

# Table of Contents

## **Overview**

Introduction .....	1-1
289H LSS Overview .....	1-2
Scanning & Alerting Functions .....	1-3
Communication Options.....	1-4
Pair Diagnostic Functions .....	1-4
Tone Generation.....	1-4
289H-M Monitor Description .....	1-5
Controller Card .....	1-5
Utility Card .....	1-8
Relay Card .....	1-9
Relay Card Connections .....	1-11
Connector Blocks .....	1-12
Subscriber Block .....	1-12
Subscriber Block Auxiliary Connectors .....	1-14
Dedicated Block .....	1-14
289H-M Cables .....	1-15

## **Site Planning**

Introduction .....	2-1
Before Ordering .....	2-1
Before Assembly .....	2-2
Installation Planning Form .....	2-4

## **Monitor Installation**

Introduction .....	3-1
Unpacking Equipment .....	3-1
Installing the 289H-M LSS Monitor .....	3-2
Power Supply Hookup .....	3-4
Connector Block Installation .....	3-6

## **Connector Block Wiring**

Introduction .....	4-1
Access Number Description .....	4-1
Subscriber Block Description.....	4-1
Wiring and Cabling Requirements .....	4-2
Using the Auxiliary Connectors .....	4-5
Wiring Procedures .....	4-5
Wiring Dedicated Devices to Subscriber Blocks .....	4-7
Connecting 289H-M LSS Monitor to a Sparton Dedicated Block .....	4-7
Setting Up the SPDR Relay Card .....	4-7

Using Sparton Adapter Cabling.....	4-9
Dedicated Block Description .....	4-10
Wiring and Cabling Requirements .....	4-10
Wiring Procedures .....	4-12
System Calibration .....	4-13

## ***Start Up & Test Procedures***

Introduction .....	5-1
289H-M Start Up .....	5-1
System Check Procedures.....	5-1
Card Testing Procedures .....	5-3
Testing and Replacing a Blown Fuse.....	5-5
Setting Up the 289H LAN Controller Card .....	5-7
Configuring the LAN Controller .....	5-8
PressureMAP Data Entry Requirements.....	5-12
Troubleshooting.....	5-12
Network Information for LAN Controller Operation .....	5-13
Network Configuration Worksheet .....	5-14

## ***Appendix 1–Troubleshooting***

Introduction .....	A1-1
Troubleshooting .....	A1-1
Possible Error Conditions.....	A2-1
Diagnostic Testing .....	A1-5
289H LSS Error Messages .....	A1-10

## ***Appendix 2–Reading Messages***

Introduction.....	A2-1
Verbose Readings for Resistive and Current Loop Devices .....	A2-1
Status Column Explanation .....	A2-2

## ***Appendix 3–Technical Notes***

Introduction .....	A3-1
Understanding How Contactors Work with PressureMAP and the 289H LSS.....	A3-1
Contactor Wiring and PressureMAP.....	A3-1
Binary Contactors .....	A3-3
Additional PressureMAP Contactor Readings .....	A3-4
289H LSS Scan and Alert Cycles .....	A3-4

## ***Appendix 4–289H Alert Modem Status Codes***

Introduction.....	A4-1
Status Codes for the 289H Alert Modem .....	A4-1
289H Alert Modem Errors .....	A4-2
289H Alert Protocol Errors .....	A4-3
State of Communication Protocol Values .....	A4-4
STATE Descriptions for PressureMAP .....	A4-5
STATE Descriptions for the 289H-M LSS .....	A4-5

## **Appendix 5–289H Diagnostics**

Introduction.....	A5-1
Functional Overview.....	A5-1
Types of Calls Placed Through PressureMAP .....	A5-2
Line Testing .....	A5-2
Procedures for the 289H LSS Diagnostics Test.....	A5-3
The 289H LSS Diagnostics Tests.....	A5-5
System Configuration .....	A5-6
Calibration Test.....	A5-7
Realtime Reading Test .....	A5-8
Resistive Device Output.....	A5-10
Current Loop Device Output.....	A5-10
Specific Device Information .....	A5-11
Capacitance Test.....	A5-12
Ping Relays Test .....	A5-13
Cold Reset.....	A5-14
Leakage Test .....	A5-14
AC Test .....	A5-15
DC Test .....	A5-16
Dialout Phone Number Information.....	A5-17
Device Alert Information .....	A5-19
Tone Settings .....	A5-20
Get Tone Settings.....	A5-21
Set Tone Default .....	A5-21
Route Tone.....	A5-22
Transducer Conversion Charts .....	A5-24

## **Appendix 6—Equipment Ordering Information**

Introduction .....	A6-1
Product Descriptions .....	A6-1
Office Monitors.....	A6-2
Monitor Specifications	
289H LSS (Full Size Chassis).....	A6-6
289H-M LSS (Mini Chassis).....	A6-7
uM260 Micro Monitor .....	A6-9
Ordering Options / Card Compatibility	
289H LSS.....	A6-10
289H-M LSS .....	A6-11
289H LSS Components and Connector Blocks .....	A6-12
289H LSS Connector Cables .....	A6-20
Miscellaneous 289H LSS Accessories.....	A6-23

<b>Index.....</b>	I-1
-------------------	-----

