

# Service

## Flow products



Whatever your need our Service team will keep your measurement and plant performing

### Measurement made easy

Support throughout the entire product lifecycle

## Introduction

When it comes to ensuring your flowmeters meet your expectations, we have a whole range of services designed to keep them delivering the performance you require.

We have developed a range of services tailored to meet different types of needs typically encountered in a plant. (Please check with your local service provider to find out if the service you are interested in is available in your area.)

To make it easy to select the right type and level of services you need, we have grouped them into three categories.

### **R** Rapid response

The device is a critical plant component and needs to be operational 100% of the time

- You require close to 100% availability, anything less will cost you money

### **O** Operational efficiency and performance improvement

The device needs to be a solid performer operating at its peak 100% of the time

- You require the maximum levels of stability, response and accuracy to keep your plant performing at optimum levels

### **L** Lifecycle management


Extend, analyze and optimize the life of your device

- You trust this product and don't want to change it
- Extending the life of your product is important to you


Flow service



## Rapid response

 Service offering	Description of service	Benefits	Reference number
Service agreement	On-call duty agreement	When a problem occurs it is good to know help is at hand when you need it:  Guaranteed on-site support within agreed time frame  Telephone support	2PAA112733
	Hot spare parts	When a problem occurs it is good to know help is at hand when you need it:  Guaranteed delivery of spare parts within agreed time frame  Telephone support and assistance in getting your products and plant back up and running	2PAA112734
	Call center	When a problem occurs it is good to know help is at hand when you need it:  Telephone support	2PAA112735
Training	On-site training	Equip your maintenance team with the skills to optimize the availability and efficiency of your products improving the profitability of your production: Detailed knowledge on how to use, maintain and troubleshoot problems with your products and processes  Recommendation on what spare parts and tools to purchase  The skills to perform on-site repairs safely and effectively	2PAA112736
	ABB Site training	We offer a range of standard training courses throughout the year. Contact your local service provider to find out what courses are available and when.	
Spares and consumables	Spare parts	When things go wrong, holding a small stock of spare parts on-site can save you critical downtime To identify which spare parts you should hold please contact your local ABB Service representative for support	

## Operational efficiency & performance improvement

 Service offering	Description of service	Benefits	Reference number
Engineering & consulting	Site Assessment	Understand your needs, process and flow conditions to get the maximum performance from your future product: Advice on what type of flow meter to install, including size, flange type, material selection, comms type, accuracy class, flow range, pressure rating, others...  Identify the best location for your flow meter in your process line  Advice on installation accessories including: flow straighteners, earthing rings / lining protection flanges, others...  Any special earthing requirements  Requirement for Verification explained	2PAA112737
	Measure flow rate in your process	Flow measurements using Clamp-on Ultrasonic to ensure you install the right product in the right position	2PAA112738
	Measure flow profile in your process	Flow profiling using AquaProbe measurements to understand process conditions: Advice on best location for your flow meter and decision whether it is necessary to install flow straighteners  Flow meter fitted in a T-piece ball valve (suitable for pipe sizes >200 mm / 8 in. process temperatures up to 60 °C)	2PAA112739
Performance improvement	Improve your DP flow meter performance	Survey DP / Multi-variable transmitter full scale differential pressure ranges in relation to maximum span: Advice on modifications to optimize transmitter accuracy	TBA
Maintenance	Verification Services including use of Flow Simulators	Peace of mind that product health and performance has not changed: Satisfies Regulatory requirements for independent Verification  Trending information provides data to show whether future scheduled maintenance is required and indication when it should be done  Option of Warranty extensions  Best possible method of checking product is performing without removing from the process line and checking calibration on a certified calibration rig	2PAA112743
	Enable Verification function and health check*	Enabling Verification function in products purchased without this option	2PAA112744
	Verification by on-site flow measurement comparison	For products without verification function checking their performance is in agreement with a secondary flow measurement is a cost effective alternative to removing the product from the process line and sending it off for calibration:  Clamp-on Ultrasonic flow Verification using meter fitted close to the flow meter	2PAA112745
		Electromagnetic AquaProbe flow verification using meter fitted in a T-piece ball valve close to electromagnetic flow meter. (Pipe sizes >200 mm / 8 in., process temperatures up to 60 °C)	2PAA112790
Extensions, upgrades and retrofits	On-site upgrade ProcessMaster 300 series to 500 series	Your ProcessMaster 300 gives you great performance, but you want to know more about how your process and product are really performing. Upgrade your electronics to the 500 series and take advantage of some amazing diagnostics / measurement features: Process flow conductivity  Detect gas bubbles in your process  Sensor temperature  Are your sensor electrodes becoming coated?  Advanced grounding checks	2PAA113020

\*Please note: Verification function available only on model types; ProcessMaster, HygienicMaster, WaterMaster, AquaMaster, MagMaster

## ...Operational efficiency & performance improvement

Service offering	Description of service	Benefits	Reference number	
Extensions, upgrades and retrofits	On-site upgrade Vortex / SwirlMaster 430 to 450 series	Your VortexMaster or SwirlMaster 430 gives you great performance, but you want to know more about how your process and product are really performing. Upgrade your electronics to the 450 series and take advantage of diagnostics / measurement features: Connectivity of remote pressure-, temperature-, gas analyzer or density signal  Direct Energy metering for Steam, Gas or Liquids  Steam status supervision	2PAA113379	
		Add a digital output to your Vortex / SwirlMaster 430 series	Your VortexMaster or SwirlMaster 430 gives you great performance, but you want to add an additional digital output for: Contact output  Pulse output  Frequency output	
		Do-it-Yourself conversion kit (Non hazardous area only)	2PAA113380	
		On-site service (including Hazardous area)	2PAA113381	
	On-site upgrade of Vortex / SwirlMaster 430 to include process temperature measurement	Your VortexMaster or SwirlMaster gives you great performance, but you want to add an internal RTD for: Temperature compensation  Direct saturated steam mass flow	2PAA113382	
		Remote product made into an integral (COPA) product	During plant upgrades it may be more efficient to position the electronics with the sensor On-site conversion into an integral product ProcessMaster WaterMaster VortexMaster / SwirlMaster	2PAA112755 2PAA112756 2PAA113383
	Integral (COPA) product made into a remote product		During plant upgrades it may be more efficient to position the electronics remote from the sensor On-site conversion into a remote product ProcessMaster WaterMaster VortexMaster / SwirlMaster	2PAA112753 2PAA112754 2PAA113384
			On-site calibration of Thermal Mass flow meters	If you have more than ten Thermal mass flow meters needing re-calibration each year why not arrange for ABB to bring the calibration equipment to you: This service can save you up to half a days administration work per instrument.
		Thermal mass calibration agreement		If you regularly require your Thermal Mass flowmeters to be sent to ABB for re-calibration, why not set-up an annual maintenance agreement to reduce your administration time and costs.
	Maintenance	Calibration at ABB Site	Peace of mind that product is performing within specification: Certified calibration certificate to show regulatory authorities 3 points of calibration covering full flow range  DN1-100 1/25" - 4" DN150-250 6" - 10" DN300-600 12" - 24" DN700-1000 28" - 40" >DN1000: Contact your local service provider for a quote For Non ABB product please specify make and model and also quote the following reference number:	2PAA112777 2PAA112778 2PAA112779 2PAA112780 - 2PAA112781
Optional extras:				
Fingerprint to check product health after calibration			2PAA112783	
Flow check only, no cal. certificate issued			2PAA112792	
Additional calibration points			2PAA112782	
Witnessed calibrations			2PAA112784	
Calibration of AquaProbe			2PAA112793	
Express calibration service		2PAA113428		

Service offering	Description of service	Benefits	Reference number		
Maintenance	Thermal Mass calibration at ABB site	ABB offer a wide range of fast turnaround calibration options specific for Thermal Mass flow meters (all options include sensor cleaning as standard). Recalibration Recalibration with entry test DAKKS / ILAC calibration or Recalibration according to DIN EN ISO/IEC 17025 EPA linearity sensor check for Sensyflow FMT700-P - Option (DAKKS)	2PAA113417 2PAA113418 2PAA113419 2PAA113420		
		Optional extras:			
		One week Express service	2PAA113421		
		Transmitter or remote unit testing	2PAA113422		
		Sensor replacement	2PAA113423		
		Extensions, upgrades and retrofits	On-site upgrade comms protocol	When performing a plant wide upgrade a change in control system often involves a change in communications protocol: Rather than purchasing new flow meters it can be more cost effective to have an ABB Service engineer come to site and update your products' communications for you  We will even commission the device and ensure that it is fully integrated in your control system	
				<b>Electromagnetic flow</b>	
				ProcessMaster upgrades to Profibus PA ProcessMaster upgrades to Foundation Fieldbus WaterMaster upgrades to HART WaterMaster upgrades to Profibus DP WaterMaster upgrades to MODBUS RTU	2PAA112794 2PAA112795 2PAA112800 2PAA112801 2PAA112802
				<b>Differential pressure</b>	
				266DSH Transmitter upgrade to external pushbuttons 266DSH Transmitter upgrades to Advanced HART and 4 to 20mA 266DSH Transmitter upgrades to Profibus PA 266DSH Transmitter upgrades to Fieldbus	2PAA113401 2PAA113402 2PAA113403 2PAA113404
		<b>Coriolis</b>			
		FCM2000-MS2/MC2 upgrade to HART FCM2000-MS2/MC2 upgrade to Profibus PA FCM2000-MS2/MC2 upgrade to Profibus PA with M12 plug FCM2000-MS2/MC2 upgrade to Foundation Fieldbus	2PAA113424 2PAA113425 2PAA113426 2PAA113427		
Training	ABB site training	We offer a range of standard training courses throughout the year. Contact your local service provider to find out what courses are available and when.			
		E-learning	Check out our range of on-line training courses to improve your knowledge of flow products and their operation.		

## Lifecycle management

Service offering	Description of service	Benefits	Reference number
Installation & Commissioning	Commissioning	A guarantee that your product is correctly installed and performing within spec.: Electrical commissioning with all safety aspects taken care of  Verification measurements (if purchased with fingerprint)  Warranty extensions  Informal training and instruction how to use	2PAA112741
Extensions, upgrades and retrofits	On-site retrofit of electronics to latest version	One of the many reasons ABB flow meters are so widely used is the long reliable life time you can expect. To ensure your product stays reliable it may be beneficial to upgrade your electronics to a newer model: An electronics retrofit may be cheaper than replacing the entire flow system  Advances in technology mean that newer electronics platforms have additional features: — More detailed HMI — Additional diagnostic functions — More communication options	
		<b>Electromagnetic flow</b>	
	Upgrade FXE4000-DE41/FXM2000-DM41 to ProcessMaster FEP321 Standard		2PAA112766
	Upgrade FXE4000-DE41/FXM2000-DM41 to ProcessMaster FEP321 Fieldbus version		2PAA112767
	Upgrade from FXE4000-DE21 / FXM2000-DM21 to HygienicMaster FEH321 standard version		2PAA112768
	Upgrade from FXE4000-DE21 / FXM2000-DM21 to HygienicMaster FEH321 Fieldbus version		2PAA112769
	Upgrade from FXE4000-DE43 / FXM2000-DM43 to ProcessMaster FEP311		2PAA112770
	Upgrade from FXE4000-DE41 / FXM2000-DM41 to ProcessMaster FEP521 standard version		2PAA112771
	Upgrade from FXE4000-DE41 / FXM2000-DM41 to ProcessMaster FEP521 Fieldbus version		2PAA112772
	Upgrade from FXE4000-DE21 / FXM2000-DM21 to HygienicMaster FEH521 standard version		2PAA112773
	Upgrade from FXE4000-DE21 / FXM2000-DM21 to HygienicMaster FEH521 Fieldbus version		2PAA112774
	Upgrade from FXE4000-DE43 / FXM2000-DM43 to ProcessMaster FEP511 (up to DN100 in standard version)		2PAA112775
	Upgrade MagMaster to WaterMaster		2PAA112803
	Upgrade MagMaster to WaterMaster HART version		2PAA112804
	Upgrade MagMaster to WaterMaster Profibus DP		2PAA112805
	Upgrade MagMaster to WaterMaster MODBUS RTU		2PAA112806
		<b>Vortex and Swirl flow meter</b>	
	Upgrade VT1000/ST1000 to VortexMaster / SwirlMaster FSV450 HART		2PAA113385
	Upgrade VR1000/SR1000 to VortexMaster / SwirlMaster FSV450 remote HART		2PAA113386
	Upgrade integral FV4000/FS4000 to VortexMaster / SwirlMaster FSV450 HART		2PAA113387
	Upgrade FV4000/FS4000 to VortexMaster / SwirlMaster FSV450 remote HART		2PAA113388
		<b>Differential Pressure</b>	
	364DS DP transmitter		2PAA113411
	266DSH DP transmitter		2PAA113412
	266CSH Multivariable transmitter		2PAA113413
	267CS Multivariable transmitter		2PAA113414

Service offering	Description of service	Benefits	Reference number
Replacement	MagMaster Transmitter exchange service	For continuity purposes rather than upgrade your electronics to a newer version it may be more beneficial to exchange your old MagMaster Transmitter for a newly refurbished unit: A replacement MagMaster ensures your CalMaster verification unit continues to perform MagMaster, AC power MagMaster, DC Power MagMaster, Dual current output, AC power MagMaster, Dual current output, DC power	EXCMAG1-AB01 EXCMAG2-AB01 EXCMAG3-AB01 EXCMAG4-AB01
	On-site MagMaster transmitter replacement	Replacement transmitter fitted, commissioned and CalMaster verification performed by the professionals ensuring your system is working correctly: MagMaster, AC power MagMaster, DC Power MagMaster, Dual current output, AC power MagMaster, Dual current output, DC power	2PAA112757 2PAA112822 2PAA112823 2PAA112824
	Differential pressure transmitter replacement	Replacement Transmitter fitted and commissioned: 264DS DP transmitter 265DS DP transmitter 364DS DP transmitter 266DSH DP transmitter 266CSH Multivariable transmitter 267CS Multivariable transmitter	2PAA113405 2PAA113406 2PAA113407 2PAA113408 2PAA113409 2PAA113410
Maintenance	Electromagnetic flow meter refurbishment	For abrasive applications such as mining or dredging, it can be cheaper to pay for your flow meter to be refurbished For products over ten years old, a refurbishment can be a good way to ensure your product will work for another ten years  One year Warranty extension  Avoids failure which can cause un-scheduled downtime in your process  <b>Optional extra:</b> Rental of Clamp-on Ultrasonic flow meter during refurbishment work	Price on application       2PAA112750 2PAA112828
	AquaProbe refurbishment service	Over time and regular use the sensing part of your AquaProbe may become more susceptible to damage and failure through accidental knocks and collisions during operation.  ABB offers a refurbishment service whereby the metal works is cleaned and checked for damage, the sensor tip is removed and replaced with a new sensor and the device is recalibrated before shipping back to you.	2PAA112764
	AquaProbe upgrade	Upgrade AquaProbe I to AquaProbe II to operate with the latest electronics.	2PAA112764
	Vortex / Swirl flow meter sensor check and exchange	Over time and regular use the sensing part of your Vortex or Swirl meter may become more susceptible to damage and failure through accidental knocks by waterhammer or heating / cooling shocks during operation. ABB offers 2 refurbishment services: In house service including cleaning and checking for damage, the piezo sensor is removed and replaced with a new one and the device is recalibrated before shipping back to you. On-site service including checking for damage, the piezo sensor and sealing is removed and replaced with a new one and the device will be taken into operation after replacement.	2PAA113389 2PAA113390
Spares & consumables	Spare parts	When things go wrong, holding a small stock of spare parts to perform on-site repairs can save you downtime To identify which spare parts you should hold please contact your local ABB Service representative	
	AquaMaster replacement battery	Why not carry a spare battery unit when you visit your AquaMaster flowmeter.	WABC2100
	Spare programmed EEPROM and FRAM service	In case of failure as well as purchasing spare electronics parts it is also a good idea to purchase pre-programmed EEPROM and FRAM memories so that you can get your product up and running again immediately, without the need for timely configuration work. Provide us your product serial number and we will send you a duplicate EEPROM or FRAM ready for use	FXE4000 2PAA113030 FXM2000 2PAA113031 FSM4000 2PAA113032 FXP4000 2PAA113033 FCM200 2PAA113555 FCB300 2PAA113556

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