

# GSE Model 350/355

## DIGITAL WEIGH INDICATOR



## Technical Reference Manual

Flash Version 3.0

Your Distributor: TENSION MEASUREMENT, INC.  
TEL: (303) 465-1011  
FAX: (303) 466-9761  
E-MAIL: TENSION@TENSION-MEASUREMENT.COM



# Table of Contents

|  |           |
|--|-----------|
| <b>CHAPTER 1: INTRODUCTION.....</b>                        | <b>1</b>  |
| STANDARD FEATURES.....                                     | 1         |
| SPECIFICATIONS.....  | 1         |
| DISPLAY.....   | 3         |
| <i>LED Display</i> .....                                   | 3         |
| <i>LCD Display</i> .....                                   | 4         |
| <i>Annunciators</i> .....                                  | 4         |
| 350 KEYPAD.....  | 4         |
| 355 KEYPAD.....  | 6         |
| <i>Weigh Mode Functions</i> .....                          | 7         |
| <i>Entering a Tare Value (Model 350)</i> .....             | 8         |
| <i>Entering a Tare Value (Model 355)</i> .....             | 8         |
| <b>CHAPTER 2: INDICATOR INSTALLATION.....</b>              | <b>9</b>  |
| MOUNTING.....  | 9         |
| <i>Desktop Mounting</i> .....                              | 9         |
| <i>Panel Mounting (Die Cast Only)</i> .....                | 9         |
| <i>Permanent Mounting</i> .....                            | 10        |
| <i>Outline Drawings</i> .....                              | 10        |
| WIRING.....  | 12        |
| <i>Stainless Steel Model 350/355</i> .....                 | 12        |
| <i>Die Cast Model 350</i> .....                            | 12        |
| <i>Load Cell Connections</i> .....                         | 12        |
| <i>Serial Port Connections</i> .....                       | 13        |
| <i>Remote Key Connection</i> .....                         | 14        |
| <i>Remote Display Connections</i> .....                    | 15        |
| <i>Power Connection</i> .....                              | 15        |
| <b>CHAPTER 3: OPTION INSTALLATION.....</b>                 | <b>17</b> |
| MODEL 350/355 OPTIONS.....                                 | 17        |
| <i>Swivel Bracket</i> .....                                | 17        |
| <i>Panel Mount Kit</i> .....                               | 18        |
| ANALOG CARD CONNECTIONS.....                               | 19        |
| <i>Analog Connections</i> .....                            | 22        |
| <i>Analog Board Diagnostic and Test Procedures</i> .....   | 23        |
| SETPOINT CARD CONNECTIONS.....                             | 26        |
| <i>Setpoint Connections</i> .....                          | 28        |
| <i>Setpoint Board Diagnostic and Test Procedures</i> ..... | 29        |
| RS-485 NETWORKING.....                                     | 30        |
| <i>Network Connections</i> .....                           | 31        |
| 20 MA CURRENT LOOP OPTION.....                             | 33        |
| <i>Bi-directional</i> .....                                | 33        |
| <i>Baud</i> .....  | 33        |

|  |           |
|--|-----------|
| <i>Active/Passive</i> .....  | 33        |
| <i>Isolation</i> .....   | 33        |
| <i>Max Voltage</i> .....   | 34        |
| <i>Connections</i> .....   | 34        |
| <i>Cable</i> .....   | 34        |
| <i>Connected Devices</i> .....                                     | 34        |
| BATTERY POWER SUPPLY .....   | 35        |
| <i>Mounting</i> .....  | 35        |
| <i>Connection</i> .....  | 36        |
| <i>ON/OFF Switch</i> .....   | 37        |
| <i>Battery Charging</i> .....                                      | 37        |
| <i>Temperature Sensing</i> .....                                   | 38        |
| <i>Low Battery Indication</i> .....                                | 38        |
| <i>Dead Battery Shutdown</i> .....                                 | 38        |
| <i>Automatic Shutdown</i> .....                                    | 38        |
| INTERNATIONAL TRANSFORMER - IEC .....                              | 39        |
| <i>Specifications</i> .....  | 39        |
| <i>Transformers Available</i> .....                                | 39        |
| <i>IEC line cords Available</i> .....                              | 39        |
| FIBER-OPTIC INTERFACE .....  | 40        |
| <b>CHAPTER 4: CONFIGURATION</b> .....                              | <b>43</b> |
| ENTERING THE SETUP MODE (MODEL 350) .....                          | 43        |
| ENTERING THE SETUP MODE (MODEL 355) .....                          | 44        |
| SELECTING A PARAMETER .....  | 44        |
| CHANGING A PARAMETER VALUE .....                                   | 46        |
| <i>Selection Parameters</i> .....                                  | 46        |
| <i>Key-In Parameters</i> .....                                     | 46        |
| SAVING PARAMETERS .....  | 47        |
| FACTORY DEFAULT .....  | 49        |
| LIST OF PARAMETERS .....   | 50        |
| <i>Parameter Map Details</i> .....                                 | 52        |
| PRESET TRANSMIT SELECTIONS .....                                   | 59        |
| CUSTOM TRANSMIT .....  | 61        |
| <i>Elements of a Custom Transmit</i> .....                         | 61        |
| <i>Writing a custom transmit ASCII text file</i> .....             | 61        |
| <i>Accessing Setup and Clearing Existing Custom Transmit</i> ..... | 61        |
| <i>Entering ASCII Text</i> .....                                   | 62        |
| <i>Entering ASCII Control Codes</i> .....                          | 62        |
| <i>Parameter Selection Numbers</i> .....                           | 64        |
| <i>Exiting Setup Mode and Saving Changes</i> .....                 | 65        |
| PARTS COUNTING .....   | 66        |
| ANALOG OUTPUT SETUP .....  | 67        |
| ANALOG OUTPUT CALIBRATION .....                                    | 68        |
| <i>Entering Analog Calibration Values</i> .....                    | 68        |
| <i>Analog Output Example</i> .....                                 | 69        |
| SETPOINT SETUP .....   | 70        |

|   |    |
|---|----|
| <i>Activation Methods (General)</i> .....                                     | 70 |
| <i>Pre-acts (General)</i> .....   | 71 |
| <i>Learn Feature (General)</i> .....  | 71 |
| <i>Pause Feature (General)</i> .....  | 71 |
| <i>Changing Targets from the Weigh Mode (General)</i> .....                   | 72 |
| <i>Example (General)</i> .....  | 72 |
| <i>Bargraph (General)</i> .....   | 73 |
| PERCENTAGE CHECK-WEIGHING .....   | 75 |
| <i>Setpoint Activation (ChecP)</i> .....                                      | 75 |
| <i>Changing Targets from the Weigh Mode (Percentage Check-Weighing)</i> ..... | 75 |
| <i>Example (ChecP)</i> .....  | 76 |
| FILL .....  | 77 |
| <i>Activation Method (Fill)</i> .....   | 77 |
| <i>Pre-acts (Fill)</i> .....  | 77 |
| <i>Learn Feature (Fill)</i> .....   | 78 |
| <i>Pause Feature (Fill)</i> .....   | 78 |
| <i>Changing Targets from the Weigh Mode (Fill)</i> .....                      | 78 |
| <i>Example (Fill)</i> .....   | 78 |
| BATCH .....   | 79 |
| <i>Activation Method (Batch)</i> .....  | 79 |
| <i>Pre-acts (Batch)</i> .....   | 79 |
| <i>Learn Feature (Batch)</i> .....  | 79 |
| <i>Pause Feature (Batch)</i> .....  | 80 |
| <i>Changing Targets from the Weigh Mode (Batch)</i> .....                     | 80 |
| <i>Example (Batch)</i> .....  | 80 |
| DISCHARGE .....   | 81 |
| <i>Activation Method (Discharge)</i> .....                                    | 81 |
| <i>Pre-acts (Discharge)</i> .....   | 81 |
| <i>Learn Feature (Discharge)</i> .....  | 82 |
| <i>Pause Feature (Discharge)</i> .....  | 82 |
| <i>Example (Discharge)</i> .....  | 82 |
| BOTH .....  | 83 |
| <i>Activation Method (Both)</i> .....   | 83 |
| <i>Pre-acts (Both)</i> .....  | 83 |
| <i>Learn Feature (Both)</i> .....   | 83 |
| <i>Pause Feature (Both)</i> .....   | 84 |
| <i>Target Changes from the Weigh Mode (Both)</i> .....                        | 84 |
| <i>Example (Both)</i> .....   | 84 |
| ABSOLUTE CHECK-WEIGHING .....   | 85 |
| <i>Setpoint Activation (ChecA)</i> .....                                      | 85 |
| <i>Changing Targets from the Weigh Mode (ChecA)</i> .....                     | 85 |
| <i>Example (ChecA)</i> .....  | 86 |
| INDEPENDENT SETPOINT OPERATION.....   | 87 |
| <i>Setpoint Activation (Independent)</i> .....                                | 87 |
| <i>Changing Targets from the Weigh Mode (Independent)</i> .....               | 88 |
| <i>Example (Independent)</i> .....  | 88 |

|   |            |
|---|------------|
| TARGET DEVIATION CHECK-WEIGHING .....                           | 89         |
| <i>Setpoint Activation (ChecB)</i> .....                        | 89         |
| <i>Changing Targets from the Weigh Mode (ChecB)</i> .....       | 89         |
| <i>Example (ChecB)</i> .....                                    | 90         |
| BATCH 2 .....   | 92         |
| <i>Activation Method (Batch2)</i> .....                         | 92         |
| <i>Pause Feature (Batch2)</i> .....                             | 92         |
| <i>Changing Targets from the Weigh Mode (Batch2)</i> .....      | 92         |
| <i>Example (Batch2)</i> .....                                   | 93         |
| SETPOINT ERROR CODES.....                                       | 93         |
| REMOTE KEY SETUP .....  | 94         |
| REMOTE SERIAL OPERATION .....                                   | 94         |
| <i>Display Capture Utility</i> .....                            | 95         |
| TIME AND DATE SETUP (MODEL 350).....                            | 96         |
| TIME AND DATE SETUP (MODEL 355).....                            | 97         |
| RS-485 MULTI-DROP NETWORK SETUP AND OPERATION .....             | 98         |
| <i>Setup</i> .....  | 98         |
| <i>Operation</i> .....  | 98         |
| <i>Network Protocol</i> .....                                   | 98         |
| UPGRADE INDICATOR FIRMWARE .....                                | 99         |
| <i>Prepare for upgrade</i> .....                                | 99         |
| <i>Load Flash File</i> .....                                    | 99         |
| REMOTE DISPLAY CONFIGURATION.....                               | 100        |
| <i>Master to Remote (Slave) Configuration</i> .....             | 100        |
| <i>Setup Master Indicator</i> .....                             | 100        |
| <i>Setup Remote Indicator</i> .....                             | 101        |
| CONTROL (HAZARDOUS AREA) TO HUB (SAFE AREA) CONFIGURATION ..... | 104        |
| 300 SERIES COMMAND CODES.....                                   | 105        |
| ID NUMBER ENTRY.....  | 107        |
| <b>CHAPTER 5: CALIBRATION .....</b>                             | <b>109</b> |
| SETUP MODE CALIBRATION.....                                     | 109        |
| FAST CALIBRATION.....   | 109        |
| PERFORMING CALIBRATION.....                                     | 110        |
| ESTABLISHING ZERO.....  | 110        |
| <i>First Zero</i> .....   | 110        |
| <i>Last Zero</i> .....  | 112        |
| <i>False Zero</i> .....   | 114        |
| <i>Only Zero</i> .....  | 116        |
| <i>Reset Calibration</i> .....                                  | 117        |
| MULTI-POINT LINEARIZATION.....                                  | 120        |
| <i>Examining Calibration Results</i> .....                      | 121        |
| ESTABLISHING A SPAN.....  | 121        |
| EXITING CALIBRATION .....                                       | 122        |
| <b>CHAPTER 6: LEGAL FOR TRADE .....</b>                         | <b>123</b> |
| NTEP REQUIREMENTS.....  | 123        |

|   |            |
|---|------------|
| NTEP PANEL MOUNT REQUIREMENTS .....     | 123        |
| OMIL REQUIREMENTS.....                  | 124        |
| OTHER REQUIREMENTS.....                 | 124        |
| SEALING AND AUDIT TRAILS .....          | 125        |
| <i>Physical Seal</i> .....              | 125        |
| <i>Audit Trails</i> .....               | 126        |
| <b>CHAPTER 7: TROUBLESHOOTING .....</b> | <b>129</b> |
| ERROR MESSAGES .....                    | 129        |
| <i>Operational Errors</i> .....         | 129        |
| <i>Setup Mode Errors</i> .....          | 129        |
| <i>Hardware Errors</i> .....            | 130        |
| <i>Calibration Errors</i> .....         | 130        |
| <i>Communication Errors</i> .....       | 130        |
| <i>Miscellaneous Errors</i> .....       | 131        |
| VIEWING SETUP .....                     | 131        |
| INFORMATION MODE PARAMETERS .....       | 132        |
| A/D CALIBRATION PROCEDURE.....          | 134        |

This is a “Table of Contents preview” for quality assurance

The full manual can be purchased from our store:

<https://the-checkout-tech.com/manuals/GSE/350> and [355 Technical Reference flash 3.0](https://the-checkout-tech.com/manuals/GSE/355)

And our free Online Keysheet maker:

<https://the-checkout-tech.com/Cash-Register-Keysheet-Creator/>

[HTTPS://THE-CHECKOUT-TECH.COM](https://THE-CHECKOUT-TECH.COM)