



The Company

We are an established world force in the design and manufacture of instrumentation for industrial process control, flow measurement, gas and liquid analysis and environmental applications.

As a part of ABB, a world leader in process automation technology, we offer customers application expertise, service and support worldwide.

We are committed to teamwork, high quality manufacturing, advanced technology and unrivalled service and support.

The quality, accuracy and performance of the Company's products result from over 100 years experience, combined with a continuous program of innovative design and development to incorporate the latest technology.

The UKAS Calibration Laboratory No. 0255 is just one of the ten flow calibration plants operated by the Company and is indicative of our dedication to quality and accuracy.

EN ISO 9001:2000



Cert. No. Q 05907

EN 29001 (ISO 9001)



Lenno, Italy – Cert. No. 9/90A

Stonehouse, U.K.



Use of Instructions



Warning.

An instruction that draws attention to the risk of injury or death.



Note.

Clarification of an instruction or additional information.



Caution.

An instruction that draws attention to the risk of damage to the product, process or surroundings.



Information.

Further reference for more detailed information or technical details.

Although **Warning** hazards are related to personal injury, and **Caution** hazards are associated with equipment or property damage, it must be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process system performance leading to personal injury or death. Therefore, comply fully with all **Warning** and **Caution** notices.

Information in this manual is intended only to assist our customers in the efficient operation of our equipment. Use of this manual for any other purpose is specifically prohibited and its contents are not to be reproduced in full or part without prior approval of the Marketing Communications Department.

Health and Safety

To ensure that our products are safe and without risk to health, the following points must be noted:

1. The relevant sections of these instructions must be read carefully before proceeding.
2. Warning labels on containers and packages must be observed.
3. Installation, operation, maintenance and servicing must only be carried out by suitably trained personnel and in accordance with the information given.
4. Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.
5. Chemicals must be stored away from heat, protected from temperature extremes and powders kept dry. Normal safe handling procedures must be used.
6. When disposing of chemicals ensure that no two chemicals are mixed.

Safety advice concerning the use of the equipment described in this manual or any relevant hazard data sheets (where applicable) may be obtained from the Company address on the back cover, together with servicing and spares information.

CONTENTS

BOOK 7 KEYPAD VERSION

Section	Page
1 INTRODUCTION	1
2 CONTROLS AND DISPLAYS	2
2.1 Displays	2
2.2 Switch Familiarisation	2
2.3 Rapid Reset/Escape	2
3 OPERATION	3
3.1 Startup	3
3.2 Operation	3
3.3 Access to Secure Parameters	4
3.3.1 Security Codes	4
3.3.2 Changing Parameter Values and	4
Variables	4
3.4 Menu Layout	5
3.5 Parameter Access and Change	6

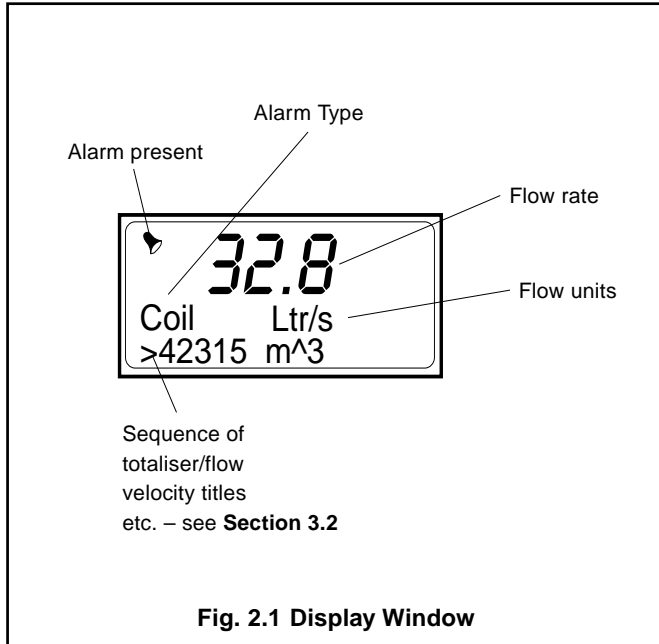
1 INTRODUCTION

This manual provides details to enable the Keypad MagMaster™ transmitter to be reconfigured from default parameters or from parameters initially set up by the factory to special order.

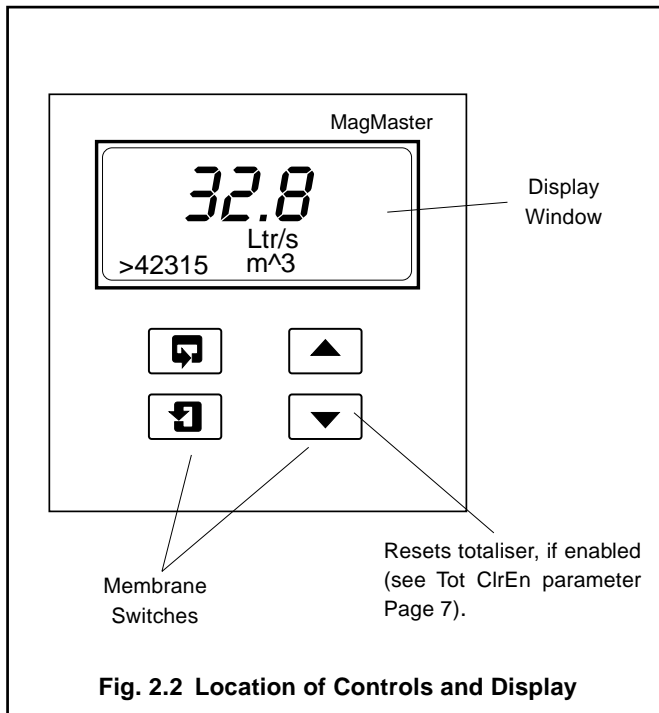
2 CONTROLS AND DISPLAYS

2.1 Displays – Fig. 2.1

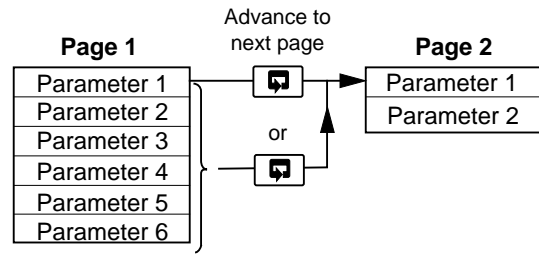
The display comprises a 5-digit, 7-segment digital upper display line and two 16-character dot-matrix lower display lines. The upper display shows the flow value. The middle display line shows alarm codes on the left, when an alarm is present – see **Book 5 Fault Finding**, and flow units in the centre. The lower display line shows user information – see Section 3.1.



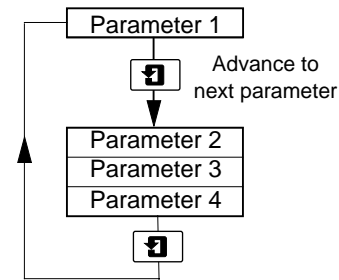
2.2 Switch Familiarization – Fig. 2.2



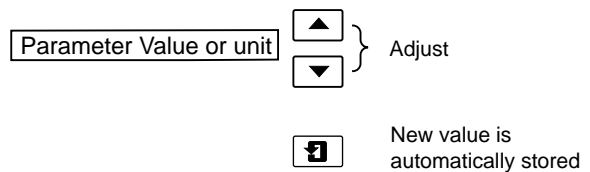
A – Advancing to Next Page



B – Moving Between Parameters



C – Adjusting and Storing a Parameter Value



D – Selecting and Storing a Parameter Choice

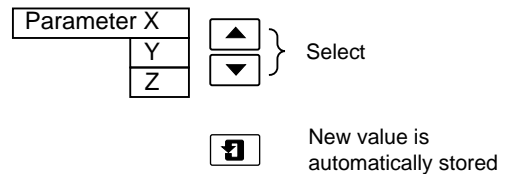


Fig. 2.3 Membrane Switch Functions

2.3 Rapid Reset/Escape

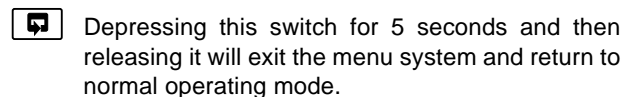


Fig. 2.4 Rapid Reset/Escape Switch

3.1 Startup

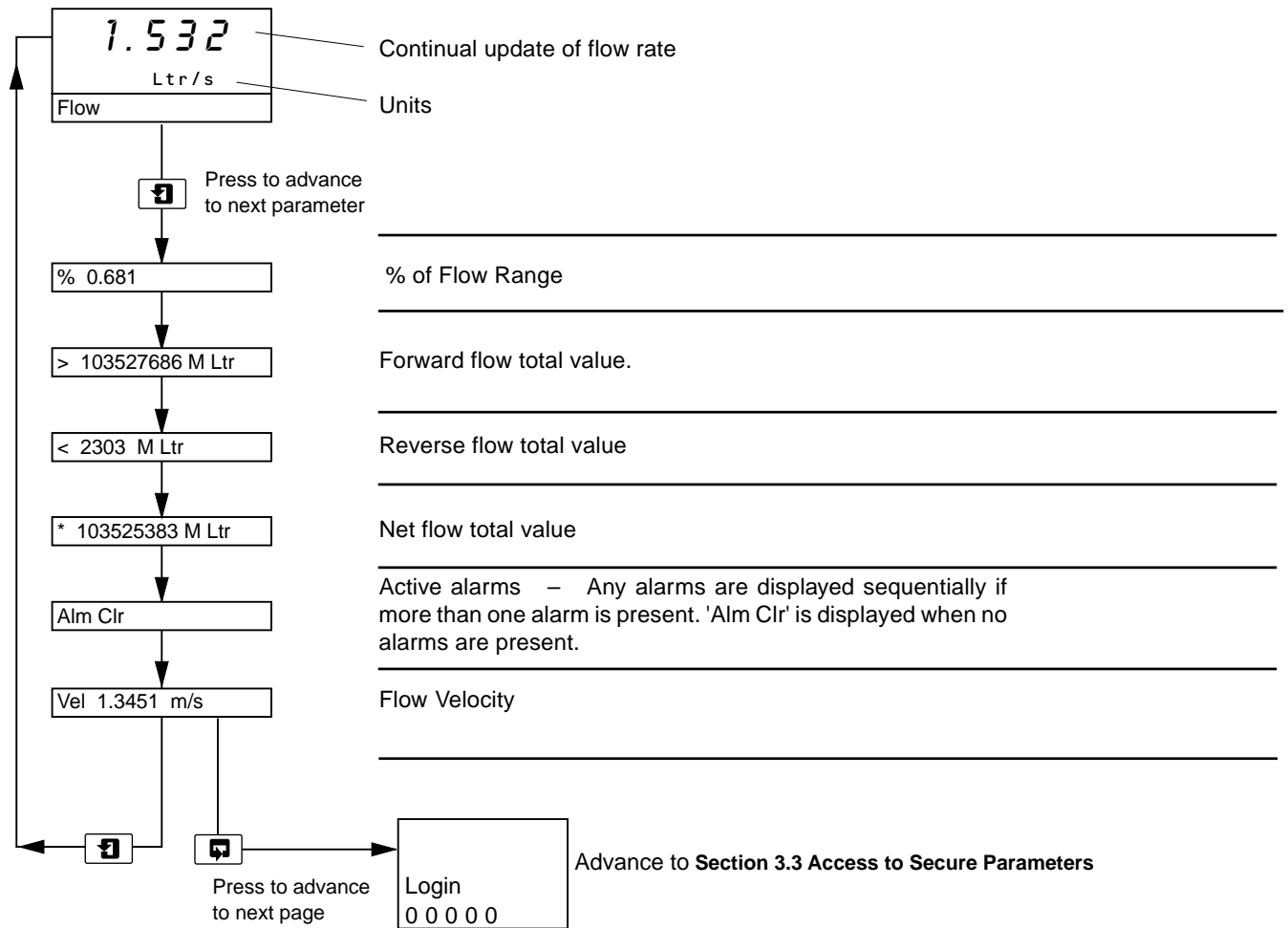
Ensure all necessary electrical connections have been made and switch on the power supply to the flowmeter.

After a short delay, the bottom line of the display will alternate between 'ABB Kent-Taylor' and 'MagMaster V x.x' (MagMaster software version).

In a few seconds the flow rate will appear on the display together with the flow rate units.

3.2 Operation

Viewing User Information (Read Only)



...3 OPERATION

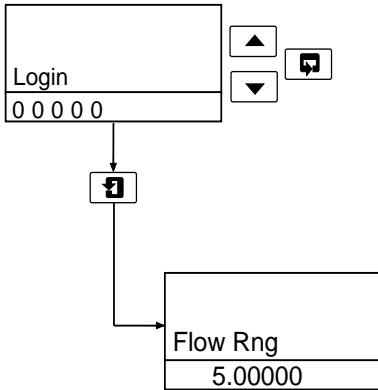
3.3 Access to Secure Parameters

A 5-digit security code is used to prevent tampering with the secure parameters

3.3.1 Security Codes

A code number, between 00000 and 99999, must be entered, to gain access to the secure parameters. A default user code of '10760' has been installed, but this may be changed if required with the 'Login Key 1' parameter - see Section 3.4 Menu Layout.

An 'engineer' code (default - 56360) is used to gain access to test procedures, security code settings and parameters not essential at the user level. This code can be changed if required with the 'Login Key 2' parameter – see Section 3.4 Menu Layout.



At the flashing cursor on the first digit of the Login code number, press either or membrane switches to reach the required digit. To set this digit and pass to the next digit, depress the switch. Continue until all digits have been set, and depress the switch to enter the complete code. If an incorrect value is entered, access to subsequent programming pages is prevented and the display reverts to the Operating Page.

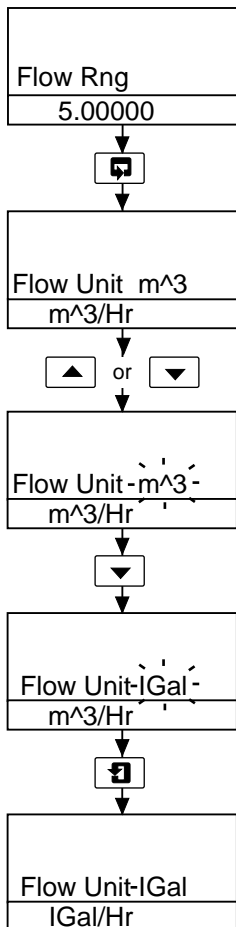
Flow Range Parameter

Press to advance to next parameter – see Section 3.4 Menu Layout.

or

Press to advance to next page – see Section 3.4 Menu Layout.

These two switches are used to advance to all subsequent parameters and pages. If a parameter is changed, it is automatically stored on operation of the switch.



3.3.2 Changing Parameter Values and Variables

When a parameter is selected, which holds one or more variable units e.g. 'Flow Unit' parameter which can be Litres, Cubic metres, Gallons etc., proceed as follows to change the units: ('Flow Rng' selected).

'Flow Unit' selected.

Press or switch to change the units.

Note the existing units will flash at the first depression of the or switch, and further switch depressions will change the type of units displayed.

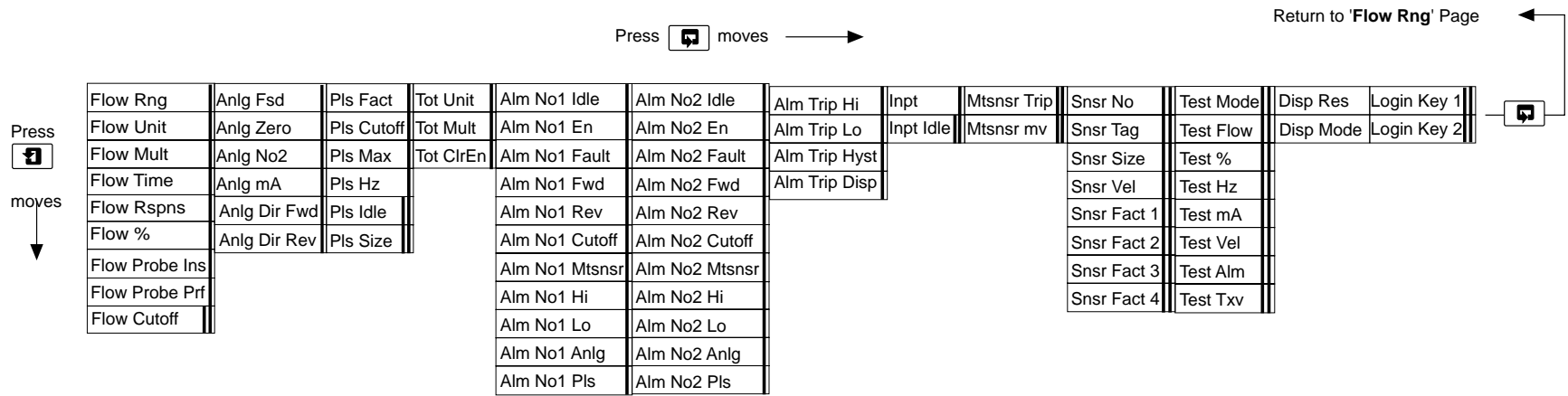
Depressing the switch will now enter the newly selected units.

This type of action is similar for all variable units.

Where numerical values are to be changed, initial depression of the or switches cause the first of five digits to be highlighted by a flashing cursor. Change the value with the and switches, the particular digit with the switch and enter the final selection with the switch.

3.4 Menu Layout

Below is a summary of all the parameters contained in the menu.



Key





...3 OPERATION



3.5 Parameter Access and Change


The correct security level **MUST** be selected as in **Section 3.3**.

Select the parameter to read the value, or to change it as necessary. All 'live' data displayed is updated each second.

Use the  key to move between pages.

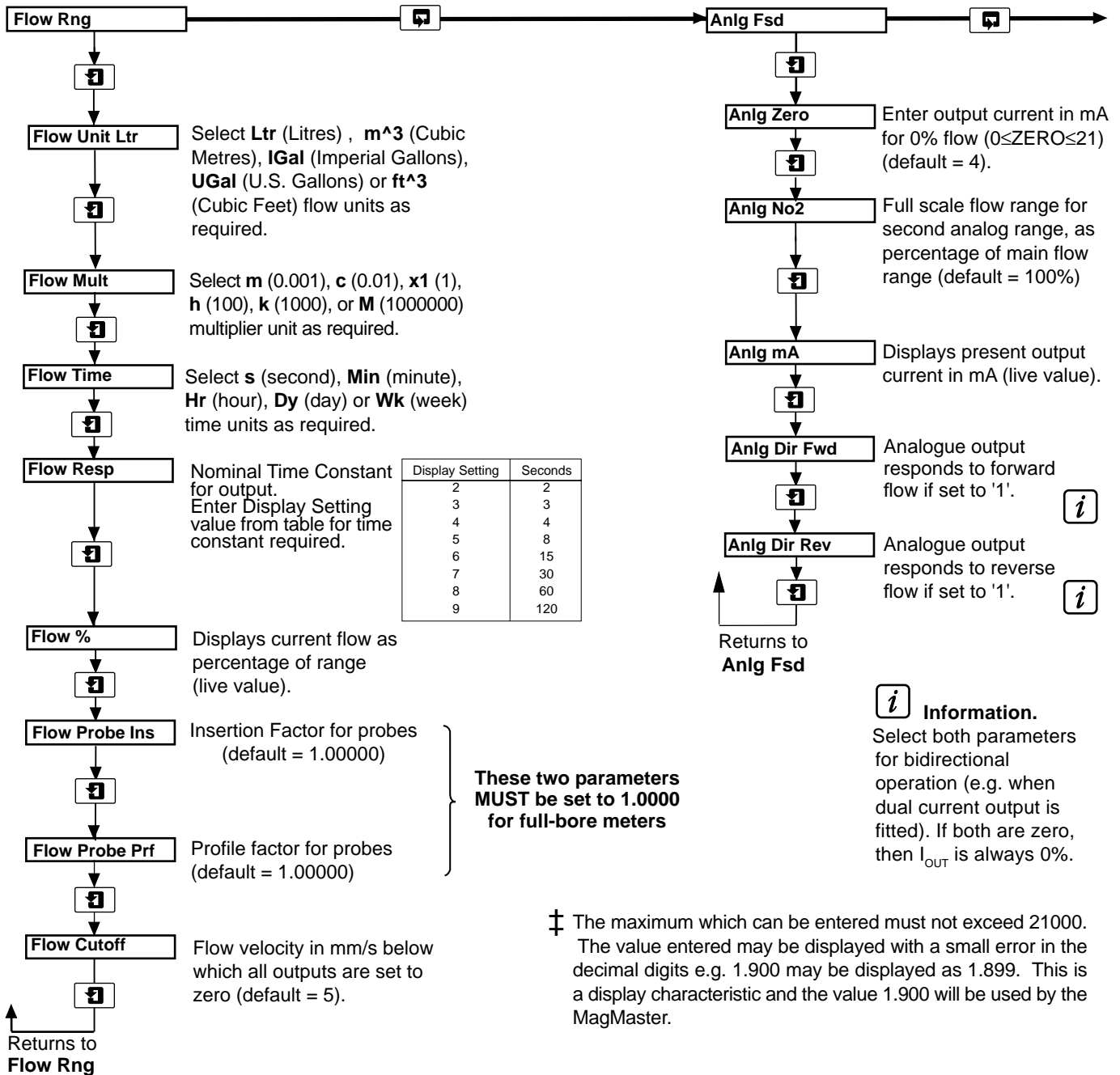
Use the  key to move between parameters.

The  and  keys change displayed values and units.

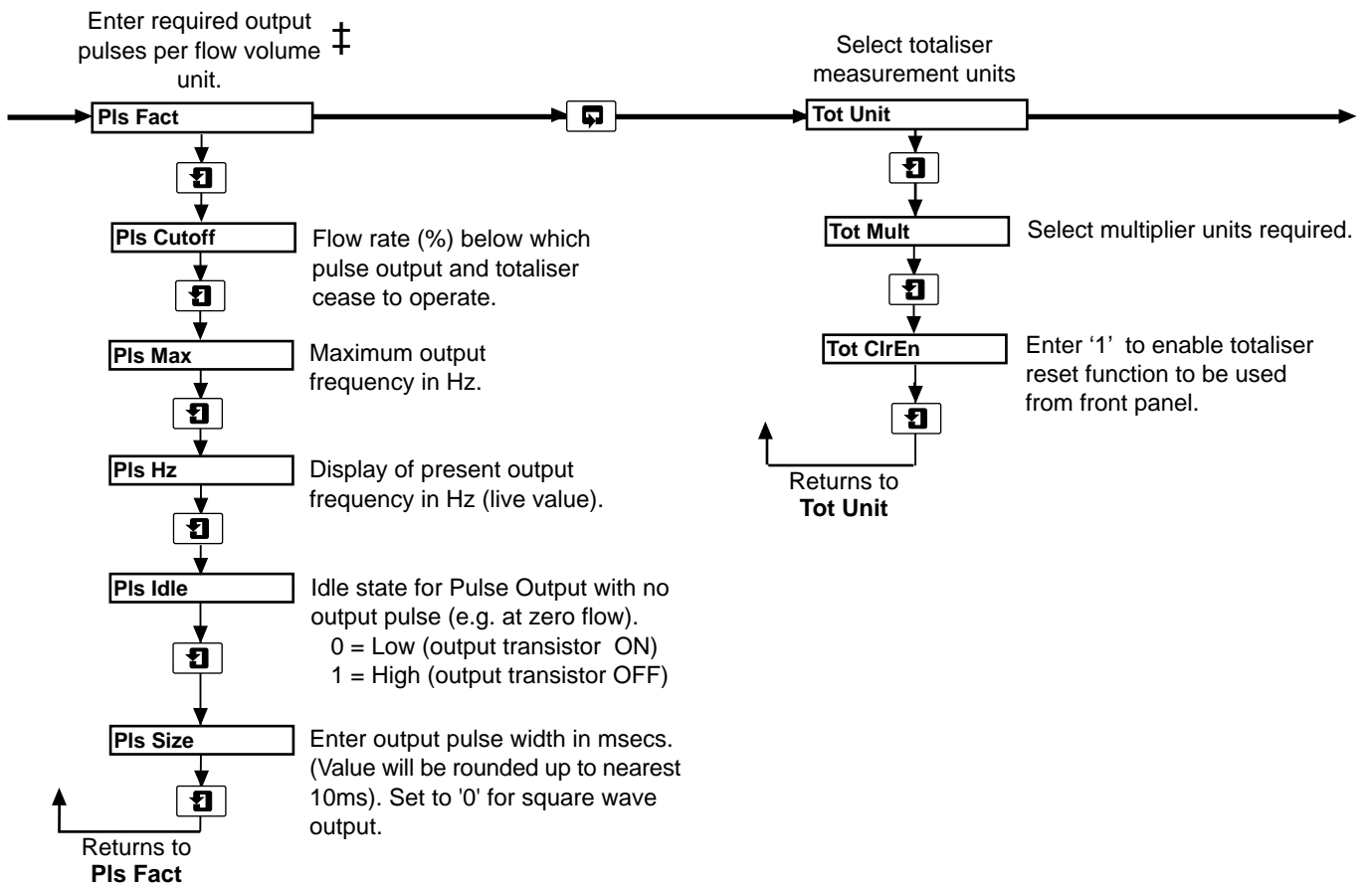
The  key will accept the chosen value or unit.

Enter main full scale (100%) flow range (Upper Range Value) in selected flow units (see below)‡

Enter output current in mA for 100% flow ($0 \leq \text{FSD} \leq 21$) (default = 20.)



...3.5 Parameter Access and Change



‡ The maximum which can be entered must not exceed 21000. The value entered may be displayed with a small error in the decimal digits e.g. 1.900 may be displayed as 1.899. This is a display characteristic and the value 1.900 will be used by the MagMaster.

...3 OPERATION

...3.5 Parameter Access and Change

Select Alarm 1 output functions.

'1' = selected. '0' = deselected

Idle state for alarm output. With no alarm active:

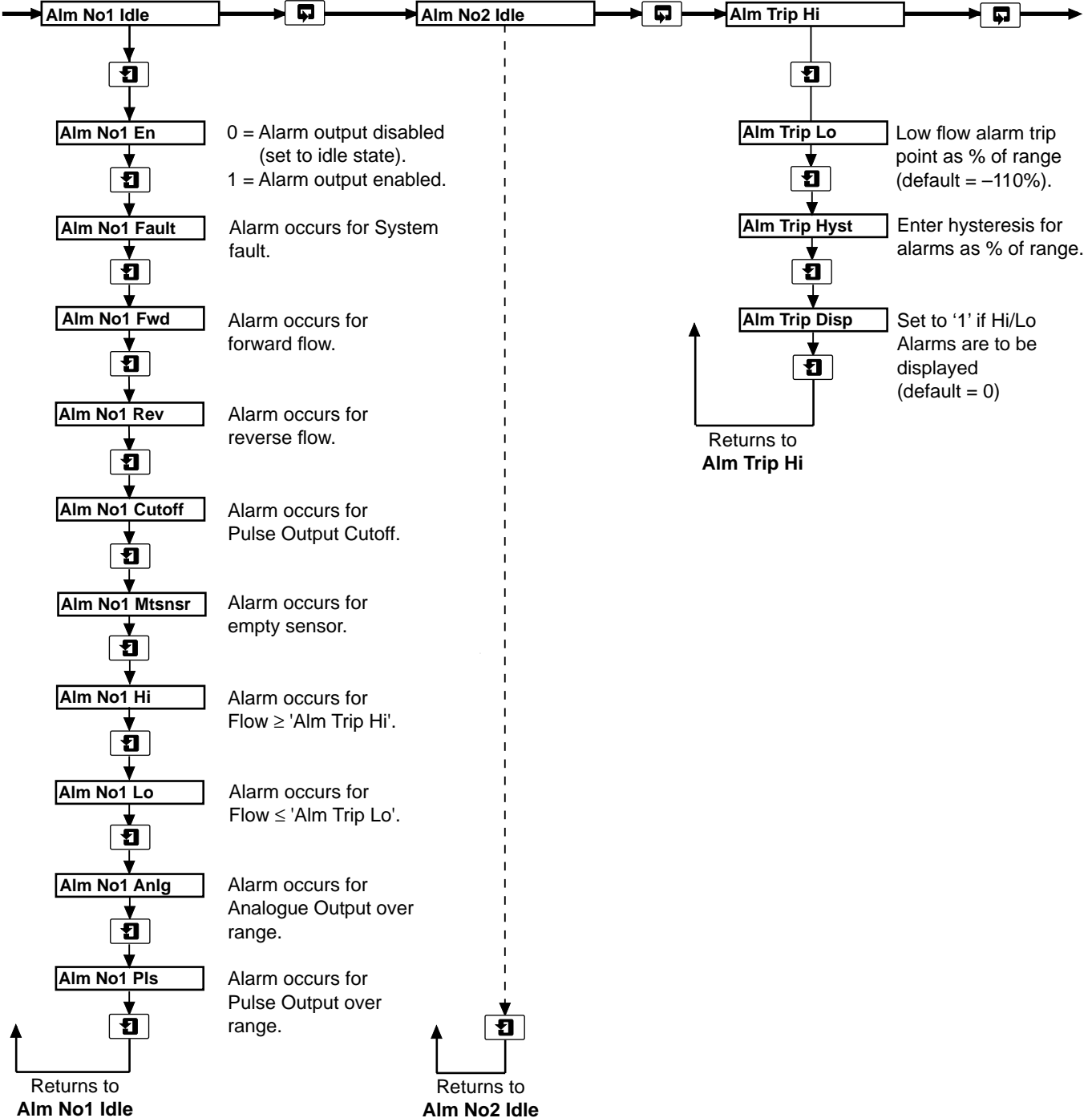
0 = Low (O/P transistor ON)
1 = High (O/P transistor OFF)

Select Alarm 2 output functions.

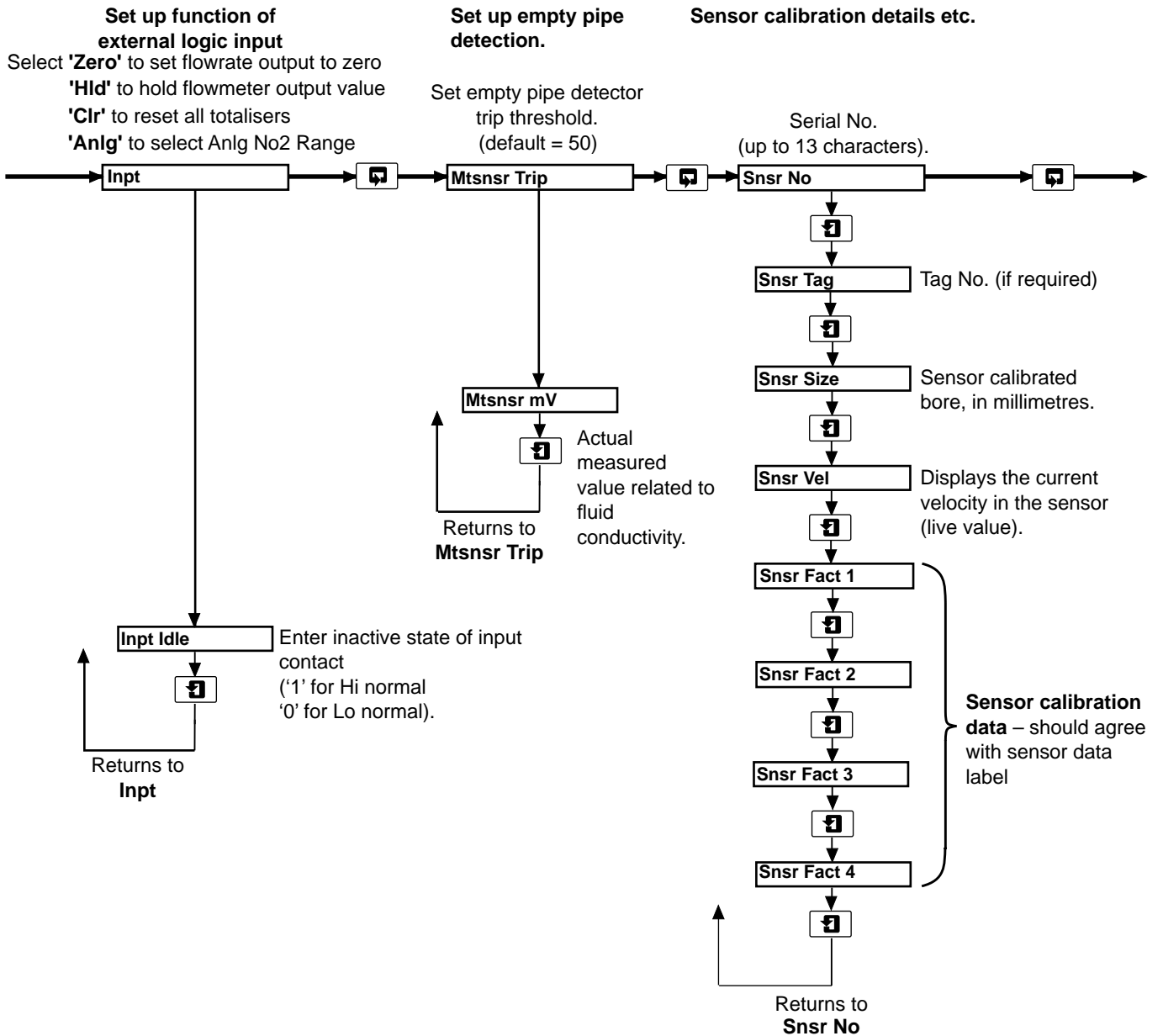
Identical to, but independent of, Alarm 1

Select high and low flow alarm trip points.

High flow alarm trip point as % of range (default = +110%).

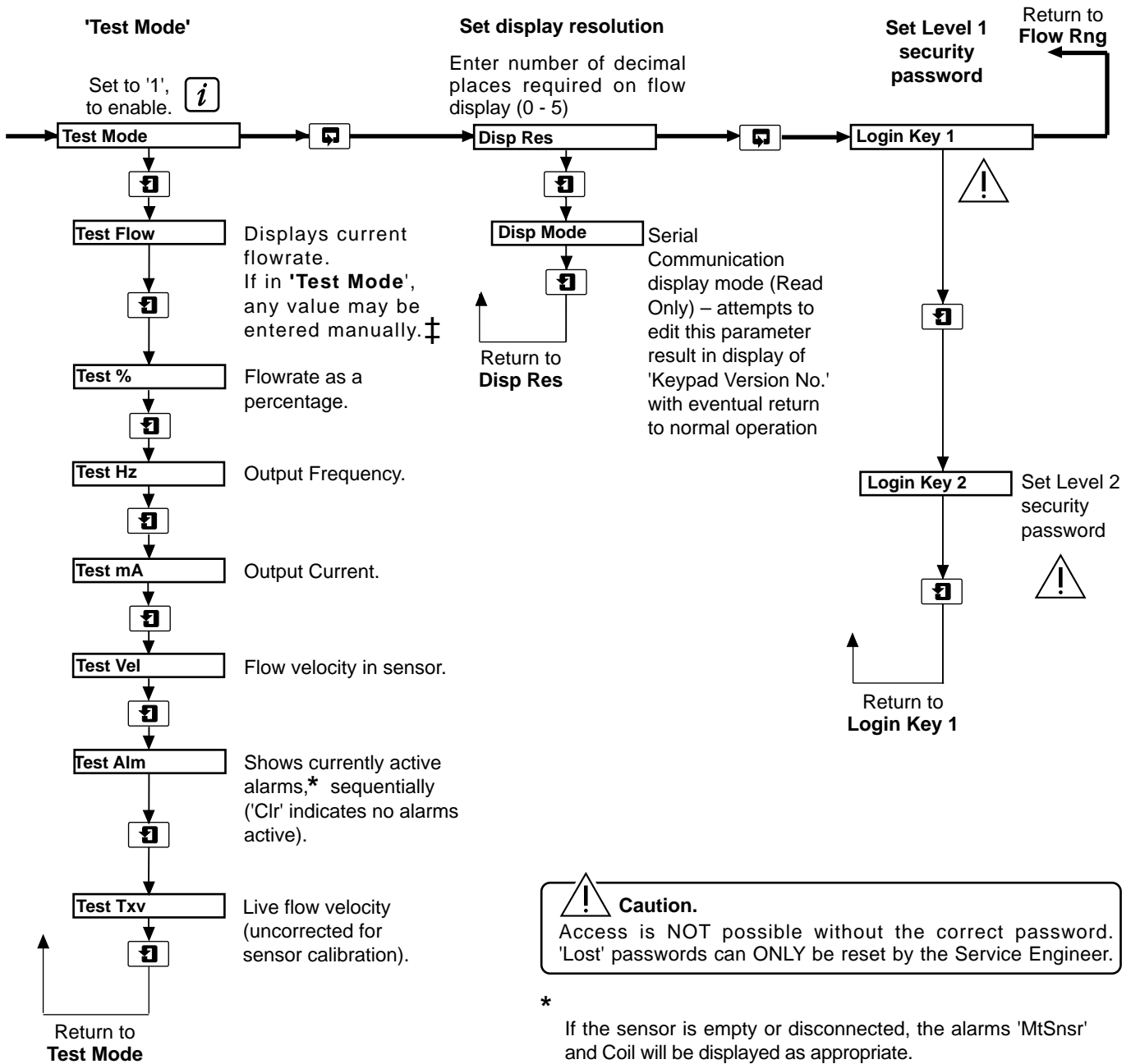


...3.5 Parameter Access and Change



...3 OPERATION

...3.5 Parameter Access and Change



Information.
On performing a Rapid Reset/Escape to return to 'Operation' level, 'Test Mode' is automatically cancelled.

Caution.
Access is NOT possible without the correct password. 'Lost' passwords can ONLY be reset by the Service Engineer.

* If the sensor is empty or disconnected, the alarms 'MtSnsr' and Coil will be displayed as appropriate.

‡ The maximum which can be entered must not exceed 21000. The value entered may be displayed with a small error in the decimal digits e.g. 1.900 may be displayed as 1.899. This is a display characteristic and the value 1.900 will be used by the MagMaster.

NOTES

PRODUCTS & CUSTOMER SUPPORT

Products

Automation Systems

- *for the following industries:*
 - Chemical & Pharmaceutical
 - Food & Beverage
 - Manufacturing
 - Metals and Minerals
 - Oil, Gas & Petrochemical
 - Pulp and Paper

Drives and Motors

- *AC and DC Drives, AC and DC Machines, AC motors to 1kV*
- *Drive systems*
- *Force Measurement*
- *Servo Drives*

Controllers & Recorders

- *Single and Multi-loop Controllers*
- *Circular Chart, Strip Chart and Paperless Recorders*
- *Paperless Recorders*
- *Process Indicators*

Flexible Automation

- *Industrial Robots and Robot Systems*

Flow Measurement

- *Electromagnetic Flowmeters*
- *Mass Flow Meters*
- *Turbine Flowmeters*
- *Flow Elements*

Marine Systems & Turbochargers

- *Electrical Systems*
- *Marine Equipment*
- *Offshore Retrofit and Refurbishment*

Process Analytics

- *Process Gas Analysis*
- *Systems Integration*

Transmitters

- *Pressure*
- *Temperature*
- *Level*
- *Interface Modules*

Valves, Actuators and Positioners

- *Control Valves*
- *Actuators*
- *Positioners*

Water, Gas & Industrial Analytics Instrumentation

- *pH, conductivity, and dissolved oxygen transmitters and sensors*
- *ammonia, nitrate, phosphate, silica, sodium, chloride, fluoride, dissolved oxygen and hydrazine analyzers.*
- *Zirconia oxygen analyzers, katharometers, hydrogen purity and purge-gas monitors, thermal conductivity.*

Customer Support

We provide a comprehensive after sales service via a Worldwide Service Organization. Contact one of the following offices for details on your nearest Service and Repair Centre.

United Kingdom

ABB Limited
Tel: +44 (0)1453 826661
Fax: +44 (0)1453 829671

United States of America

ABB Inc.
Tel: +1 (0) 755 883 4366
Fax: +1 (0) 755 883 4373

Client Warranty

Prior to installation, the equipment referred to in this manual must be stored in a clean, dry environment, in accordance with the Company's published specification.

Periodic checks must be made on the equipment's condition. In the event of a failure under warranty, the following documentation must be provided as substantiation:

1. A listing evidencing process operation and alarm logs at time of failure.
2. Copies of all storage, installation, operating and maintenance records relating to the alleged faulty unit.

ABB has Sales & Customer Support
expertise in over 100 countries worldwide

www.abb.com

The Company's policy is one of continuous product
improvement and the right is reserved to modify the
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