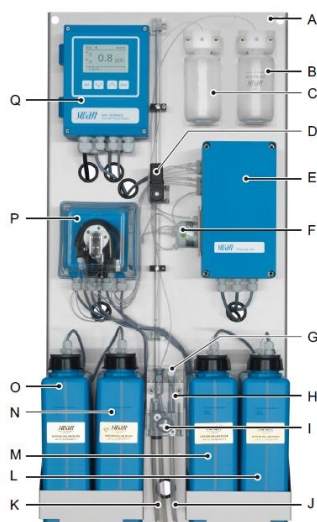


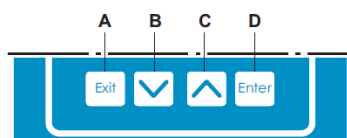
# Swan AMI Silitrace Quick Reference Guide

## Overview



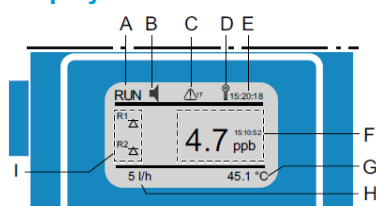
- A – Panel
- B – Standard bottle
- C – Grab sample bottle
- D – Solenoid valve for zero calibration
- E – Photometer module
- F – 6-way valve
- G – Flow regulating valve
- H – Flow cell
- I – Flow meter
- J – Sample inlet
- K – Sample outlet
- L – Reagent 4
- M – Reagent 3
- N – Reagent 2
- O – Reagent 1
- P – Peristaltic pump
- Q – Transmitter

## Keys



- A – to exit a menu or command (rejecting any changes) to move back to the previous menu level
- B – to move DOWN in a menu list and to decrease digits
- C – to move UP in a menu list and to increase digits
- D – to open a selected sub-menu to accept an entry

## Display



- A – INIT Warming up the reaction chamber
- RUN normal operation
- HOLD input closed or cal delay: Instrument on hold (shows status of signal outputs).
- OFF input closed: control/limit is interrupted (shows status of signal outputs).
- GRAB A grab sample measurement is in progress

- B – ERROR Error Fatal Error
- C – Reagent low, indicates remaining reagents in % (17% = 340 ml)
- D – Keys locked, transmitter control via Profibus
- E – Time
- F – Process value with time stamp
- G – Reaction chamber temperature **Target: 45°C**
- H – Sample flow - **5 – 10 l/h**
- I – Relay status

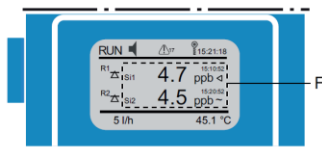
### Relay status, symbols

- upper/lower limit not yet reached
- upper/lower limit reached
- control upw./downw. no action
- control upw./downw. active, dark bar indicates control intensity
- motor valve closed
- motor valve: open, dark bar indicates approx. position
- timer
- timer: timing active (hand rotating)

# Swan AMI Silitrace Quick Reference Guide

## Overview - continued

Display when operating with  
two or more sample streams



F – Process values with time stamp

Si1 –Si6: Sample streams 1 to 6, according to the number of available channels.

Up to 3 process values can be displayed on one screen.

Toggle screens with the [] key.

### Icon description

- ◀ Active measurement
- ◁ Position of valve
- ~ No sample flow
- n Measurement not valid
- x Sample stream inactive (only visible if a Sample Sequencer is connected to the AMI Silitrace and measuring mode <internal> is selected).

**It is common for “n” to display on occasions at the right-hand side until the analyser has “validated” the measurement.**

## Maintenance

### Daily

- Check flow on all channels. Check timestamp of last measurement.
- Check reagent levels

### Monthly

- Replace reagents

### Every 2 – 3 months

- Check standard solution and exchange if necessary.

### Semiannual

- Exchange pump tubes. Perform a calibration after exchanging the pump tubes.

### When required

- E020, FOME dirty: Clean the photometer with 5% NH3 solution.



### **CAUTION - Pollution of reagents possible.**

If the occlusion frames of the peristaltic pump are opened during operation, already mixed reagents will flow back into the reagent canisters and pollute the reagents. Refer to the Maintenance section of the manual for more information.

### Zero

By default, the system is programmed to carry out an automatic zero at 12:30am every day. To check the results of the zeroing process, Select DIAGNOSTICS -> SENSORS -> HISTORY -> ZERO HISTORY. The value should be close to 2.2V

To manually perform a zero, select MAINTENANCE -> ZERO

### Verification

By default, the system is programmed to carry out an automatic verification at 06:00am every Monday. To check the results of the verification process, Select DIAGNOSTICS -> SENSORS -> HISTORY -> VER. HISTORY. The value should be close to the value of the standard being used (eg 100ppb)

To manually perform a zero, select MAINTENANCE -> VERIFICATION

### Calibration

To check the results of the calibration process, Select DIAGNOSTICS -> SENSORS -> HISTORY -> CAL. HISTORY.

To manually perform a zero, select MAINTENANCE -> CALIBRATION

A calibration should be performed when the peristaltic pump tubes are replaced

# Swan AMI Silitrace Quick Reference Guide

## Reagent set for AMI Silitrace

### Contents

- ♦ **Reagent 1: bags 1a and 1b for canister 1** ammonium molybdate and sodium hydroxyde
- ♦ **Reagent 2: bottle 2 for canister 2** sulphuric acid 25%
- ♦ **Reagent 3: bag 3 for canister 3** oxalic acid dihydrate
- ♦ **Reagent 4: bag 4a and bottle 4b for canister 4** ammonium ferrous sulfate hexahydrate sulphuric acid 25% containing detergent
- ♦ **Reagent filters (12x)**



### CAUTION

#### Chemical exposure hazard

- ♦ Observe the necessary security measures when manipulating dangerous chemicals.
- ♦ Read the Material Safety Data Sheets carefully!

### Personal protective equipment:



*Reagent 3:*

*H302: Harmful if swallowed.*

*H312: Harmful in contact with skin.*



*H315: Causes skin irritation.*

*H318: Causes serious eye damage. H373: May cause damage to organs through prolonged or repeated exposure.*



*Reagent 4a:*

*H315: Causes skin irritation*

*H319: Causes serious eye irritation*

*H335: May cause respiratory irritation*



*Reagent 1b, reagent 2, reagent 4b:*

*H314: Causes severe skin burns and eye damage*



# Swan AMI Silitrace Quick Reference Guide

## Preparation

**Note:** Please consider the following points when preparing new reagents:

- Reagent 3, oxalic acid dissolves very slowly, we therefore recommend to prepare reagent 3 first.
- Reagent 1, add sodium hydroxide (reagent 1b) first.
- Before refilling rinse all containers well with demineralized water.

## Reagent 3:

- 1 Fill canister 3 with approx. 1.5 litres of **ultrapure water**.
- 2 Add reagent 3 to canister 3.
- 3 Close the canister with a screw cover and shake well.
- 4 Fill up the canister to the 2 L mark, close it and shake again.

## Reagent 1:

- 1 Fill canister 1 with approx. 1.5 litres of **ultrapure water**.
- 2 First add the content of bag 1b (sodium hydroxyde).
- 3 Close the canister with a screw cover and shake well until the sodium hydroxyde is dissolved.
- 4 Add the content of bag 1a.
- 5 Fill up the canister to the 2 L mark, close it and shake again.

## Reagent 2:

- 1 Fill canister 2 with approx. 1.5 litres of **ultrapure water**.
- 2 Add the bottle 2 (sulfuric acid 25%).
- 3 Close the canister with a screw cover and shake well.
- 4 Fill up the canister to the 2 L mark, close it and shake again.

## Reagent 4:

- 1 Fill canister 4 with approx. 1.5 litres of **ultrapure water**.
- 2 First add bag 4a.
- 3 Close the canister with a screw cover and shake well.
- 4 Add bottle 4b. Rinse the residual foam in bottle 4b with **ultrapure water** and fill it into the canister until the 2 L mark is reached.
- 5 Close the canister with a screw cover and shake well. *Some foam forms on the surface.*

## All canisters:

Always replace the reagent filters (included with each reagent set) when preparing new reagents. Insert suction lances into the containers. Make sure that the numbers on the suction lances correspond to the numbers on the containers.





# Swan AMI Silitrace Quick Reference Guide

## Error Messages

To view active error messages, press ENTER to open menu system, select MESSAGES -> PENDING ERRORS. Consult the manual for a full list of error messages.

**HINT: With any Swan system, press ENTER 3 times from the home screen to bring up the PENDING ERRORS list.**

## Reorder codes

Product Code	Description	Image
A-85.142.500	Silica standard solution 100ppb, stabilised, bottle with 250ml	
A-85.420.860	Reagent set Oxycon On-line Silitrace For 3 month operation	
A-86.191.885	Tubing kit PeriClip pump AMI Silitrace  Contains: 1x frame with tube Ø2.8mm 4x frames with tube Ø0.64mm	
C-82.881.000	Airfilter Set, 10pcs.	
A-83.590.140	Spare Parts Kit for <b>2 channel</b> back pressure regulator	