



PDN SERVICE MANUAL

(Revision 1 / 2024.02.13)

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1. Introduction

1.1. Preface

Thank you for purchasing the CAS PDN POS Interface Scale. This scale has been designed with CAS reliability under a rigid quality control process, and will provide outstanding performance for years. Please keep this manual handy for future reference.

1.2. Precautions

- Make sure that you plug your scale into the proper power outlet.
- Place the scale on a flat and stable surface.
- Plug into a power outlet 30 minutes before operations.
- Keep the scale away from strong EMI noises may cause incorrect weight readings.
- This scale must be installed in a dry, liquid free environment.
- Do not subject the scale to sudden temperature changes.
- Do not subject the platter to sudden shocks.
- If the scale is not level, adjust the 4 legs on the bottom of the scale (turn legs clockwise or counterclockwise), centering the bubble of the leveling gauge inside the indicated circle.

1.3.Specifications

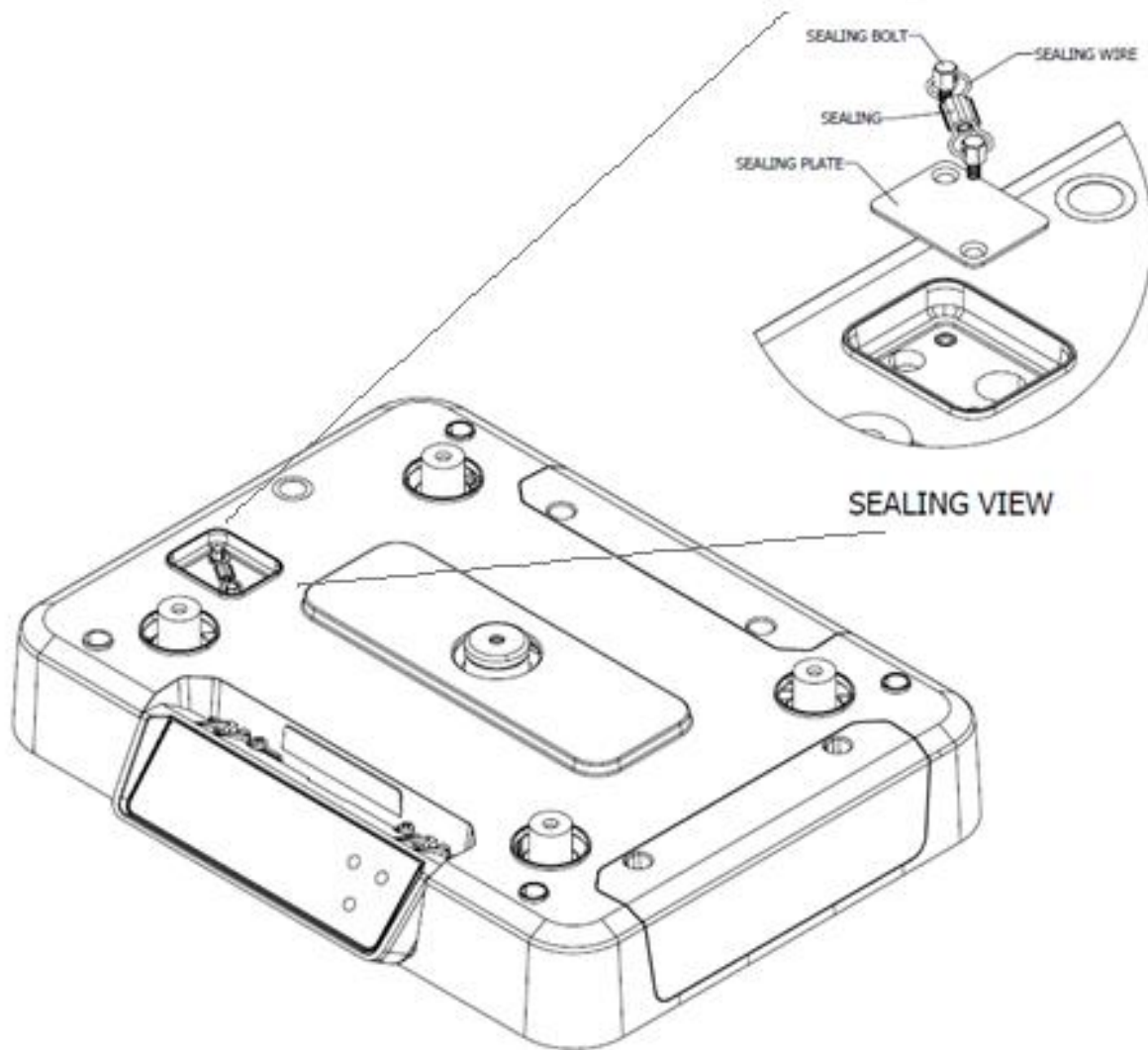
MODEL	PDN Series						
Capacity/ e (kg)	<u>Dual Interval</u> Max 3/6kg e=1/2g	<u>Single Interval</u> Max 6kg e=1g	<u>Single Interval</u> Max 12kg e=2g	<u>Dual Interval</u> Max 6/15kg e=2/5g	<u>Single Interval</u> Max 30kg e=5g	<u>Dual Interval</u> Max 15/30kg e=5/10g	<u>Dual Interval</u> Max 15/32kg e=5/10g
Internal Resolution	1/60,000	1/60,000	1/60,000	1/60,000	1/60,000	1/60,000	1/60,000
External Resolution (kg)	1/3,000	1/6,000	1/6,000	1/3,000	1/6,000	1/3,000	1/3,000 1/3,200
MAX Tare	-2.999kg	-5.999kg	-11.998kg	-5.998kg	-14.995k	-14.995k	-14.995k
Display	94 x 28 [mm] / 3.7 " x 1.1 " 6 digit LED						
Remote Display	94 x 28 [mm] / 3.7 " x 1.1 " 6 digit LED						
Symbols	STABLE, ZERO, TARE, kg						
Keys	ZERO, TARE, Function						
Functions	Weighing, Unit Conversion, ECR Protocol, Optional Bluetooth Communication						
Dimensions	384(W) x 308.4(D) x 81.8(H)[mm]						
Platter size	380(W) x 280(D)[mm]						
Weight	5.6 kg						
Power	USB 5V or Optional USB AC Adaptor						
Operating Temp	-10°C ~ +40°C / 14°F ~ 104°F						
Option	BLE Module						

1.4.Key

KEYS	FUNCTIONS
	ZERO Key - Sets the zero point. Also used as the ENTER key in Setup Mode.
	TARE Key – Input or cancels Tare weight. Also used as the ESC key in Setup Mode.
	Unit key

1.5.Sealing Method

1.5.1. The CAS PDN uses a lead/wire seal to properly seal a scale after calibration. A wire is fed through the two calibration bolts that holds the sealing plate in place over the calibration switch.



2. Calibration

2.1.General Calibration

How to enter calibration mode:

While pressing and holding the calibration switch, turn on the scale by pressing the [POWER] key. Users can move to other modes by using the [TARE] or [FUNC] keys while in calibration mode. Users can also move through sub-modes for each mode by using [ZERO] key.

Simply follow the steps below to cycle through all modes:

1. Calibration Mode: Press and hold the "Calibration Switch" while pressing the [POWER] key.
2. Change the Selection:
 - [TARE] -> Move the number of digits.
 - [FUNC] -> Change setting value.
3. ENTER a Setting:
 - [ZERO] key

MODE	Function
CAL 1	Display normalized AD
CAL 2	Display Keypad information-
CAL 3	Weight Setting Mode – Three Point Calibration “UnLoad” → [ZERO] → “MIDD” → [ZERO] after loading for 1/3 weight → “FULL” → [ZERO] after loading for Full weight → “MIDD” → [ZERO] after loading for 1/3 weight → “END”
CAL 4	Option Setting (Refer to Table 1)
CAL 5	Display filtered Raw AD
CAL 6	Function Key Settings
CAL 7	% Calibration
CAL 8	Battery Calibration (Not Available in the PDN)
CAL 9	Gravity constant
CAL 10	Set calibration factor “Unit” → [MODE] → select 0, 1 (0:kg, 1: lb) → [ZERO] “CAPA” → [TARE] or [MODE] → select capacity → [ZERO] “MCAPA” → [TARE] or [MODE] → select mid-capacity → [ZERO] “W-dP” → [MODE] → Select Decimal Point → [ZERO] “ 1 d ” → [TARE] or [MODE] → Select division → [ZERO] “Dual” → [MODE] → Enable dual interval (0:disable, 1:enable) → [ZERO] “tare” → [MODE] → Enable custom tare (0:disable, 1:enable) → [ZERO]
CAL 11	Set nation(00 : OIML , 01 : NTEP , 02: KOREA) Set Initialize(00 : Parameter, 99 : AD)



2.1.2. 4 Setting

2.1.2.1. C4-1 Setting

To modify these settings, please contact the CAS Service Dept at 800.223.4227 or service@cas-usa.com

Initial Zero Range	+/- 2%	Contact Service Department 800.223.4227 www.cas-usa.com
	+/- 3%	
	+/- 10% (Default)	
	+/- 15%	
Last Digit Invalid	Disable	
	Enable	
Zero Percent	+/- 3% Key Zero Percent	
	+/- 2% Key Zero Percent	
Successive Tare	None	
	Negative Direction	
	Positive Direction	
	All Directions	
Zero Mark Type	Gross Zero Indication	
	Net Zero Indication	
	Both Zero Indication	

**2.1.2.2. C4-3 Setting**

Settings for units are shown in the table below. To modify the remaining settings, please contact the CAS Service Department at 800.223.4227 or service@cas-usa.com.

Dot Type Comma	Enable	Contact Service Department 800.223.4227 www.cas-usa.com
	Disable	
Preset Tare	Enable	
	Disable	
Backlight	Not available in the PDN	
Head Message		
Units	Ounce only	04
	Pound Only	02
	Kilogram Only	01
	Ounce and Pound	06
	Ounce and Kilogram	05
	Pound and Kilogram	03
	Ounce, Pound, and Kilogram	07 (Default)

2.1.3. Three Point Calibration Setting (C-3)

1. Press and hold the Calibration Switch while pressing the [POWER] key.
2. Press [TARE] or [UNIT] key twice until "CAL-3" is displayed.
3. Press the [ZERO] key once to display the "Zero" message.
4. Press [ZERO] key again. The PDN will display internal raw counts and then "midup" message
5. Load a middle weight (ex: 1/3 full capacity) on the platform
6. Press [ZERO] key. The PDN will show internal raw counts and and then "Full" message
7. Load a full capacity weight on the platform
8. Press the [ZERO] key. The PDN will show internal raw counts and then display "Middn"
9. Load middle weight (ex:1/3 full capacity) on the platform
10. Press the [ZERO] key. The PDN will show internal raw counts and and then display "CAL 3".
11. The Span Calibration procedure is complete. Power the scale off, then on.
12. In weigh mode, check the PDN for accuracy.
13. If the PDN is not accurate, repeat steps 1 through 12.

2.1.4. Gravity Constant Value Setting (C-9)

The current gravitational acceleration value is set at 9.7994 m/s^2 .

1. Press and hold the Calibration Switch while pressing the [POWER] key.
2. Press [TARE] to display "C-9".
3. Press [ZERO] key, and then "G-1" message and "9.7994" will be shown. The first digit, "9" will blink.
4. Input a gravitational acceleration value by using [TARE] or [FUNC] key.
5. Press [ZERO] key, and then "G-2" message blinks. "9.7994" will be shown. The first

digit, "9" will blink.

6. Input a gravitational acceleration value by using [TARE] or [FUNC] key.
7. Press [ZERO] key to save the gravitational acceleration value, and "C-9" message will be shown.

2.1.5. Calibration Factor Setting (C-10)

1. Press and hold the Calibration Switch while pressing the [POWER] key. "CAL 1" is displayed
2. Press the [TARE] key nine times until "CAL 10" is displayed.
3. Press the [ZERO] key. "UNIT" will display momentarily, and then either "0" or "1" will be displayed. "0" will blink signifying the unit is set to kg. "1" is the setting for lb. The default factory setting is "1".
4. To change the unit, press the [UNIT] key to the other setting.
5. Press the [ZERO] key. "CAPA" will display momentarily, and then the full capacity of the scale will be displayed (eg. "0030" will be a 30 lb capacity). The first digit will be a blinking "0". To remain legal for trade in the USA as per COC#21-xxx, the capacity must be the same as the specification plate on the scale. (NOTE: If the capacity displayed does not match the specification plate, contact the service department at 800.223.4227 or service@cas-usa.com)
6. Press the [ZERO] KEY. "mid" + will be displayed.

MID-UP weight settings:

- PDN-12 – "0000x" for x lbs
- PDN-30 – "00010" for 10 lbs
- PDN-60 – "00020" for 20 lbs

To change the MID-UP weight, use the [TARE] key to move the select the next digit. Use the [UNIT] key to select the desired weight. For example, changing 00020 to 00030,

press the [TARE] key three times, then the [UNIT] key once.

7. Press the [ZERO] key to save and move to the next setting. "W-dP " will display momentarily. "2" or "3" will be displayed depending on the capacity of the scale. This sets the amount of digits after the decimal. For example, "3" will display as 0.000. To change the "W-dP" setting, press the [UNIT] key to cycle through the digits.
8. Press the [ZERO] key. "1d" will be displayed momentarily.

1d settings:

- PDN-12 – 0.002
- PDN-30 – 0.005
- PDN-60 – 0.01

To remain legal for trade in the USA as per COC#21-xxx, these settings must match the specification plate on the scale.

9. Press the [ZERO] key. "dual" will be displayed momentarily, then "0" or "1"

Dual range settings - 0: disable, 1: enable. The default setting for the PDN is 0.

To change this setting, press the [UNIT] key to cycle between "0" and "1".

The PDN is a 6,000 division scale and is fully capable of a single range setting to provide the lowest possible resolution.

10. Press the [ZERO] key. "tare" will be displayed momentarily, then "0".

Tare settings – 0: disable, 1: enable.

Under most circumstances, leave this setting at "0". Tare value is normally sent from the POS/ECR.

11. Input a custom tare enable by using [MODE] key.

12. Press the [ZERO] key to save the calibration settings. "C-10" message will be displayed.
13. Press the [TARE] key four times to CAL 3. Follow the Three Point Calibration steps on page 12.

2.1.6. Displaying Real A/D Value (C-5)

Raw AD values will be displayed.

2.1.7. Percent Calibration (C-7)

1. Pressing Press and hold the Calibration Switch while pressing the [POWER] key.
2. Press the [TARE] key to display "CAL-7".
3. Press [ZERO] key and then it displays "per 05" message. Select the percent value using the [UNIT] and [TARE] keys. You can choose 10~90 percent. Last digit of percent must be 0. Although you can select any number between 0 and 99, we recommend using a value of tens (eg. 10 or 20)
4. With the platter on the scale, press the [ZERO] key. "zero" message will be displayed
5. Press the [ZERO] key. "pspan" message will be displayed
6. Load choice percentage weight of full weight on the platform
7. Press the [ZERO] key. "CAL 7" message will be displayed
8. Power down the scale, then power up. Check for accuracy.

2.1.8. Set Nation/Initialize (C-11)

OIML	00	Unit Key
		Tare Key Enabled
		Type Setting 6
NTEP	01	Unit Key
		Tare Key Disabled
		Type Setting 4
Korea	02	N/A
Initialize	99	Resets scale to factory defaults. Set up and re-calibration needs to be performed

3. Error Messages & Solution

Error Message on Display	Description	Solution
"Err 0"	"Err 0" occurs when scale is not stable.	Remove unstable facts.
"Err 1"	"Err 1" occurs when a current zero point has shifted from the last span calibration.	Please call your CAS dealer.
"Err 3"	"Err 3" is an overload error.	Please remove the weight.