs	10" (L) x 5¾" (W) x 2¼ (D), 2 lbs 4 ozs
Ergonomics	Comfortably handheld	Larger handheld
Review feature	Includes Edit capability	Review only; no edit
Alpha character entry	Full alpha key pad	Coded alpha entry or touch screen w/stylus

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MFC Competitive Comparison

Rosemount 375

Meriam MFC 4150

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Comparing 375H to MFC pricing

Price Comparison

Item	Rosemount 375			Delta	Meriam MFC 4100		
	Part Number	Description	Price		Price	Description	Part Number
1	375HR1ENAU	Communicator, HART, one battery pack, charger, soft case, memory for 25 config saves	$3,695	10.6%	$3,302	Communicator - HART, AA alkaline batteries [3], universal AC adapter, soft case, memory for 200 config saves	MFC 4150
2	375HR1ENAU	Item #1 plus spare battery pack	$4,070	18.9%	$3,302	Not applicable, use Item #1	MFC 4150
3	375HR1ENAU	Item #2 plus Easy Upgrade [1]	$4,645	17.2%	$3,847	Same as Item #1 plus DLS [4]	MFC 4150 w/ DLS
4	375HR1EKLU	Item #3 plus configuration Expansion Module [2]	$5,140	25.2%	$3,847	Not applicable, use Item #1	MFC 4150 w/ DLS
5	375HR1EKLUC	Item #4 plus Intrinsic Safety ATEX	$5,365	24.6%	$4,046	Item #3 plus Intrinsic Safety ATEX, $_c$UL$_{us}$	MFC 4150X
	375 Base Unit includes: Communicator, System Card, NiMH Battery Pack, Recharger/Power Supply, Lead set with Connectors, Carrying Case, Start Up Guide, User's Manual, Resource CD, Stylus and Straps				MFC Base Unit includes: Communicator, AA alk batts, Universal AC Power Supply, Lead set with Connectors & 250Ω Resistor, Serial Cable, Resource CD, User's Manual, Protective Boot, Soft Carrying Case w/ shoulder strap, MFC straps (hand and shoulder)		

Notes

[1] Easy Upgrade is Rosemount's internet upgrade for DDs

[2] Expansion module expands the 375's configuration memory from 25 configurations to 500. The 375 base price includes supports for just 25 configurations. The base price of the Meriam MFC 4150X supports 200 configuration saves.

[3] AA NiMH rechargeable batteries and external charger are available separately. Use NiMH batteries for general purpose models (MFC 4150) only. Use only approved alkaline AA batteries in Intrinsically Safe models (MFC 4150X)

[4] DLS is Meriam's internet upgrade for DOFs (DD equivalent)

Source: Rosemount 375 Field Communicator USD List Price sheet and Meriam F/N MFC4150:110-1 USD List Price sheet

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MFC Competitive Comparison

MFC 4150 / 4150X is the best value in HART communicators available.

- Significant Price Advantage

- Superior Performance

- Ergonomics and Features provide superior usability

- Faster availability makes users more efficient and productive

- Responsive factory support

MFC Competitive Comparison

MFC Advantages…

- Faster availability: "On" to HART communication in 15 seconds

- 60 hours of battery life from 6 AA alkaline batteries

- Review / Edit mode

- Full alphanumeric key pad

- Dedicated text editing keys

- Thumb keys (left hand) for menu Up, Down, and Select

- Quick Menu access key

- 13 line display

- Off / medium / bright back light

Soft Keys

Dedicated Keys

Numeric / Alpha Keys

Alpha / Symbol Keys

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Software Features		
HART Device Support	✓	✓
Foundation Fieldbus Device Support	✓	
Field upgrade of firmware / software	✓	✓
Field upgrade of Device Descriptions	✓	✓
Operating System	Win CE 3.0	**Dedicated**
Start-up Time (typical)	1 min 20 sec	**15 sec**
HART Loop Diagnostics	✓	
Capture record script data	✓	✓
Intelligent text entry		✓

• The 375's Win CE 3.0 operating system is needed for Foundation Fieldbus support, not for HART. HART users suffer for it – higher price and almost 1 minute to launch CE operating system plus another 20 seconds to launch HART application!

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Hardware Features		
Keypad supports full alphanumeric		✓
Thumb keys for one-handed operation		✓
Custom fit, use-in-place soft case		✓
Slip on protective rubber boot		✓

- MFC 4150 / 4150X offers the only complete alphanumeric keypad

- MFC thumb keys (left side) offer one-handed menu navigation

- Custom fit, use in place soft case stores spare batteries and test leads

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Hardware Features – Speed / Memory / Communications		
Processor	SH3 @ 80 MHz (Win CE Overhead)	**HC12 @ 8MHz**
Application Memory, dedicated	32 MB	**256 KB**
Flash Memory	32 MB (shared w/ DDs, configs, event	**16 MB (dedicated to DOFs)**
Expansion Memory	128 MB optional	**NA**
Standard Configuration Memory	25 (shared)	**200 (dedicated)**
External Communications	IrDA port	**Serial**

• Standard MFC configuration memory saves users $495 over 375's optional configuration memory module

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Screen		
Height	2.3 inch	**2.6 inch**
Width	3.0 inch	**2.6 inch**
Diagonal	3.8 inch	**3.7 inch**
Area	6.9 sq. inch	6.8 sq. inch
Resolution	14 x 40 character	**13 x 21 character**
Touch Screen	✓	
Graphics capable	✓ **(1/4 VGA)**	✓
Backlit display	✓	✓

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Battery / Power		
Battery life	8 hrs (literature) 2 – 4 hrs typical	**Alkaline (req'd for I.S. units):** **60 hrs w/o back light** **27 hrs w/ back light**
Battery charge period	1 – 2 hrs	**4 – 6 hrs (external when NiMH used with general purpose units)**
Alkaline batteries	**No**	✓ **req'd for I.S. service**
Intelligent power indicator	✓	✓
Exchange batt in hazardous area	✓	**No**

- 375 FAQ literature→ recommends purchasing spare battery pack for $325 each if using more than 8 hours

- Field feedback on 375 battery → significantly less than 8 hours operation per re-charge; reports of 1 to 2 hours per re-charge are common

- MFC uses alkaline or NiMH batteries for general purpose areas. Use only alkaline batteries for hazardous areas. NiMH batteries recharge in separate, external charger.

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Approvals / Certifications		
UL		$_cUL_{us}$
FM	✓	
CSA	✓	$_cUL$
CE	✓	✓
CENELEC	✓	
ATEX	✓	✓
FISCO	✓	

- ATEX replaced CENELEC requirement in Europe as of June 30, 2003

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MFC Competitive Comparison

Comparing…	375H Field Communicator	MFC 4150 HART® Communicator
Configuration Management Software Compatibility		
AMS 6.1 or earlier (Emerson)	N/A	**N/A**
AMS 6.2 (Emerson)	✓	**N/A**
DMS 3.xx (Meriam)	N/A	✓

- HART configurations are not recognized by competing manufacturers

- No common interface specification exists, and none is expected to be developed

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MFC Competitive Comparison

MFC 4150X ATEX
Intrinsically Safe

⟨Ex⟩ II 1 G; Ex ia IIC T4
Intrinsically Safe, Exia
Class I, Div. 1 Groups A, B, C, D
-5º C < Ta < +50º C

$_c$UL$_{us}$ Listed

ATEX Instrument Category 1:
Continuous presence of potentially
explosive atmosphere

375 ATEX
Intrinsically Safe

⟨Ex⟩ II 2 G (1GD)
EEx ia IIC T4
(Tamb = -10º C to +50º C)

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MFC Competitive Comparison

Available DOFs (DOFs are Meriam's equivalent to DDs):

- MFC 4150 / 4150X communicates with all HART devices at the Universal and Common Practice Command levels

- MFC 4150 / 4150X currently supports the 410 most commonly installed HART devices at the Device Specific Command level (approximately 1000 HART DDs are available)

- Check the "Available DOFs" list at www.meriam.com/customers/past.asp to confirm Device Specific coverage of needed devices