

SM1000

Videographic recorder

Custom configuration

1 Introduction

ABB can supply custom configurations for the SM1000 Videographic Recorder on request.

Enter the required setting or place a check mark (✓) against the relevant parameters in the following tables and return this document to the Global Sales office at Stonehouse.

2 Hardware configuration

Number of Channels (✓ the number required)

0	
6	
12	

Archive Media Type (✓ the type required)

None	
SmartMedia	
Compact Flash	

Software Options (✓ the option required)

None	
Totalizers	
Math & Logic	

Module Options (✓ the type of module required in each position)

Type	Position			
	A	B	C	D
None	N/A			
Analog Input	✓			
3 Relays	Reserved for analog inputs	Reserved for analog inputs if 12 channels required		
6 Relays				
Hybrid				
Transmitter Power Supply				
Ethernet				
RS485 Communications				

3 Common configuration

3.1 Setup tab

Referring to Section 4.4.1 of the User Guide (IM/SM1000), enter the settings required for each of the parameters.

Number of Groups (✓ the number required)

1	
2	

Language (✓ the language required)

English	
French	
German	
Italian	
Spanish	

Global Alarm Acknowledge Source

(enter a source to acknowledge all alarms)

Instrument Tag

(enter a tag used to identify the instrument)

3.2 Screen tab

Screen Saver wait time	
Screen Capture	

3.3 Security tab

Security System (✓ the box required)

Basic	
Advanced	

Configuration Security (✓ the box required)

Password Protected	
Internal Switch Protected	

Set up Level security (✓ the box required)

On	
Off	

Reconfigure Preset (✓ the box required)

No	
Yes	

Password Expiry (✓ the box required)

Disabled	
7 days	
14 days	
30 days	
60 days	

90 days	
180 days	
360 days	

User inactivity Disabling (✓ the box required)

Disabled	
7 days	
14 days	
30 days	
60 days	
90 days	
180 days	
360 days	

Password Failure limit (✓ the box required)

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Infinite	

Minimum password Length (✓ the box required)

4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

3.4 User tab

User 1 Name	
User 1 Access	
User 1 Password	

User 2 Name	
User 2 Access	
User 2 Password	

User 3 Name	
User 3 Access	
User 3 Password	

User 4 Name	
User 4 Access	
User 4 Password	

User 5 Name	
User 5 Access	
User 5 Password	

User 6 Name	
User 6 Access	
User 6 Password	

User 7 Name	
User 7 Access	
User 7 Password	

User 8 Name	
User 8 Access	
User 8 Password	

User 9 Name	
User 9 Access	
User 9 Password	

User 10 Name	
User 10 Access	
User 10 Password	

User 11 Name	
User 11 Access	
User 11 Password	

User 12 Name	
User 12 Access	
User 12 Password	

3.5 Logs

Alarm log size (10-200)	
Totalizer Log size (10-200)	
Audit Log size (10-200)	

3.6 Operator messages

Operator Message 1

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 2

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 3

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 4

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 5

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 12

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 6

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 13

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 7

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 14

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 8

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 15

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 9

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 16

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 10

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 17

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 11

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 18

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 19

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 22

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 20

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 23

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 21

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

Operator Message 24

Message Tag	
Source ID	
Assign to Group 1	
Assign to Group 2	

4 Group configuration

Referring to Section 4.5.1 of the User Guide (IM/SM1000), enter the settings required for each of the parameters.

4.1 Process group 1

4.1.1 Recording tab

Tag (enter a tag used to identify the process group)

Recording Enable Source

(enter a source to enable/disable recording)

Primary Sample Rate

(enter the primary sampling rate required)

Secondary Sample Rate

(enter the secondary sampling rate required)

Sample Rate Select Source

(enter a source to enable switching between sample rates)

4.1.2 Archive tab

Archive File Format (✓ the file format required)

Text Format	
Binary Format	

Archive File Enables (✓ the data types to be archived)

Channel Data Files (*.b or *.d)	
Alarm Event Log Files (*.e)	
Totalizer Log Files (*.t)	
Audit Log Files (*.a)	

Filename Tag

([text format files only] enter the filename required)

New File Interval

([text format files only] ✓ the frequency required)

Hourly	
Daily	
Monthly	
None	

Wrap (✓ the setting required)

Off	
On	

4.2 Process group 2

4.2.1 Recording tab

Tag (enter a tag used to identify the process group)

Recording Enable Source

(enter a source to enable/disable recording)

Primary Sample Rate

(enter the primary sampling rate required)

Secondary Sample Rate

(enter the secondary sampling rate required)

Sample Rate Select Source

(enter a source to enable switching between sample rates)

4.2.2 Archive tab

Archive File Format (✓ the file format required)

Text Format	
Binary Format	

Archive File Enables (✓ the data types to be archived)

Channel Data Files (*.b or *.d)	
Alarm Event Log Files (*.e)	
Totalizer Log Files (*.t)	
Audit Log Files (*.a)	

Filename Tag

([text format files only] enter the filename required)

New File Interval

([text format files only] ✓ the frequency required)

Hourly	
Daily	
Monthly	
None	

Wrap (✓ the setting required)

Off	
On	

4.3 Chart (group 1)

Chart View enable (✓ the box required)

Horizontal →	
Horizontal ←	
Vertical	

Chart Annotation (✓ the box required)

None	
Alarms	
Alarms & operator Messages	

Major Chart Divs	
Minor Chart Divs	

Trace Pointers (✓ the box required)

Enabled	
Disabled	

Trace Width (✓ the box required)

1	
2	
3	

Menu Enables (✓ the box required)

Message Select	
Alarm Ack	
Scale Select	
Trace Select	
Screen Interval select	
Historical Review	
Chart annotation select	

4.4 Bar (group 1)

Bar Graph View enable (✓ the box required)

Off	
Horizontal ←	
Vertical	
Horizontal & Vertical	

Bar Graph Markers (✓ the box required)

No Markers	
Max & Min	
Alarm Trips	
Max, min & Alarm trips	

Menu Enables (✓ the box required)

Message Select	
Alarm Ack	
Max/min Reset	

4.5 Digital (group 1)

Digital View Enable (✓ the box required)

On	
Off	

Totalizer display enable (✓ the box required)

On	
Off	

Menu Enables (✓ the box required)

Message Select	
Alarm Ack	
Totalizer Reset	
Totalizer Stop/Go	
Channel Select	

4.6 Batch (group 1)

Batch (✓ the box required)

Enable	
Disable	

Start/Stop Source	
--------------------------	--

Operator Login (✓ the box required)

Start	
Start & Stop	
Disabled	

Batch Number (✓ the box required)

Automatic	
Off	
Text	
Field 1	
Field 2	
Field 3	

4.7 Chart (group 2)

Chart View enable (✓ the box required)

Horizontal ->	
Horizontal <-	
Vertical	

Chart Annotation (✓ the box required)

None	
Alarms	
Alarms & operator Messages	

Major Chart Divs	
Minor Chart Divs	

Trace Pointers (✓ the box required)

Enabled	
Disabled	

Trace Width (✓ the box required)

1	
2	
3	

Menu Enables (✓ the box required)

Message Select	
Alarm Ack	
Scale Select	
Trace Select	
Screen Interval select	
Historical Review	
Chart annotation select	

4.8 Bar (group 2)

Bar Graph View enable (✓ the box required)

Off	
Horizontal <–	
Vertical	
Horizontal & Vertical	

Bar Graph Markers (✓ the box required)

No Markers	
Max & Min	
Alarm Trips	
Max, min & Alarm trips	

Menu Enables (✓ the box required)

Message Select	
Alarm Ack	
Max/min Reset	

4.9 Digital (group 2)

Digital View Enable (✓ the box required)

On	
Off	

Totalizer display enable (✓ the box required)

On	
Off	

Menu Enables (✓ the box required)

Message Select	
Alarm Ack	
Totalizer Reset	
Totalizer Stop/Go	
Channel Select	

4.10 Batch (group 2)

Batch (✓ the box required)

Enable	
Disable	

Start/Stop Source

--	--

Operator Login (✓ the box required)

Start	
Start & Stop	
Disabled	

Batch Number (✓ the box required)

Automatic	
Off	
Text	
Field 1	
Field 2	
Field 3	

5 Channel configuration

Referring to Section 4.6 of the User Guide (IM/SM1000), enter the settings required for each of the parameters.

5.1 Process group 1

5.1.1 Channel 1.1

Source ID (enter the input source required)

Input Type (✓ the input type required)

Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	
Resistance			

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)

Long Tag (enter the tag required – 20 characters max.)

Filter Time Constant (enter the value required)

Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])

Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)

Alarm A Trip (enter the trip point value required)

Alarm A Hysteresis (enter the hysteresis value required)

Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)

Alarm A Delay Time (delayed alarms only)
(enter the delay value required)

Alarm A Deviation (deviation alarms only)
(enter the deviation value required)

Alarm A Period (deviation alarms only)
(enter the time period required)

Alarm A Enable Source
(enter a source to enable/disable the alarm)

Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.1.2 Channel 1.2

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source

(enter a source to enable/disable the alarm)

Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.1.3 Channel 1.3

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.1.4 Channel 1.4

Source ID (enter the input source required)

--

Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)

--

Long Tag (enter the tag required – 20 characters max.)

--

Filter Time Constant (enter the value required)

--

Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])

--

Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)

--

Alarm A Trip (enter the trip point value required)

--

Alarm A Hysteresis (enter the hysteresis value required)

--

Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)

--

Alarm A Delay Time (delayed alarms only)
(enter the delay value required)

--

Alarm A Deviation (deviation alarms only)
(enter the deviation value required)

--

Alarm A Period (deviation alarms only)
(enter the time period required)

--

Alarm A Enable Source
(enter a source to enable/disable the alarm)

--

Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.1.5 Channel 1.5

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.1.6 Channel 1.6

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.2 Process group 2

5.2.1 Channel 2.1

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.2.2 Channel 2.2

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.2.3 Channel 2.3

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.2.4 Channel 2.4

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.2.5 Channel 2.5

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

5.2.6 Channel 2.6

Source ID (enter the input source required)
Input Type (✓ the input type required)

Off		Resistance	
Millivolts		Resistance Thermometer	
Milliamps		Thermocouple	
Volts		Volt-free Digital Input	

Electrical Range

Low	
High	

Linearizer (✓ the box required)

None	
Type B	
Type E	
Type J	
Type K	
Type L	
Type R	
Type S	
Type T	
PT100	
Square Root	
Root 3/2	
Root 5/2	
Custom Linearizer 1	
Custom Linearizer 2	

Engineering Range and Units (enter the values required)

High	
Low	
Units	

Short Tag (enter the tag required – 8 characters max.)
Long Tag (enter the tag required – 20 characters max.)
Filter Time Constant (enter the value required)
Fault Detect Level (enter the tolerance level required [between 0 and 100% of the engineering range])
Broken Sensor Direction (✓ the drive direction required)

None	
Upscale	
Downscale	

Alarm A Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm A Tag (enter the tag required – 20 characters max.)
Alarm A Trip (enter the trip point value required)
Alarm A Hysteresis (enter the hysteresis value required)
Alarm A Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm A Delay Time (delayed alarms only)
(enter the delay value required)
Alarm A Deviation (deviation alarms only)
(enter the deviation value required)
Alarm A Period (deviation alarms only)
(enter the time period required)
Alarm A Enable Source
(enter a source to enable/disable the alarm)
Alarm A Log Enable (✓ the setting required)

On	
Off	

Alarm A Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Alarm B Type (✓ the alarm type required)

Off		High Annunciate	
High Process		Low Annunciate	
Low Process		Fast Rate	
High Latch		Slow Rate	
Low Latch		Delayed High Process	
		Delayed Low Process	

Alarm B Tag (enter the tag required – 20 characters max.)
Alarm B Trip (enter the trip point value required)
Alarm B Hysteresis (enter the hysteresis value required)
Alarm B Time Hysteresis (process and latch alarms only)
(enter the time hysteresis value required)
Alarm B Delay Time (delayed alarms only)
(enter the delay value required)
Alarm B Deviation (deviation alarms only)
(enter the deviation value required)
Alarm B Period (deviation alarms only)
(enter the time period required)
Alarm B Enable Source

(enter a source to enable/disable the alarm)

Alarm B Log Enable (✓ the setting required)

On	
Off	

Alarm B Alarm Group

(✓ the group or groups to which to assign the alarm)

Group 1		Group 7	
Group 2		Group 8	
Group 3		Group 9	
Group 4		Group 10	
Group 5		Group 11	
Group 6		Group 12	

Totalizer Enable (only if totalizer option enabled)
(✓ the setting required)

Off	
Count Up	
Count Down	

Totalizer Wrap (✓ the setting required)

On	
Off	

Totalizer Tag (enter the tag required – 20 characters max.)
Totalizer Units (enter the units required)
Totalizer Stop/Go Recovery (✓ the action required)

Last	
Stop	
Go	

Totalizer Stop/Go Source (enter the source required)
Totalizer Count Range (enter the values required)

Preset Count	
Predetermined Count	
Intermediate Count	

Totalizer Reset Source (enter the source required)
Totalizer Log Update Time (enter the time required)
Totalizer Log Update Source (enter the source required)
Totalizer Count Rate (enter the count rate value required)
Totalizer Cut Off (enter the cut off value required)

6 Functions

6.1 Custom linearizer 1

Break points

(If % known please complete if not completed by factory)

Number	Eng Range	%	Elect Range	%
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

6.2 Custom linearizer 2

Break points

(If % known please complete if not completed by factory)

Number	Eng Range	%	Elect Range	%
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Real Time Alarm 1

Monday (✓)	
Tuesday (✓)	
Wednesday (✓)	
Thursday (✓)	
Friday (✓)	
Saturday (✓)	
Sunday (✓)	
1st of Month (✓)	

On Time	
Duration	
Log Enable	

Real Time Alarm 2

Monday (✓)	
Tuesday (✓)	
Wednesday (✓)	
Thursday (✓)	
Friday (✓)	
Saturday (✓)	
Sunday (✓)	
1st of Month (✓)	

On Time	
Duration	
Log Enable	

Real Time Alarm 3

Monday (✓)	
Tuesday (✓)	
Wednesday (✓)	
Thursday (✓)	
Friday (✓)	
Saturday (✓)	
Sunday (✓)	
1st of Month (✓)	

On Time	
Duration	
Log Enable	

Real Time Alarm 4

Monday (✓)	
Tuesday (✓)	
Wednesday (✓)	
Thursday (✓)	
Friday (✓)	
Saturday (✓)	
Sunday (✓)	
1st of Month (✓)	

On Time	
Duration	
Log Enable	

7 Relay module configuration

Referring to Section 4.8.2 of the User Guide (IM/SM1000), enter the settings required for each of the outputs.

Relay 1 Source (enter the source required)

--	--	--	--

Relay 1 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Relay 2 Source (enter the source required)

--	--	--	--

Relay 2 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Relay 3 Source (enter the source required)

--	--	--	--

Relay 3 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Relay 4 Source (enter the source required)

--	--	--	--

Relay 4 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Relay 5 Source (enter the source required)

--	--	--	--

Relay 5 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Relay 6 Source (enter the source required)

--	--	--	--

Relay 6 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

8 Ethernet module configuration

Referring to Section 3.1 of the User Guide Supplement – Ethernet Communications Option (IM/SMENET), enter the settings required for each of the parameters.

IP Address (enter the address required)

--	--	--	--

Subnet Mask (enter the subnet mask required)

--	--	--	--

Default Gateway (enter the default gateway required)

--	--	--	--

FTP User 1 (enter the settings required)

Name			
------	--	--	--

Password			
----------	--	--	--

Access Level (✓ the setting required)

	Full		Read Only	
--	------	--	-----------	--

Remote Operation (✓ the setting required)

	None		Operator		Configuration	
--	------	--	----------	--	---------------	--

FTP User 2 (enter the settings required)

Name			
------	--	--	--

Password			
----------	--	--	--

Access Level (✓ the setting required)

	Full		Read Only	
--	------	--	-----------	--

Remote Operation (✓ the setting required)

	None		Operator		Configuration	
--	------	--	----------	--	---------------	--

FTP User 3 (enter the settings required)

Name			
------	--	--	--

Password			
----------	--	--	--

Access Level (✓ the setting required)

	Full		Read Only	
--	------	--	-----------	--

Remote Operation (✓ the setting required)

	None		Operator		Configuration	
--	------	--	----------	--	---------------	--

FTP User 4 (enter the settings required)

Name			
------	--	--	--

Password			
----------	--	--	--

Access Level (✓ the setting required)

	Full		Read Only	
--	------	--	-----------	--

Remote Operation (✓ the setting required)

	None		Operator		Configuration	
--	------	--	----------	--	---------------	--

8.1 e-mail configuration

Referring to Section 3.5 of the User Guide Supplement – Ethernet Communications Option (IM/SMENET), enter the settings required for each of the parameters.

8.1.1 e-mail 1

SMTP Server IP Address (enter the address required)

--

Recipients (enter the addresses of the email recipients)

Recipient 1	
Recipient 2	
Recipient 3	

Options Enabled (✓ the option(s) required)

Channels Report	
Totalizers Report	
External Media Report	
Report in ALL emails	
Trigger 6 Inverted	
Trigger 7 Inverted	
Trigger 8 Inverted	
Trigger 9 Inverted	
Trigger 10 Inverted	

Event Triggers

(enter up to 10 event source types to generate an email)

Trigger 1	
Trigger 2	
Trigger 3	
Trigger 4	
Trigger 5	
Trigger 6	
Trigger 7	
Trigger 8	
Trigger 9	
Trigger 10	

8.1.2 e-mail 2

SMTP Server IP Address (enter the address required)

--

Recipients (enter the addresses of the email recipients)

Recipient 1	
Recipient 2	
Recipient 3	

Options Enabled (✓ the option(s) required)

Channels Report	
Totalizers Report	
External Media Report	
Report in ALL emails	
Trigger 6 Inverted	
Trigger 7 Inverted	
Trigger 8 Inverted	
Trigger 9 Inverted	
Trigger 10 Inverted	

Event Triggers

(enter up to 10 event source types to generate an email)

Trigger 1	
Trigger 2	
Trigger 3	
Trigger 4	
Trigger 5	
Trigger 6	
Trigger 7	
Trigger 8	
Trigger 9	
Trigger 10	

9 RS485 (Modbus™) tab

Referring to Section 4.8.4 of the User Guide (IM/SM1000), enter the settings required for each of the parameters.

Protocol (✓ the protocol required)

Modbus	
Modbus Master	

Type (✓ the type required)

Four Wire	
Two Wire	

Baud Rate (✓ the baud rate required)

1200		19200	
2400		38400	
4800		115200	
9600			

Parity (✓ the parity required)

None	
Odd	
Even	

Address – Modbus protocol only

(enter the address required between 1 and 247)

Poll Rate (ms) – Modbus Master protocol only

(enter the poll rate required between 0 and 3600000)

Poll Fail Limit – Modbus Master protocol only

(enter the poll fail limit required between 1 and 4)

Response Timeout (ms) – Modbus Master protocol only

(enter the timeout required between 0 and 60000)

9.1 Comms. analog input tab

Note. These parameters are configured only if the RS485 **Protocol** parameter is to be set to *Modbus Master*.

Referring to Section 4.8.5 of the User Guide (IM/SM1000), enter the settings required for each of the parameters.

Comms.. Analog I/P (✓ the input required)

Comms.. AIN 1		Comms.. AIN 13	
Comms.. AIN 2		Comms.. AIN 14	
Comms. AIN 3		Comms. AIN 15	
Comms. AIN 4		Comms. AIN 16	
Comms. AIN 5		Comms. AIN 17	
Comms. AIN 6		Comms. AIN 18	
Comms. AIN 7		Comms. AIN 19	
Comms. AIN 8		Comms. AIN 20	
Comms. AIN 9		Comms. AIN 21	
Comms. AIN 10		Comms. AIN 22	
Comms. AIN 11		Comms. AIN 23	
Comms. AIN 12		Comms. AIN 24	

RTU-Address

(enter the RTU address required between 1 and 247)

Register Number

(enter the register number required between 0 and 65535)

Type (✓ the type required)

Input Register		Holding Register	
----------------	--	------------------	--

Format (✓ the format required)

Sint16		Reverse IEEE	
Sint32		Sint16 X 10	
Reverse Sint32		Sint16 X 100	
IEEE		Sint16 X 1000	

9.2 Comms. digital input tab

Note. These parameters are configured only if the RS485 **Protocol** parameter is to be set to *Modbus Master*.

Referring to Section 4.8.6 of the User Guide (IM/SM1000), enter the settings required for each of the parameters.

Comms. Digital I/P (✓ the input required)

Comms. Dig I/P 1		Comms. Dig I/P 14	
Comms. Dig I/P 2		Comms. Dig I/P 15	
Comms. Dig I/P 3		Comms. Dig I/P 16	
Comms. Dig I/P 4		Comms. Dig I/P 17	
Comms. Dig I/P 5		Comms. Dig I/P 18	
Comms. Dig I/P 6		Comms. Dig I/P 14	
Comms. Dig I/P 7		Comms. Dig I/P 19	
Comms. Dig I/P 8		Comms. Dig I/P 20	
Comms. Dig I/P 9		Comms. Dig I/P 21	
Comms. Dig I/P 10		Comms. Dig I/P 22	
Comms. Dig I/P 11		Comms. Dig I/P 23	
Comms. Dig I/P 12		Comms. Dig I/P 24	

RTU-Address

(enter the RTU address required between 1 and 247)

Register Number

(enter the register number required between 0 and 65535)

Type (✓ the type required)

Input Status		Coil Status	
--------------	--	-------------	--

10 Hybrid module configuration

Referring to Section 4.8.7 of the User Guide (IM/SM1000), enter the settings required for each of the outputs.

Digital Output 1 Source (enter the source required)

--	--	--	--

Digital Output 1 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Digital Output 2 Source (enter the source required)

--	--	--	--

Digital Output 2 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Digital Output 3 Source (enter the source required)

--	--	--	--

Digital Output 3 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Digital Output 4 Source (enter the source required)

--	--	--	--

Digital Output 4 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Digital Output 5 Source (enter the source required)

--	--	--	--

Digital Output 5 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Digital Output 6 Source (enter the source required)

--	--	--	--

Digital Output 6 Polarity (✓ the polarity required)

Positive		Negative	
----------	--	----------	--

Analog Output 1 Source (enter the source required)

--	--	--	--

Analog Output 1 Range (enter the values required)

Engineering Low		Electrical Low	
Engineering High		Electrical High	

Analog Output 2 Source (enter the source required)

--	--	--	--

Analog Output 2 Range (enter the values required)

Engineering Low		Electrical Low	
Engineering High		Electrical High	

11 Logic equations

Logic Equation 1 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 2 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 3 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 4 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 7 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 5 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 8 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 6 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 9 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 10 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 11 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

Logic Equation 12 (x if not inverted*)

Operand 1		Invert*
Operator 1		
Operand 2		Invert*
Operator 2		
Operand 3		Invert*
Operator 3		
Operand 4		Invert*
Operator 4		
Operand 5		Invert*
Operator 5		
Operand 6		Invert*
Operator 6	End	

12 Math equations

12.1 Math block 1

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.1.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.1.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.1.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.1.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.2 Math block 2

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.2.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.2.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.2.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.2.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.3 Math block 3

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.3.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.3.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.3.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.3.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.4 Math block 4

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.4.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.4.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.4.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.4.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.5 Math block 5

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.5.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.5.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.5.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.5.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.6 Math block 6

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.6.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.6.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.6.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.6.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.7 Math block 7

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.7.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.7.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.7.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.7.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.8 Math block 8

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.8.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.8.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.8.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.8.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.9 Math block 9

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.9.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.9.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.9.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.9.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.10 Math block 10

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.10.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.10.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.10.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.10.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.11 Math block 11

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.11.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.11.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.11.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.11.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

12.12 Math block 12

Math Block Type (✓ the box required)

Standard	
Trigonometric	
Statistical	
Logarithmic	
Special	
Switch	
Power	

Standard Math Block set up (note equation here)

--

Trigonometric

Cos (variable X)	
Sin (variable X)	
Tan (Variable X)	

12.12.1 Statistical functions

Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Rolling Average

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Standard Deviation

Source to average (X)	
Number of Samples (n)	
Sample rate (t)	

Logarithmic Functions

Log (Variable X)	
Natural Log (Variable X)	
Exponential (variable X)	

12.12.2 Special functions

Relative humidity function

Wet Bulb source	
Dry Bulb Source	

F0 calculation

Measured temp (X)	
Target Temp (y)	
Z factor (z)	

12.12.3 Switch functions

High Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Median Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Low Selector

Source 1 (x)	
Source 2 (y)	
Source 3 (z)	

Multiplexer

Source 1 (x)	
Digital Source	
Source 2 (y)	

12.12.4 Power functions

Power

Variable (x)	
Power (a)	

Square Root

Variable (x)	
--------------	--

Notes

Contact us

ABB Limited

Process Automation

Howard Road
St. Neots
Cambridgeshire PE19 8EU
UK

Tel: +44 (0)1480 475321

Fax: +44 (0)1480 217948

ABB Inc.

Process Automation

125 E. County Line Road
Warminster
PA 18974
USA

Tel: +1 215 674 6000

Fax: +1 215 674 7183

www.abb.com

Note

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2013 ABB

All rights reserved

INF08/034 Rev. C 12.2013