HART[®] Handheld DD Installation & Operation Manual

MT3809G Series Variable Area Flow Meters



Beyond Measure

Essential Instructions Read before proceeding!

Brooks Instrument designs, manufactures and tests its products to meet many national and international standards. These products must be properly installed, operated and maintained to ensure they continue to operate within their normal specifications. The following instructions must be adhered to and integrated into your safety program when installing, operating and maintaining Brooks Instrument products.

- · To ensure proper performance, use qualified personnel to install, operate, update, program and maintain the product.
- Read all instructions prior to installing, operating and servicing the product. If this instruction manual is not the correct manual, please see back cover for local sales office contact information. Save this instruction manual for future reference.
- A WARNING: Do not operate this instrument in excess of the specifications listed in the Instruction and Operation Manual. Failure to heed this warning can result in serious personal injury and / or damage to the equipment.
- If you do not understand any of the instructions, contact your Brooks Instrument representative for clarification.
- Follow all warnings, cautions and instructions marked on and supplied with the product.
- A WARNING: Prior to installation ensure this instrument has the required approval ratings to meet local and national codes. Failure to heed this warning can result in serious personal injury and / or damage to the equipment.
- Install your equipment as specified in the installation instructions of the appropriate instruction manual and per applicable local and national codes. Connect all products to the proper electrical and pressure sources.
- Operation: (1) Slowly initiate flow into the system. Open process valves slowly to avoid flow surges. (2) Check for leaks around the flow meter inlet
 and outlet connections. If no leaks are present, bring the system up to the operating pressure.
- Please make sure that the process line pressure is removed prior to service. When replacement parts are required, ensure that qualified people use replacement parts specified by Brooks Instrument. Unauthorized parts and procedures can affect the product's performance and place the safe operation of your process at risk. Look-alike substitutions may result in fire, electrical hazards or improper operation.
- Ensure that all equipment doors are closed and protective covers are in place to prevent electrical shock and personal injury, except when
 maintenance is being performed by qualified persons.
- A WARNING: For liquid flow devices, if the inlet and outlet valves adjacent to the devices are to be closed for any reason, the devices must be completely drained. Failure to do so may result in thermal expansion of the liquid that can rupture the device and may cause personal injury.

European Pressure Equipment Directive (PED)

All pressure equipment with an internal pressure greater than 0.5 bar (g) and a size larger than 25mm or 1" (inch) falls under the Pressure Equipment Directive (PED).

- · The Specifications Section of this manual contains instructions related to the PED directive.
- Products described in this manual are in compliance with EN directive 97/23/EC.
- · All Brooks Instrument Flowmeters fall under fluid group 1.
- Products larger than 25mm or 1" (inch) are in compliance with PED category I, II or III.
- Products of 25mm or 1" (inch) or smaller are Sound Engineering Practice (SEP).

European Electromagnetic Compatibility (EMC)

The Brooks Instrument (electric/electronic) equipment bearing the CE mark has been successfully tested to the regulations of the Electro Magnetic Compatibility (EMC directive 2004/108/EC).

Special attention however is required when selecting the signal cable to be used with CE marked equipment.

Quality of the signal cable, cable glands and connectors:

Brooks Instrument supplies high quality cable(s) which meets the specifications for CE certification.

If you provide your own signal cable you should use a cable which is overall completely screened with a 100% shield.

"D" or "Circular" type connectors used should be shielded with a metal shield. If applicable, metal cable glands must be used providing cable screen clamping. The cable screen should be connected to the metal shell or gland and shielded at both ends over 360 Degrees.

The shield should be terminated to an earth ground.

Card Edge Connectors are standard non-metallic. The cables used must be screened with 100% shield to comply with CE certification.

The shield should be terminated to an earth ground.

For pin configuration : Please refer to the enclosed Instruction Manual.

ESD (Electrostatic Discharge)

CAUTION: This instrument contains electronic components that are susceptible to damage by static electricity. Proper handling procedures must be observed during the removal, installation or other handling of internal circuit boards or devices.

Handling Procedure:

- 1. Power to unit must be removed.
- 2. Personnel must be grounded, via a wrist strap or other safe, suitable means before any printed circuit card or other internal device is installed, removed or adjusted.
- 3. Printed circuit cards must be transported in a conductive container. Boards must not be removed from protective enclosure until immediately before installation. Removed boards must immediately be placed in protective container for transport, storage or return to factory.

Comments

This instrument is not unique in its content of ESD (electrostatic discharge) sensitive components. Most modern electronic designs contain components that utilize metal oxide technology (NMOS, SMOS, etc.). Experience has proven that even small amounts of static electricity can damage or destroy these devices. Damaged components, even though they appear to function properly, exhibit early failure.

Contents

Section	1 Introduction	
[Description	4

Section 2 Installation

	_
Device Configuration	5
	U
0	

Section 3 Operation

Start Communication	11
Example - Access Process Variables	12
Example - Verify Tag Number	12
Example - Verify Engineering Units and Range	
Example - Set Low Alarm to Enable	13

Warranty, Local Sales/Service	Contact Information	Back Cover
-------------------------------	---------------------	------------

Description

This document will describe the procedure for removing the existing 3809 Device description (DD) and installing the 3809G DD to the 475 HART Handheld (HH) using the SD card from the 475HH and the "Easy Upgrade Utility" program.

Once installed access to the HART commands are available for Model 3809G.

Equipment Needed: Computer with SD slot, 475 Handheld

Device Configuration

This section contains the procedures for the installation of the 3809G DD.

a. Copy supplied 3809G DD files to location:

<Easy Upgrade Utility installation folder*>\MMI\Field Communicator Easy Upgrade Utility 3.6\PC Database\DD\HART\en

note: the actual <Easy Upgrade Utility installation folder> depends on original user installation of the Easy Upgrade Utility, e.g. C:\Program Files (x86)

- b. Remove SD card from 475HH
- c. Insert SD card into slot of computer
- d. Make sure the SD card is recognized (a new drive should be visible in Windows Explorer)
- e. Start "Easy Upgrade Utility"
- f. Press "Connect" (2. Connect Card Reader; Connection type Card Reader)

Upgrade	Upgrade		Help
Licensing & Registration Utilities	1. Update PC		
Settings	Update PC Last updated: 12/01/2016 13:49:54		More Details
Website	2. Connect Card Reader		
	Not connected	6	
	Connection type Card Reader +	Connect	
	3. Upgrade System Card		
	Not connected	\frown	More Options
	(

Field Communicator Easy Upgra	de Utility 3.6				
Upgrade	Upgrad	de			Help
Licensing & Registration Utilities	1. Update	PC	1-1-1-1-1-1-2-01-0010	12 40 54	
Settings	Updat	e PC	Last updated: 12/01/2016	5 13:49:04	More Details
Website	🖌 2. Connec	t Card Reader			
			Connected	6	
		Connection type	Card Reader	Disconnect	
	Unit Name:	None			More Details
	🖌 3. Upgrad	le System Card			
	System C	Card is up to date			More Options

g. This screen will be visible when connected:

h. Select "More Options"

Upgrade	Upgrad	de			Help
Licensing & Registration Utilities	1. Update	PC			
Settings	Update	e PC	Last updated: 12/01/2016	5 13:49:54	More Details
Website	🖌 2. Connec	t Card Reader			
		21	Connected	8	
		Connection type	Card Reader	Disconnect	
	Unit Name:	None			More Details
	🖌 3. Upgrad	e System Card			
	System C	ard is up to date			More Options
					\sim

- i. Go to "DDs" option.
- j. On the card reader look for DD named "Brooks Instrument 38xxVA Rev 1 DD1"
- k. Check the box and select "Remove"

and the second se	le Utility 3.6	E 8 23
pgrade	Upgrade	Help
icensing & Registration		
tilities	1. Update PC	
ettings	Last updated: 12/01/2016 13:45:54	More Details
ebsite	✓ 2. Connect Card Reader	
	Connected	
	Connection type Card Reader + Disconnect	
	Unit Name: None	More Details
	System Card is up to date	Close Tabs View
	System Software DDs HART configuration	1/120.04-0
	PC Database (English) U/U/U/KB Card Header	1/128.0KB
	HART BESTA	
	HART	-
		her Messtechnik
	HART HART Fieldbus Fieldbus South of the second	her Messtechnik
	HART HART Heldbus Fieldbus Soverall Soveralll	her Messtechnik
	HART HART H Heldbus H	her Messtechnik ument strument 38xVA Rev 1 DD 1 (r strument QUANTIM Rev 1 DD ustrument TRI-20 Rev 1 DD 1 (e
	HART HART Heldbus	her Messtechnik ument istrument 38xvVA Rev 1 DD 1 (r strument TRI-20 Rev 1 DD 1 [e ,
	Image: state	her Messtechnik sment strument 38xVA Rev 1 DD 1 (r strument 7RI-20 Rev 1 DD 1 (e
	HART HART Heldbus	her Messtechnik
	HART HART HART HART Heldbus Heldbus Select All Clear Al Femore Femore	her Messtechnik men strument SlovA Rev I DD 1 (r strument TRI-20 Rev I DD 1 (e , Select Al Clear Al
	HART HART Heldbus Fieldbus Select All Clear Al Remove	her Messtechnik enel strument SavVA Rev 1 DD 1 (r strument TRI-20 Rev 1 DD 1 (e , , Select Al Clear Al

I. Check if DD "Brooks Instrument 38xxVA Rev 1 DD1" was removed

		Bopp & Reuther Messtech	nnik
	Ē.	Bourdon Haenni	
	ė 🔲	Brooks Instrument	
		Brooks Instrument QU	ANTIM Rev 1 DD
		Brooks Instrument TR	1-20 Rev 1 DD 1 (e
	÷	BTG	
	÷	Buerkert Fluid Control Sys	stems
	÷	CIDRA CORP.	
	÷	CSI	
	T. tame		

m. Go to the PC data base and look for DD: "Brooks Instruments 38xxVA Rev 1 DD 2"

n. Check the box and answer YES to the pending question (Check an untested package?)

Field Communicator Easy Upgrad	e Utility 3.6	
Upgrade	Upgrade	Help
Licensing & Registration	1. Update PC	
Settings	Last updated: 12/01/2016 13:49:54	More Details
Website	2. Connect Card Reader	
	Connected	6
	Connection type Card Reader	Disconnect
	Unit Name: None	More Details
	3. Upgrade System Card Field Communicator Easy Upgrade Utility	23
	Differences exist between Check an untested package? Check an untested package?	Close Tabs View
	PC Database (English)	Yes No /0.0 kB
	BIFFI Bopp & Rether Messtechnik Bourdon Heenni Brocks Instrument Socks Anstrument SBAWA Rev 1 DD 1 (Socks Instrument TRI-20 Rev 1 DD 1 (Brocks Instrument TRI-20 Rev 1 DD 1 (BTG IIII)	Bopp & Reuther Messtechnik Bourdon Haenni Brooks Instrument QUANTIM Rev 1 DD Brooks Instrument TRI-20 Rev 1 DD 1 (e BTG Buerkert Fluid Control Systems CIDRA CORP. CSI 10
	Select All Clear All Remo	ve Select All Clear All

o. Press the "arrows" for transferring the DD to the card reader

Ungrado	Ungrad	le			Help
Upgrade Licensing & Registration	opproc				L
Utilities	1. Update	PC			
Settings	Update	e PC	Last updated: 12/01/2016 13	3:49:54	More Details
Website	🖌 2. Connec	t Card Reader			
		-	Connected	6	
		Connection type	Card Reader	- Disconnect	
	Unit Name:	None			More Details
	System Software	e DDs HART config	uration		
	System Softwar	e DDs HART config	uration 1/144.0 kB	(Card Reader	0/0.0 kB
	System Software PC Datat	e DDs HART config base (English)	uration 1/144.0 kB	Card Reader	0/0.0 kB
	System Softwarr	e DDs HART config base (English) BIFFI Bopp & Reuther Messtect burden Haenni	uration 1/144.0 kB	Card Reader	0/0.0 kB Messtechnik
	System Softwarn PC Data PC Data B B B B B C B C B B C B C B B C B C B B C	e DDs HART config base (English) SIFFI loopp & Reuther Messtect loopd & Reuther Messtect loopd & Instrument Beople (Instrument B	uration 1/144.0 kB	Card Reader	0/0.0 kB Messtechnik ^ nt ment QUANTIM Rev 1 D0 Meser TB1 20 D1 /
	System Softwar	e DDs HART config base (English) NFFI loop & Reuther Messtect lourdon Haenni trooks instrument 8 Brooks Instrument 38	uration 1/141.0.kB hnik xVA Rev 1 DD (/ XXVA Rev 1 DD (/	Card Reader Bopp & Reuther Brooks Instrume Brooks Instrume BTG	0/0.0 kB Messtechnik A nt ment QUANTIM Rev 1 DD ment TRI-20 Rev 1 DD 1 (e
	System Software	e DDs HART config base (English) IIFFI Jopp & Reuther Messted Jourdon Haenni Brooks Instrument 38 Brooks Instrument 78 Brooks Instrument 70	uration 1/144.0kB hnik xvVA Rev 1 DD (i) xvVA Rev 1 DD 2 JANTIM Rev 1 DD 1/2 DR ev 1 DD 1 (c	Card Reader Bopp & Reuther I Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Brook Instrume CIDRA CORP.	0/00kB Messtechnik A nt ment QUANTIM Rev 1 DD ment TRI-20 Rev 1 DD 1 (e introl Systems
	System Softwarn PC Data PC Data PC Data PC Data PC B	e DDs HART config base (English) DIFFI Jopp & Reuther Messted Jourdon Haenni Brooks Instrument 38 Brooks Instrument 38 Brooks Instrument 17 Brooks Instrument 17 Brooks Instrument 17 Brooks Instrument 17	uration 1/144.0 kB hnik xvVA Rev I DD (i xvVA Rev I DD (i -20 Rev I DD 1 (c +	Card Reader Bopp & Reuther (Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Brooks Instrume Buerkent Fluid Cc Buerkent Fluid Cc CIDRA CORP. IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	0/0.0 kB Messtechnik nt ment QUANTIM Rev 1 DD ment TRI-20 Rev 1 DD 1 (e introl Systems
	System Softwan	e DDs HART config base (English) INFFI Jopp & Reuther Messted Jourdon Haenni Brocks Instrument 8 Brocks Instrument 9 Brocks Instrument 0 Brocks Instrument 10 Brocks Instrument 17 Brocks Instrument 18 Brocks Instrument 1	uration 1/144.0 kB hnik xvVA Rev 1 DD (I) xvVA Rev 1 DD (I) xvVA Rev 1 DD (I) xvVA Rev 1 DD (I) -20 Rev 1 DD 1 (e + 4 (Dasc 20)	Card Reader Bopp & Reuther I Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Buerker Fluid CC CIDRA CORP.	0/0.0 kB Messtechnik nt ment QUANTIM Rev 1 DD ment TRI-20 Rev 1 DD 1 (e introl Systems
	System Softwan	e DDs HART config base (English) INFFI Jopp & Reuther Messted Jourdon Haenni Brocks Instrument 8 Brocks Instrument 9 Brocks Instrument 00 Brocks Instrument 10 Brocks Instrument	uration 1/144.0 kB hnik xvVA Rev 1 DD (I) xvVA Rev 1 DD (I) xvA Rev 1 DD (I) xvA Rev 1 DD (I) -20 Rev 1 DD 1 (e , All Clear All	Card Reader Bopp & Reuther (Brocks Instrume) Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Buerker Fluid Co CIDRA CORP. Buerker Fluid Co Buerker Fluid Co Buerke	0/0.0 kB Messtechnik nt ment QUANTIM Rev 1 DD ment TRI-20 Rev 1 DD 1 (e introl Systems Select All Clear All
	System Softwan	e DDs HART config base (English) IIFFI Joop & Reuther Messted Jourdon Haenni Brooks Instrument 8 Brooks Instrument 9 Brooks Instrument 00 Brooks Instrument 10 Brooks Instrument	uration 1/144.0 kB hnik wvVA Rev 1 DD (I xvXA Rev 1 DD L(I xvXA Rev 1 DD L(I xvXA Rev 1 DD L(I -20 Rev 1 DD L(I) -20 Rev 1 DD L	Card Reader Bopp & Reuther I Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Brocks Instrume Buerker Fluid CC DRA CORP. CSI M	0/00 kB Messtechnik nt ment QUANTIM Rev 1 DD ment TRI-20 Rev 1 DD 1 (e introl Systems Select All Clear All

eld Communicator Easy Upgrade	Upinty 3.6	C 12 23
grade	Upgrade	Help
nsing & Registration ties	1. Updato PC	
ngs	Update PC	153 More Details
ilte	🖌 2. Connect Carti Reader	
	Connected	- 6
	Connection type Card Beader	+ Daconvect
	Ltvik Hame	More Details
	BIFF)	Download is complete.
	Brocks Instrument 38aVA Rev 1 00 1 /-	OK
	Brooks Instrument 38XWA Rev I DO 21 Brooks Instrument QUANTIM Sev I DO Brooks Instrument TRI-30 Rev I OD 1 Brooks Instrument TRI-30 Rev I OD 1	Br Etg Buerken fluid Control Systems H ⊂ OpinA Cone. B ⊂ Cisi
	Select All Dear Al	Remove Select All Dear All

p. Confirmation will be received when the new DD is installed on the card reader

q. DD can be seen in the card reader location

Field Communicator Easy Upgrad	de Utility 3.6						
Upgrade	Upgrad	e				Help	
Licensing & Registration	1. Update I	PC					
Settings	Update	Last updated: 12/01/2016 13:49:54					
Website	📝 2. Connect Card Reader						
			Connected		- 6		
		Connection type	Card Reader		+ Disconnect		
	Unit Name:	None				More Details	
	3. Upgrade	System Card					
	Differences exist between PC and System Card Close Tabs View						
	System Software DDs HART configuration						
	PC Databa	ase (English)	0/0.0 kB		Card Reader	0/0.0 kB	
	HART			Г	BESTA		
	E- Fieldbus				BIFFI Boop & Reuther	Messtechnik	
					Bourden Hachr	i	
			1	>>>	Brooks Instrum	rument 38XXVA Rev 1 DD 2	
					Brooks Instr Brooks Instr	ument QUANTIM Rev 1 DD ument TRI-20 Rev 1 DD 1 (e	
					BTG	, -	
	Select All Clear All Remove					Select All Clear All	
					1		

r. Select "Disconnect"

Field Communicator Easy Upgrat	e Utility 3.6	
Jograde	Upgrade	Help
icensing & Registration	4.11.4.1.00	
Jtilities	1. Update PC	
ettings	Update PC	More Details
Vebsite	Z. Connect Card Reader	
	Connected	
	Connection type Card Reader	rieu
	Unit Name: None	More Details
	3. Upgrade System Card	
	Differences exist between PC and System Card	Gers Take Marrie
		Close Tabs View
	and the second se	
	System Software DDs HART configuration	
	PC Database (English) 0/0.0 kB (Card Re	ader 0/0.0 kB
	HART HE	ESTA
	tendbus tendb	IFFI
		ourdon Haenni
	>>>> P	rooks Instrument
		Brooks Instrument 38XXVA Rev 1 DD 2 (Brooks Instrument OLIANTIM Rev 1 DD
		Brooks Instrument TRI-20 Rev 1 DD 1 (e
		TG *
		m +
	Columb All Course No. Course	Columb All
	Select All Cledi All Remove	Select Al Clear Al
		1

- s. Remove the SD card from the computer
- t. Install the SD card into the 475HH
- u. HART communication with the model 3809G is now available

Start Communication







a. Select "CONT"



Brooks Instrument

Example - Access Process Variables:



Example - Verify Tag Number:



Example - Verify Engineering Units and Range



Example - Set Low Alarm to Enable:













LIMITED WARRANTY

Visit www.BrooksInstrument.com for the terms and conditions of our limited warranty.

BROOKS SERVICE AND SUPPORT

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

Visit www.BrooksInstrument.com to locate the service location nearest to you.

START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required.

For some process applications, where ISO-9001 Quality Certification is important, it is mandatory to verify and/ or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

SEMINARS AND TRAINING

Brooks Instrument can provide seminars and dedicated training to engineers, end users and maintenance persons.

Please contact your nearest sales representative for more details.

Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

TRADEMARKS Brooks is a trademark of Brooks Instrument, LLC All other trademarks are the property of their respective owners.



HART-Manual-MT3809G-EN/541B215AAG/2016-05

Global Headquarters Brooks Instrument 407 West Vine Street Hatfield, PA 19440-0903 USA Toll-Free (USA): 888-554-FLOW T: 215-362-3500 BrooksAM@BrooksInstrument.com

A list of all Brooks Instrument locations and contact details can be found at www.BrooksInstrument.com



Copyright 2024 Brooks Instrument, LLC All rights reserved. Printed in U.S.A.