

CONTENTS

■	What is HART Communication?	2
■	Downloading and installing DD files	2
●	Before using FieldMate.....	2
●	Installing the DD File	3
●	Connecting Setup Tool	3
■	Functions Available via HART Communication.....	3
■	Operational Precaution.....	4
●	Setting on the PH450G/SC450G/ISC450G and a setup tool (communcation tool):	4
●	Operation with handling all the parameters of the PH450G/SC450G/ ISC450G:.....	4
■	DD Online Parameters for PH450G (Device revision 2, DD file revision 2) ..	4
■	DD Online Parameters for SC450G (Device revision 2, DD file revision 2) ..	21
■	DD Online Parameters for ISC450G (Device revision 2, DD file revision 2)	36
	Revision Information.....	51

This document describes HART communication by the PH450G/SC450G/ISC450G. Before communicating using the HART protocol, refer to the User's Manuals for the PH450G/SC450G/ISC450G for details of the parameters.

HART is a registered trademark of FieldComm Group.

■ What is HART Communication?

HART Communication superimposes specific waveforms called HART Communication waveforms on the 4–20 mA analog signal from a PH450G/SC450G/ISC450G to enable remote intercommunication between the online PH450G/SC450G/ISC450G and a setup tool (*).

*: FieldMate, Plant Resource Manager (PRM), or a handheld HART communicator such as the 475 Field Communicator may be used as the setup tool. It is highly recommended to use the latest model of each setup tool.

■ Downloading and installing DD files

To enable HART communication between a PH450G/SC450G/ISC450G and setup tool, the device description (DD) file of the PH450G/SC450G/ISC450G needs to be installed in the setup tool. The DD file contains the HART communication details and menu configurations specific to the PH450G/SC450G/ISC450G.

FieldMate contains the versions of DD files at the time when sold. To download the latest version of DD files, visit our library by clicking the following link. You can find and download the files you need from "Software" in Documents & Downloads.

<http://www.yokogawa.com/an/download/an-dl-fieldbus-001en.htm>


*: This address is subject to change without prior notice. If the above address cannot be accessed, consult your nearest sales office or the agency from which you purchased the product.

● Before using FieldMate

Before using FieldMate, check the revision of Device Files.

- Compatibility among revisions of PH450G/SC450G/ISC450G, FieldMate and DD file

Device	Product	FieldMate		DD of Field Communicator	
	Device version	Revision of Device Files	DD file revision in Device Files	Corresponding device revision	DD file revision
PH450G/ SC450G/ ISC450G	02	R3.05 or later	2	2	2

You can check the device version by pressing the zoom  on the main menu of PH450G/

SC450G/ISC450G, as shown in the figure 1.

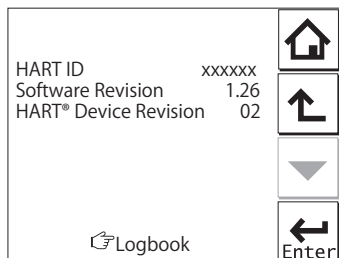


Figure 1 Display of firmware revision

● Installing the DD File

For how to install the DD file, see the respective documentation for the setup tool you use. The following shows how to install the latest DD file in the Yokogawa setup tool, FieldMate.

Note that the following descriptions assume installation in FieldMate R2.02.00. If the version is upgraded later, the following descriptions may not match. In this case, please see the latest documentation for FieldMate.

Obtaining and decompressing the DD file

Download the DD file from Yokogawa website. DD files are downloadable as ZIP files (when downloading from the website of FieldComm Group, a compressed DD file will be downloaded with the name of dd.zip).

Installing the Device Descriptions (DDs) file of FieldMate

Install the latest DD files you obtained by following the instruction described in the manual of FieldMate.

Notes on DD file revision and device revision

When using HART communication of a PH450G/SC450G/ISC450G, it is necessary to use the DD file that matches the revision of the PH450G/SC450G/ISC450G device used. Make sure to check they match before use, as follows.

(1) Checking the PH450G/SC450G/ISC450G device revision

On the main screen press the zoom key. Press Enter repeatedly until revision information on the firmware and HART device is displayed.

(2) Checking the DD file revision

DD files are stored with filenames beginning with a four-digit number such as 0102.xxxdd.

The first two digits, 01 in the example above, indicate the device revision. The following two digits, 02 in the example above, indicate the DD revision.

Use the latest revision of the DD file that matches the device revision.

● Connecting Setup Tool

You can connect the setup tool to any junction terminal such as one in the central control room, a converter's junction box, or somewhere within the transmission loop, as long as the load resistance is 250 ohms or larger between the power supply and the terminals to which you want to connect the setup tool. Connect the setup tool in parallel with the load resistance. It is polarity-insensitive.

■ Functions Available via HART Communication

Almost all PH450G/SC450G/ISC450G functions accessible via the front panel display of the PH450G/SC450G/ISC450G are available via HART communication.

The following pages show the list of parameters for HART communication between PH450G/SC450G/ISC450G and the setup tool with some notes regarding their display and setting. For further information on the parameters, read the corresponding instruction manuals.

The data on the list was obtained by using Yokogawa FieldMate. It is highly recommended to use a device DTM (device type manager) with FieldMate, otherwise some parameters might not be displayed or set appropriately. Refer to each remark posted on Note column of the list. Read an instruction manual of FieldMate to know how to startup / operate the device DTM.

The following list describes each parameter. R refers to read only, R/W refers to rewritable.

■ Operational Precaution

- **Setting on the PH450G/SC450G/ISC450G and a setup tool (communication tool):**

While settings on a setup tool (ex. FieldMate), don't perform settings on the PH450G/SC450G/ISC450G at the same time.

- **Operation with handling all the parameters of the PH450G/SC450G/ISC450G:**

PH450G/SC450G/ISC450G has a lot of parameters.

Accessing many parameters may take several minutes.

■ DD Online Parameters for PH450G (Device revision 2, DD file revision 2)

CAUTION

Use a device DTM or the front panel of the device to perform settings/checking.

Built-in DTM may replace characters with unintended ones or disable settings appropriately. Note that °C is displayed as ツ-C, °F is displayed as ツ-F.

In the following list, those items with brackets [] or (()) are valid when the parameters are set as described in those brackets.

PH450G	Parameter	R/W	Parameter Value	Unit	Note	
Process Values	PV [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R	—	pH		
	SV	R	—	ツ -C ツ -F	Note	
	TV [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP, rH)]	R	—	mV		
Zoom						
Zoom sensor	Zero [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R	—	mV		
	Slope [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R	—	%		
	Sensor mV [Sensor type: pH, pH+ORP]	R	—	mV		
	ORP zero [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R	—	mV		
	ORP slope [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R	—	%		
	ORP sensor mV [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R	—	mV		
	rH zero [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R	—	mV		
	rH slope [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R	—	%		
	rH sensor mV [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R	—	mV		
	Impedance 1 [Input 1 impedance: Low]	R	—	kOhm		
	Impedance 2 [Input 2 impedance: Low]	R	—	kOhm		
	Zoom output	mA1 value	R	—	mA	
		mA2 value	R	—	mA	
S1 perc		R	—	%		
S2 perc		R	—	%		
S3 perc		R	—	%		
S4 perc		R	—	%		
Zoom device	Serial number	R	—			
	Software Revision	R	—			
	Device Revision	R	—			
Logbook	—	—	—			
Calib/wash	—	—	—			

PH450G	Parameter	R/W	Parameter Value	Unit	Note		
Commissioning							
	Sensor setup		Sensor Type	R/W	pH ORP pH+ORP	The use of Built-in DTM disables pH+ORP to be selected.	
	Measurement setup		Meas type [Sensor type: pH+ORP]	R/W	pH ORP pH+ORP rH+pH rH	The use of Built-in DTM disables pH+ORP or rH+pH to be selected.	
	Temp setting		Temp sensor	R/W	Pt1000 Pt100 5K1 3K Balco 8k55 350 6K8 PTC10K		
			Temp unit	R/W	℃ ℉		
	Temp compensation		Temp comp	R/W	Auto Manual		
			Man value	R/W	Numeric value -30.000000 to 140.000000 (Temp unit: ℃) -22.000000 to 284.000000 (Temp unit: ℉)	℃ ℉	Note
			Ref temp	R/W	Numeric value 0.000000 to 100.000000 (Temp unit: ℃) 32.000000 to 212.000000 (Temp unit: ℉)	℃ ℉	Note
			Comp method [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP, rH)]	R/W	None TC Matrix NEN 6411		
			TC [Comp method: TC]	R/W	Numeric value -0.100000 to 0.100000 (Temp unit: ℃) -0.060000 to 0.060000 (Temp unit: ℉)	pH/ ℃ pH/ ℉	Note
			ORP comp method [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	None TC		
			ORP TC [ORP comp method: TC]	R/W	Numeric value -10.000000 to 10.000000 (Temp unit: ℃) -6.000000 to 6.000000 (Temp unit: ℉)	mV/ ℃ mV/ ℉	Note
	Calib. Setting		Buffer set [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Nist DIN US User defined		
		Zero / Slope units [Sensor type: pH]		Zero unit [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	mV pH	

PH450G			Parameter	R/W	Parameter Value	Unit	Note
		Zero / Slope units [Sensor type: pH] [Sensor type: pH]	Slope unit [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	% mV/pH		
		Limit and timing	Zero hi lim [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 0.000000 to 9.000000	pH [Zero unit: pH] mV [Zero unit: mV]	
			Zero lo lim [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 9.000000 to 0.000000	pH [Zero unit: pH] mV [Zero unit: mV]	
			Slope hi lim [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 59.160000 to 65.080000	mV/pH	
			Slope lo lim [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 41.410000 to 59.160000	mV/pH	
			ORP Zero hi lim [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Numeric value 0.000000 to 1500.000000	mV	
			ORP Zero lo lim [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Numeric value -1500.000000 to 0.000000	mV	
			ORP Slope hi lim [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Numeric value 100.000000 to 110.000000	%	
			ORP Slope lo lim [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Numeric value 70.000000 to 100.000000	8	
			rH Zero hi lim [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Numeric value 0.000000 to 1500.000000	mV	
			rH Zero lo lim [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Numeric value -1500.000000 to 0.000000	mV	
			rH Slope hi lim [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Numeric value 100.000000 to 110.000000	%	
			rH Slope lo lim [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Numeric value 70.000000 to 100.000000	8	
			Stab time	R/W	Numeric value 2 to 30	s	
			Cal int	R/W	Numeric value 1 to 250	d	

PH450G		Parameter	R/W	Parameter Value	Unit	Note
	Zero/ Slope/ ITP	Zero [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 4.000000 to 7.222200	pH [Zero unit: pH] mV [Zero unit: mV]	
		Slope [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 44.439999 to 62.200001	mV/pH	
		ITP [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Numeric value 0.000000 to 14.000000	pH	
		ORP zero [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Numeric value -111.110001 to 1111.109985	mV	
		ORP slope [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Numeric value 71.999001 to 102.220001	%	
		rH zero [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Numeric value -111.110001 to 1111.109985	mV	
		rH slope [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Numeric value 71.999001 to 102.220001	%	
	Impedance setting	Input 1 impedance	R/W	Low High		
		Imp. 1 low limit [Input 1 impedance: Low]	R/W	Numeric value 1000.000000 to 1000000.000000	kOhm	The use of Built-in DTM causes an error and disables a value to be entered when it is outside the range 1000.0 to 1000.1
		Imp. 1 high limit [Input 1 impedance: Low]	R/W	Numeric value 1000.000000 to 1000000.000000	kOhm	The use of Built-in DTM causes an error and disables a value to be entered when it is outside the range 1000.0 to 1000.1.
		Input 2 impedance	R/W	Low High		
		Imp. 2 low limit [Input 2 impedance: Low]	R/W	Numeric value 1000.000000 to 1000000.000000	kOhm	The use of Built-in DTM causes an error and disables a value to be entered when it is outside the range 1000.0 to 1000.1.
		Imp. 2 high limit [Input 2 impedance: Low]	R/W	Numeric value 1000.000000 to 1000000.000000	kOhm	The use of Built-in DTM causes an error and disables a value to be entered when it is outside the range 1000.0 to 1000.1.
Output setup						
mA1 setup	Type	R/W	Off Control Output Simulate			
	Func [Type: Off]	R	Off			
	Func [Type: Control]	R/W	P PI PID			

PH450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Control]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		PID SP [Type: Control]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ™ -F [Param: TEMPERATURE]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.001000	mV [Param: ORP] rH [Param: RH]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Burn [Type: Control]	R/W	Off Low High		
		Expire time [Type: Control]	R/W	Numeric value 0.000000 to 1800.000000	s	
		Func [Type: Output]	R/W	Linear Table		
		Param [Type: Output]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		Lin 0% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ™ -F [Param: TEMPERATURE]	Note
		Lin 100% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	mV [Param: ORP] rH [Param: RH]	
		Burn [Type: Output]	R/W	Off Low High		
		Damping time [Type: Output]	R/W	Numeric value 0.000000 to 3600.000000	s	
		Func [Type: Simulate]	R	Simulate		
		Percentage [Type: Simulate]	R/W	Numeric value -10.000000 to 110.000000	%	

PH450G		Parameter	R/W	Parameter Value	Unit	Note
	mA2 setup	Type	R/W	Off Control Output Simulate		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		PID SP [Type: Control]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.001000	mV [Param: ORP] rH [Param: RH]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Burn [Type: Control]	R/W	Off Low High		
		Expire time [Type: Control]	R/W	Numeric value 0.000000 to 1800.000000	s	
		Func [Type: Output]	R/W	Linear Table		
		Param [Type: Output]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
Lin 0% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE]	Note		
Lin 100% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	mV [Param: ORP] rH [Param: RH]			

PH450G		Parameter	R/W	Parameter Value	Unit	Note
		Burn [Type: Output]	R/W	Off Low High		
		Damping time [Type: Output]	R/W	Numeric value 0.000000 to 3600.000000	s	
		Func [Type: Simulate]	R	Simulate		
		Percentage [Type: Simulate]	R/W	Numeric value 0.000000 to 100.000000	%	
	S1 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD Wash		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		PID SP [Type: Control]	R/W	Numeric value no limit	pH [Param: PH] ℃, ℉ [Param: TEMPERATURE]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.001000	mV [Param: ORP] rH [Param: RH]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Alarm]	R	Alarm		

PH450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Alarm]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built- in DTM disables Hard + Soft Fail to be selected. Use a device DTM or set at the front panel display.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
		Func [Type: Wash]	R	Wash		
		Inter. time [Type: Wash]	R/W	Numeric value 0.100000 to 36.000000	h	
		Wash time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
		Rec. time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
		Man. wash [Type: Wash]	R/W	disable enable disabled + imp2 high enabled + imp2 high		The use of Built- in DTM disables disabled + imp2 high or enabled + imp2 high to be selected.
		Cont. wash [Type: Wash]	R/W	disable enable		

PH450G		Parameter	R/W	Parameter Value	Unit	Note
	S2 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD Wash		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		PID SP [Type: Control]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.001000	mV [Param: ORP] rH [Param: RH]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
	Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s		
	Func [Type: Alarm]	R	Alarm			

PH450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Alarm]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
		Func [Type: Wash]	R	Wash		
		Inter. time [Type: Wash]	R/W	Numeric value 0.100000 to 36.000000	h	
		Wash time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
		Rec. time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
		Man. wash [Type: Wash]	R/W	disable enable disabled + imp2 high enabled + imp2 high		The use of Built- in DTM disables disabled + imp2 high enabled + imp2 high to be selected.
		Cont. wash [Type: Wash]	R/W	disable enable		

PH450G		Parameter	R/W	Parameter Value	Unit	Note
	S3 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD Wash		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		PID SP [Type: Control]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.001000	mV [Param: ORP] rH [Param: RH]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
	Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s		
	Func [Type: Alarm]	R	Alarm			

PH450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Alarm]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built- in DTM disables Hard + Soft Fail to be selected. Use a device DTM or set at the front panel display.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
		Func [Type: Wash]	R	Wash		
		Inter. time [Type: Wash]	R/W	Numeric value 0.100000 to 36.000000	h	
		Wash time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
		Rec. time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
		Man. wash [Type: Wash]	R/W	disabled enabled disabled + imp2 high enabled + imp2 high		The use of Built- in DTM disables disabled + imp2 high or enabled + imp2 high to be selected.
		Cont. wash [Type: Wash]	R/W	disable enable		

PH450G		Parameter	R/W	Parameter Value	Unit	Note
	S4 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD Wash		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
		PID SP [Type: Control]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.001000	mV [Param: ORP] rH [Param: RH]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
	Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s		
	Func [Type: Alarm]	R	Alarm			

PH450G	Parameter	R/W	Parameter Value	Unit	Note
	Param [Type: Alarm]	R/W	NONE PH [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)] TEMPERATURE ORP [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)] RH [Sensor type: pH+ORP (Meas type: rH, pH+rH)]		
	Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
	Alarm dir. [Type: Alarm]	R/W	Low High		
	Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	pH [Param: PH] ℃ -C, ℉ -F [Param: TEMPERATURE] mV [Param: ORP] rH [Param: RH]	Note
	Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
	Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
	Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built- in DTM disables disabled Hard + Soft Fail to be selected.
	Func [Type: Simulate]	R/W	ON/Off Percentage		
	Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
	Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
	Func [Type: HOLD]	R	HOLD contact		
	Func [Type: Wash]	R	Wash		
	Inter. time [Type: Wash]	R/W	Numeric value 0.100000 to 36.000000	h	
	Wash time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
	Rec. time [Type: Wash]	R/W	Numeric value 0.100000 to 10.000000	min	
	Man. wash [Type: Wash]	R/W	disabled enabled disabled + imp2 high enabled + imp2 high		The use of Built- in DTM disables disabled + imp2 high or enabled + imp2 high to be selected
	Cont. wash [Type: Wash]	R/W	disable enable		

PH450G		Parameter	R/W	Parameter Value	Unit	Note
	HOLD setup	HOLD L/F	R/W	Last Fixed		
		mA1 Fixed [HOLD L/F: Fixed]	R/W	Numeric value 3.600000 to 21.000000	mA	
		mA2 Fixed [HOLD L/F: Fixed]	R/W	Numeric value 3.600000 to 21.000000	mA	
		HOLD dur. Cal/wash	R/W	disabled enabled		
Error config		pH too high [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Off Warn Fail		
		pH too low [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Off Warn Fail		
		Temp too high	R/W	Off Warn Fail		
		Temp too low	R/W	Off Warn Fail		
		Matrix config [Sensor type: pH] or [Sensor type: pH+ORP (Meas type: pH, pH+rH, pH+ORP)]	R/W	Warn Fail		
		ORP too high [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Off Warn Fail		
		ORP too low [Sensor type: ORP] or [Sensor type: pH+ORP (Meas type: ORP, pH+ORP)]	R/W	Off Warn Fail		
		rH too high [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Off Warn Fail		
		rH too low [Sensor type: pH+ORP (Meas type: rH, pH+rH)]	R/W	Off Warn Fail		
		Cal time exc	R/W	Off Warn Fail		
		Wash Error	R/W	Off Warn Fail		
		Imp. 1 high	R/W	Off Warn Fail		
		Imp. 1 low	R/W	Off Warn Fail		
		Imp. 2 high	R/W	Off Warn Fail		
		Imp. 2 low	R/W	Off Warn Fail		

PH450G		Parameter	R/W	Parameter Value	Unit	Note
Logbook config	Sensor logbook	R/W	Error on Error off T.C. Zero lo lim Zero hi lim Slope lo lim Slope hi lim Stab. Time Imp.1 lo lim Imp.1 hi lim Imp.2 lo lim Imp.2 hi lim			
	mA logbook	R/W	mA setup Hold fixed value PID setpoint PID range Manual reset PID I time PID D time Burn Linear % Damping time Expire time			
	Contact logbook	R/W	Contact setup PID setpoint PID range Manual reset PID I time PID D time Control type DC period time Max pulse freq. Alarm setpoint Alarm direction Alarm hysteresis Alarm delay time Expire time Wash setup			
	Erase logbook	R/W	Calibration Sensor Predictive Maint All logbook		A confirmation message appears before deleting.	
	Warn logbook full	R/W	No Yes			
Basic setup	Tag	R/W	Alphanumeric value			
	Distributor	R	—			
	Model	R	—			
	Device information	Descriptor	R/W	Alphanumeric value		
		Message	R/W	Alphanumeric value		
		Poll addr	R/W	Numeric value 0 to 15		The use of Built-in DTM disables the settings appropriately.
		Num resp preams	R/W	Numeric value 0 to 255		

PH450G	Parameter	R/W	Parameter Value	Unit	Note
Review	Model	R	—		
	Distributor	R	—		
	Write protect	R	—		
	Manufacturer	R	—		
	Dev id	R	—		
	Tag	R	—		
	Descriptor	R	—		
	Message	R	—		
	Date	R	—		
	Universal rev	R	—		
	Fid dev rev	R	—		
	Software rev	R	—		
	Poll addr	R	—		
	Num resp preams	R	—		

Note : The use of Built-in DTM may make characters displayed as unintended ones. °C is replaced with ℥-C, °F is replaced with ℥-F. Use a device DTM or check at the front panel display.

■ DD Online Parameters for SC450G (Device revision 2, DD file revision 2)

CAUTION

Use a device DTM or the front panel display to perform settings/checking.

Built-in DTM may replace characters with unintended ones or disable settings appropriately. Note that °C is displayed as ℥-C, °F is displayed as ℥-F.

In the following list, those items with brackets [] or [()] are valid when the parameters are set as described in those brackets.

SC450G	Parameter	R/W	Parameter Value	Unit	Note		
Process Values	PV	R	—	S/cm, S/m [Measure: Cond Only] ppb [Measure: Conc only] O.cm [Measure: Res only (Meas unit: /cm)] O.m [Measure: Res only (Meas unit: /m)]			
	SV	R	—	℃ -C	Note		
	TV	R	—	S/cm, S/m [Measure: Cond Only] ppb [Measure: Conc only] O.cm [Measure: Res only (Meas unit: /cm)] O.m [Measure: Res only (Meas unit: /m)]			
Zoom	—	—	—				
Zoom sensor	Fact CC	R	—	/cm, /m			
	Adj CC	R	—	/cm, /m			
	Method SC1	R	—				
	Method SC2	R	—				
	Polarization	R	—				
	Ohms	R	—	ohm			
	USP%	R	—	%			
	Zoom output	mA1 value	R	—	mA		
		mA2 value	R	—	mA		
		S1 perc	R	—	%		
		S2 perc	R	—	%		
		S3 perc	R	—	%		
		S4 perc	R	—	%		
	Zoom device	Serial number	R	—			
		Software Revision	R	—			
		Device Revision	R	—			
Logbook	—	—	—				
Calibration	—	—	—				
Commissioning	Input contact	R/W	Disable Factor 10 mA1 Factor 10 mA2 Factor 10 mA1+2		The use of Built-in DTM disables Factor 10 mA1+2 to be selected.		
	Measurement setup	Measure	R/W	Cond only Res Only Con only Cond+Conc		The use of Built-in DTM disables Cond and Conc to be selected.	
		Configure sensor	Sensor type	R/W	2-elec 4-elec		
			Meas unit	R/W	/cm /m		
			Fact CC	R/W	Numeric value 0.005000 to 50.000000 [Meas unit: /cm] 0.500000 to 5000.000000 [Meas unit: /m]		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
	Temp setting	Temp sensor	R/W	Pt1000 Pt100 Ni100 8k55 Pb36 (JIS6k)		
		Temp unit	R/W	℃ ℉		
	Temp compensation	Temp comp	R/W	Auto Manual		
		Man value	R/W	Numeric value -20.000000 to 250.000000 [temp unit: ℃] -4.000000 to 482.000000 [temp unit: ℉]	℃ ℉	Note
		Ref temp	R/W	Numeric value 0.000000 to 100.000000 [temp unit: ℃] 32.000000 to 212.000000 [temp unit: ℉]	℃ ℉	Note
		Method SC1	R/W	None TC NaCl Matrix		
		Matrix SC1 [Method SC1: Matrix]	R/W	Ammonia 0-50ppb Morpholine 0-500 ppb Ammonia 15-30 % H2SO4 0-27% H2SO4 39-85% H2SO4 93-100% NaOH 0-15 % NaOH 25-50% HCl 0-200 ppb HCl 0-18% HCl24-44% HNO3 0-25% HNO3 35-80% User defined 1 User defined 2		
		TC SC1 [Method SC1: TC]	R/W	Numeric value 0.000000 to 3.500000 [temp unit: ℃] 0.000000 to 2.000000 [temp unit: ℉]	%/ ℃ %/ ℉	Note
		Method SC2	R/W	None TC NaCl Matrix		
		Matrix SC2 [Method SC2: Matrix]	R/W	Ammonia 0-50 ppb Morpholine 0-500 ppb Ammonia 15-30 % H2SO4 0-27% H2SO4 39-85% H2SO4 93-100% NaOH 0-15 % NaOH 25-50% HCl 0-200 ppb HCl 0-18% HCl 24-44% HNO3 0-25% HNO3 35-80% User defined 1 User defined 2		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		TC SC2 [Method SC2: TC]	R/W	Numeric value 0.000000 to 3.5000000 [temp unit: ℃-C] 0.000000 to 2.000000 [temp unit: ℉-F]	%/ ℃ -C % ℉ -F	Note
	Calib. Setting	Air adjust limit	R/W	Numeric value 0.000000 to 0.000020	S	
		CC hi lim	R/W	Numeric value 100.000000 to 120.000000	%	
		CC lo lim	R/W	Numeric value 80.000000 to 100.000000	%	
		Stab time	R/W	Numeric value 2 to 30	s	
		Cal interval	R/W	Numeric value 1 to 250	d	
		Concentration	Additional table [Measure: Conc only]	R/W	Disable Enable	
	Conc table unit [Measure: Conc only]		R/W	% ppt ppm ppb		
Output setup						
	mA1 setup	Type	R/W	Off Control Output Simulate		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℉ -C, ℃ -F [Param: TEMPERATURE] % [Param: CONCENT2]	Note

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Burn [Type: Control]	R/W	Off Low High		
		Expire time [Type: Control]	R/W	Numeric value 0.000000 to 1800.000000	s	
		Func [Type: Output]	R/W	Linear Table		
		Param [Type: Output]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		Lin 0% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Lin 100% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	
		Burn [Type: Output]	R/W	Off Low High		
		Damping time [Type: Output]	R/W	Numeric value 0.000000 to 3600.000000	s	

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Func [Type: Simulate]	R	Simulate		
		Percentage [Type: Simulate]	R/W	Numeric value -10.000000 to 110.000000	%	
	mA2 setup	Type	R/W	Off Control Output Simulate		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		Note
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃ -C, ℉ -F [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃ -C, ℉ -F [Param: TEMPERATURE] % [Param: CONCENT2]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Burn [Type: Control]	R/W	Off Low High		
	Expire time [Type: Control]	R/W	Numeric value 0.000000 to 1800.000000	s		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Func [Type: Output]	R/W	Linear Table		
		Param [Type: Output]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		Lin 0% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Lin 100% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Burn [Type: Output]	R/W	Off Low High		
		Damping time [Type: Output]	R/W	Numeric value 0.000000 to 3600.000000	s	
		Func [Type: Simulate]	R	Simulate		
		Percentage [Type: Simulate]	R/W	Numeric value 0.000000 to 100.000000	%	
	S1 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD USP		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Alarm]	R	Alarm		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD		
		Func [Type: USP]	R	USP		
		USP safety margin	R/W	Numeric value 0.000000 to 100.000000	%	
		Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Alarm]	R	Alarm		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] O.cm, O.m [Param: RESIST1, 2] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD		
	S3 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		PID SP [Type: Control]	R/W	Numeric value no limit		
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000		
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Alarm]	R	Alarm		
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit		
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD		
	S4 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		PID SP [Type: Control]	R/W	Numeric value no limit		
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000		
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000		
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000		
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000		
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000		
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000		
		Func [Type: Alarm]	R	Alarm		
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond only, Cond + Conc] RESIST1 [Measure: res only] CONCENT1 [Measure: Conc only] TEMPERATURE CONDUCT2 [Measure: Cond only] RESIST2 [Measure: res only] CONCENT2 [Measure: Conc only] CONCENT [Measure :Cond + Conc]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit		
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000		
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000		
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000		
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected. Use a device DTM or set at the front panel display.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000		
		Func [Type: HOLD]	R	HOLD		
	HOLD setup	HOLD L/F	R/W	Last Fixed		
		mA1 Fixed [HOLD L/F: Fixed]	R/W	Numeric value 3.600000 to 21.000000	mA	
		mA2 Fixed [HOLD L/F: Fixed]	R/W	Numeric value 3.600000 to 21.000000	mA	
		HOLD during cal	R/W	disabled enabled		
	Error config	Cond too high [Measure: Cond only, Conc only]	R/W	Off Warn Fail		

SC450G	Parameter	R/W	Parameter Value	Unit	Note
	Res too low [Measure: Res only]	R/W	Off Warn Fail		
	SC hi lim [Measure: Cond only, Conc only]	R/W	Numeric value 0.000000 to 2.000000	S	
	Res low lim [Measure: Res only]	R/W	Numeric value 0.000000 to 10000000.000000	ohm	
	Cond too low [Measure: Cond only, Conc only]	R/W	Off Warn Fail		
	Res too high [Measure: Res only]	R/W	Off Warn Fail		
	SC lo lim [Measure: Cond only, Conc only]	R/W	Numeric value 0.000000 to 2.000000	S	
	Res hi lim [Measure: Res only]	R/W	Numeric value 0.000000 to 10000000.000000	ohm	
	Temp too high	R/W	Off Warn Fail		
	Temp too low	R/W	Off Warn Fail		
	Pol detected	R/W	Off Warn Fail		
	Cal time exc	R/W	Off Warn Fail		
	USP limit exc	R/W	Off Warn Fail		
	1st comp mtrx	R/W	Warn Fail		
	2nd comp mtrx	R/W	Warn Fail		
	Conc table	R/W	Warn Fail		
Logbook config	Sensor logbook	R/W	Error on Error off Temp Coeff. Air adjust limit Adj CC lo lim Adj CC hi lim Reference temp Stab. Time		
	mA logbook	R/W	mA setup Hold fixed value PID setpoint PID range Manual reset PID I time PID D time Burn Linear % Damping time Expire time		

SC450G		Parameter	R/W	Parameter Value	Unit	Note
		Contact logbook	R/W	Contact setup PID setpoint PID range Manual reset PID I time PID D time Control type DC period time Max pulse freq. Alarm setpoint Alarm direction Alarm hysteresis Alarm delay time Expire time		
		Erase logbook	R/W	Calibration Sensor Predictive Maint. All logbook		
		Warn logbook full	R/W	No Yes		
Basic setup		Tag	R/W	Alphanumeric value		
		Distributor	R	—		
		Model	R	—		
	Device information	Descriptor	R/W	Alphanumeric value		
		Message	R/W	Alphanumeric value		
		Poll addr	R/W	Numeric value 0 to 15		The use of Built-in DTM disables the setting properly.
		Num resp preams	R/W	Numeric value 0 to 255		The use of Built-in DTM disables the setting properly.
Review		Model	R	—		
		Distributor	R	—		
		Write protect	R	—		
		Manufacturer	R	—		
		Dev id	R	—		
		Tag	R	—		
		Descriptor	R	—		
		Message	R	—		
		Date	R	—		
		Universal rev	R	—		
		Fld dev rev	R	—		
		Software rev	R	—		
		Poll addr	R	—		
	Num resp preams	R	—			

Note : The use of Built-in DTM may make characters displayed as unintended ones. °C is replaced with ™-C, °F is replaced with ™-F. Use a device DTM or check at the front panel display.

■ DD Online Parameters for ISC450G (Device revision 2, DD file revision 2)

CAUTION

Use a device DTM or the front panel display to perform settings/checking.

Built-in DTM may replace characters with unintended ones or disable settings appropriately. Note that °C is displayed as ™-C, °F is displayed as ™-F.

In the following list, those items with brackets [] or [()] are valid when the parameters are set as described in those brackets.

ISC450G	Parameter	R/W	Parameter Value	Unit	Note	
Process Values	PV	R	—	S/cm, S/m [Measure: Cond Only] ppb [Measure: Conc only]		
	SV	R	—	℃ ℉	Note	
	TV	R	—	S/cm, S/m [Measure: Cond Only] ppb [Measure: Conc only]		
Zoom						
Zoom sensor	Fact CC	R	—	/cm, /m		
	Adj CC	R	—	/cm, /m		
	Method SC1	R	—			
	Method SC2	R	—			
	Ohms	R	—	ohm		
	Zoom output	Ohms	R	—	ohm	
		mA1 value	R	—	mA	
		mA2 value	R	—	mA	
		S1 perc	R	—	%	
		S2 perc	R	—	%	
		S3 perc	R	—	%	
	Zoom device	Serial number	R	—		
		Software Revision	R	—		
Device Revision		R	—			
Logbook	—	—	—			
Calibration	—	—	—			
Commissioning	Input contact	R/W	Disable Factor 10 mA1 Factor 10 mA2 Factor 10 mA1+2		The use of Built-in DTM disables Factor 10 mA1+2 to be selected.	
Measurement setup	Measure	R/W	Cond only Cond+Conc Conc only		The use of Built-in DTM disables Cond and Conc to be selected.	
	Configure sensor	Meas unit	R/W	/cm /m		
		Fact CC	R/W	Numeric value 0.200000 to 50.000000 [Meas unit: /cm] 20.000000 to 5000.000000 [Meas unit: /m]	/cm, /m	
	Temp setting	Temp sensor	R/W	Pt1000 NTC30k		
		Temp unit	R/W	℃ ℉		
Temp compensation	Temp comp	R/W	Auto Manual			

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
	Temp compensation	Man value	R/W	Numeric value -20.000000 to 140000000 [temp unit: ™ -C] -4.000000 to 284.000000 [temp unit: ™ -F]	™ -C ™ -F	Note
		Ref temp	R/W	Numeric value 0.000000 to 100.000000 [temp unit: ™ -C] 32.000000 to 212.000000 [temp unit: ™ -F]	™ -C ™ -F	Note
		Method SC1	R/W	None TC Nacl Matrix		
		Matrix SC1 [Method SC1: Matrix]	R/W	Sulfuric acid 1..5% Sulfuric acid 0..27% Sulfuric acid 39..85% Sulfuric acid 93..100% HCl 1..5% HCl 0..18% HCl 24..44% HNO3 1..5% HNO3 0..25% HNO3 35-80% NaOH 1..5 % NaOH 0..15 % NaOH 25..50% User defined 1 User defined 2		
		TC SC1 [Method SC1:TC]	R/W	Numeric value 0.000000 to 3.5000000 (Temp unit: ™ -C) 0.000000 to 2.000000 (Temp unit: ™ -F)	%/ ™ -C %/ ™ -F	Note
		Method SC2 [Measure: Cond only, Conc only]	R/W	None TC Nacl Matrix		
		Matrix SC2 [Measure: Cond only, Conc only (Method SC2: Matrix)]	R/W	Sulfuric acid 1..5% Sulfuric acid 0..27% Sulfuric acid 39..85% Sulfuric acid 93..100% HCl 1..5% HCl 0..18% HCl 24..44% HNO3 1..5% HNO3 0..25% HNO3 35-80% NaOH 1..5 % NaOH 0..15 % NaOH 25..50% User defined 1 User defined 2		
		TC SC2 [Method SC2: TC]	R/W	Numeric value 0.000000 to 3.5000000 [temp unit: ™ -C] 0.000000 to 2.000000 [temp unit: ™ -F]	%/ ™ -C %/ ™ -F	Note
	Calib. Setting	Air adjust limit	R/W	Numeric value 0.000000 to 0.000100	S	
		CC high lim	R/W	Numeric value 100.000000 to 120.000000	%	

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		CC low lim	R/W	Numeric value 80.000000 to 100.000000	%	
		Stabilization time	R/W	Numeric value 2 to 30	s	
		Calb interval	R/W	Numeric value 1 to 250	d	
	Concentration	Additional table [Measure: Conc only]	R/W	Disable Enable		
		Conc table unit [Measure: Conc only]	R/W	% ppt ppm ppb		
	Output setup	—	—	—		
	mA1 setup	Type	R/W	Off Control Output Simulate		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Burn [Type: Control]	R/W	Off Low High		
		Expire time [Type: Control]	R/W	Numeric value 0.000000 to 1800.000000	s	
		Func [Type: Output]	R/W	Linear Table		
		Param [Type: Output]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		Lin 0% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Lin 100% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Burn [Type: Output]	R/W	Off Low High		
		Damping time [Type: Output]	R/W	Numeric value 0.000000 to 3600.000000	s	
		Func [Type: Simulate]	R	Simulate		
		Percentage [Type: Simulate]	R/W	Numeric value -10.000000 to 110.000000	%	
	mA2 setup	Type	R/W	Off Control Output Simulate		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Burn [Type: Control]	R/W	Off Low High		
		Expire time [Type: Control]	R/W	Numeric value 0.000000 to 1800.000000	s	
		Func [Type: Output]	R/W	Linear Table		
		Param [Type: Output]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Lin 0% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1,2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Lin 100% [Type: Output (Func: Linear)]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1,2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Burn [Type: Output]	R/W	Off Low High		
		Damping time [Type: Output]	R/W	Numeric value 0.000000 to 3600.000000	s	
		Func [Type: Simulate]	R	Simulate		
		Percentage [Type: Simulate]	R/W	Numeric value 0.000000 to 100.000000	%	
	S1 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		PID SP [Type: Control]	R/W	Numeric value no limit		Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000		Note
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000		
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000		
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000		
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000		
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000		
		Func [Type: Alarm]	R	Alarm		
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit		Note
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000		Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000		
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
	S2 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Func [Type: Control]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		PID SP [Type: Control]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Alarm]	R	Alarm		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000	S/cm, S/m [Param: CONDUCT1, 2] ppb [Param: CONCENT1] ℃, ℉ [Param: TEMPERATURE] % [Param: CONCENT2]	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
	S3 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		
		Func [Type: Control]	R/W	P PI PID		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		PID SP [Type: Control]	R/W	Numeric value no limit		
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000		
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000	%	
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000	s	
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000	s	
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000	p/m	
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Alarm]	R	Alarm		
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit		
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000	s	
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
	S4 setup	Type	R/W	Off Control Alarm Fail Simulate HOLD		
		Func [Type: Off]	R	Off		
		Func [Type: Cntrl]	R/W	P PI PID		
		Param [Type: Control]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		PID SP [Type: Control]	R/W	Numeric value no limit		
		PID Rng [Type: Control]	R/W	Numeric value greater than 0.000000		
		PID Dir [Type: Control]	R/W	direct reverse		
		PID MR [Type: Control (Func: P)]	R/W	Numeric value 0.000000 to 100.000000		
		PID I time [Type: Control (Func: PI, PID)]	R/W	Numeric value 1.000000 to 3600.000000		
		PID D time [Type: Control (Func: PID)]	R/W	Numeric value 0.000000 to 60.000000		
		Analog output [Type: Control]	R/W	PF DC		
		Max freq [Type: Control (Analog output: PF)]	R/W	Numeric value 1.000000 to 120.000000		

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		DC time [Type: Control (Analog output: DC)]	R/W	Numeric value 1.000000 to 1800.000000		
		Expire time [Type: Control]	R/W	Numeric value 1.000000 to 1800.000000		
		Func [Type: Alarm]	R	Alarm		
		Param [Type: Alarm]	R/W	NONE CONDUCT [Measure: Cond Only, Cond + Conc] CONCENT1 [Measure: Conc Only] TEMPERATURE CONCENT [Measure: Cond + Conc] CONDUCT2 [Measure: Cond Only] CONCENT2 [Measure: Conc Only]		Parameters can be written but cannot be read correctly. Write the parameters at the front panel display.
		Alarm Sp [Type: Alarm]	R/W	Numeric value no limit		
		Alarm dir. [Type: Alarm]	R/W	Low High		
		Alarm hyst. [Type: Alarm]	R/W	Numeric value greater than 0.000000		
		Alarm delay [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000		
		Expire time [Type: Alarm]	R/W	Numeric value 1.000000 to 1800.000000		
		Func [Type: Fail]	R/W	Hard + Soft Fail Hard Fail Only		The use of Built-in DTM disables Hard + Soft Fail to be selected.
		Func [Type: Simulate]	R/W	ON/Off Percentage		
		Contact [Type: Simulate (Func: ON/OFF)]	R/W	ON OFF		
		Percentage [Type: Simulate (Func: percentage)]	R/W	Numeric value 0.000000 to 100.000000	%	
		Func [Type: HOLD]	R	HOLD contact		
	HOLD setup	HOLD L/F	R/W	Last Fixed		
		mA1 Fixed [HOLD L/F: Fixed]	R/W	Numeric value 3.600000 to 21.000000	mA	
		mA2 Fixed [HOLD L/F: Fixed]	R/W	Numeric value 3.600000 to 21.000000	mA	
		HOLD during cal	R/W	disabled enabled		
	Error config	Cond too high	R/W	Off Warn Fail		
		SC hi lim	R/W	Numeric value 0.100000 to 3.000000	S	

ISC450G		Parameter	R/W	Parameter Value	Unit	Note
		Cond too low	R/W	Off Warn Fail		
		SC Lo lim	R/W	Numeric value 0.000000 to 0.000100	S	
		Temp too high	R/W	Off Warn Fail		
		Temp too low	R/W	Off Warn Fail		
		Cal time exc	R/W	Off Warn Fail		
		1st comp mtrx	R/W	Warn Fail		
		2nd comp mtrx	R/W	Warn Fail		
		Conc table	R/W	Warn Fail		
	Logbook config	Sensor logbook	R/W	Error on Error off Temp Coeff. Air adjust limit Adj CC lo lim Adj CC hi lim Reference temp Stab. Time	Multiple checkbox allows more than one option to be selected.	
		mA logbook	R/W	mA setup Hold fixed value PID setpoint PID range Manual reset PID I time PID D time Burn Linear % Damping time Expire time	Multiple checkbox allows more than one option to be selected	
		Contact logbook	R/W	Contact setup PID setpoint PID range Manual reset PID I time PID D time Control type DC period time Max pulse freq. Alarm setpoint Alarm direction Alarm hysteresis Alarm delay time Expire time	Multiple checkbox allows more than one option to be selected	
		Erase logbook	R/W	Calibration Sensor All logbook	A confirmation message appears before deleting.	A confirmation message appears before deleting.
		Warn logbook full	R/W	No Yes		
	Basic setup	Tag	R/W	Alphanumeric		
Distributor		R	—			
Model		R	—			
Device information	Descriptor	R/W	Alphanumeric			
	Message	R/W	Alphanumeric			
	Poll addr	R/W	Numeric value 0 to 15		The use of Built-in DTM disables the setting properly.	

ISC450G	Parameter	R/W	Parameter Value	Unit	Note
	Num resp preams	R/W	Numeric value 0 to 255		The use of Built-in DTM disables the setting properly.
Review	Model	R	—		
	Distributor	R	—		
	Write protect	R	—		
	Manufacturer	R	—		
	Dev id	R	—		
	Tag	R	—		
	Descriptor	R	—		
	Message	R	—		
	Date	R	—		
	Universal rev	R	—		
	Fld dev rev	R	—		
	Software rev	R	—		
	Poll addr	R	—		
	Num resp preams	R	—		

Note : Built-in DTM may replace characters with unintended ones or disable settings appropriately. °C is replaced with ℃, °F is replaced with ℉. Use a device DTM or check at the front panel display.

Revision Information

Title : PH450G/SC450G/ISC450G pH/ORP/Conductivity Converters HART Communication
Manual number : TI 12A01A01-60EN

Sep. 2017/1st Edition
Newly published

■ For further information visit Yokogawa website. <http://www.yokogawa.com/an/>

Yokogawa Electric Corporation
2-9-32 Nakacho, Musashino-shi, Tokyo 180-8750, JAPAN
Printed by KOHOKU PUBLISHING & PRINTING INC.
