PCE Americas Inc.
711 Commerce Way
Suite 8
Jupiter
FL-33458
USA
From outside US: +1
Tel: (561) 320-9162
Fax: (561) 320-9176
info@pce-americas.com

PCE Instruments UK Ltd.
Units 12/13
Southpoint Business Park
Ensign way
Hampshire / Southampton
United Kingdom, SO31 4RF
From Outside UK: +44
Tel: (0) 2380 98703 0
Fax: (0) 2380 98703 9
info@pce-instruments.com

www.pce-instruments.com/english
www.pce-instruments.com

Manual
Crane Scales PCE-DDM series

DYNAMOMETER
0
ZERO
UNIT
PEAK
PCE-DDM Series

Version 1.0
Date of creation: 15/12/2014
Date of last change: 07.01.2015

Contents

1 Introduction ... 3
2 Safety notes ... 3
2.1 General ... 3
2.2 Maintenance and inspection ... 4
3 Specifications ... 5
4 System description ... 6
5 Instructions ... 7
5.1 Display and keys ... 7
5.1.1 LCD display ... 7
5.1.2 Keypad ... 7
5.2 Wireless hand-held display unit ... 8
5.3 Function guide ... 9
5.3.1 ON / OFF ... 9
5.3.2 Zero ... 9
5.3.3 TARE ... 9
5.3.4 PEAK HOLD ... 9
5.3.5 Data memory ... 9
5.3.6 Data search ... 9
5.3.7 Delete memory ... 10
5.3.8 Battery voltage ... 10
5.3.9 To change the unit ... 10
5.3.10 To return to measurement mode ... 10
5.4 Parameter selection and calibration ... 10
5.4.1 Key functions ... 10
5.4.2 Parameter settings ... 10
5.4.3 Calibration ... 12
5.5 Display explanations ... 12
5.6 Troubleshooting ... 13
6 Disposal ... 14
7 Contact ... 14
7.1 PCE Instruments UK ... 14
7.2 PCE Americas ... 14

1 Introduction

Thank you for purchasing PCE-DDM series crane scales from PCE Instruments.
These crane scales which are made of high-quality materials are perfectly suitable for mobile tension measurements, e. g. as carried out by consultants. They have a high measurement capacity but are also compactly constructed with a low net weight.

2 Safety notes

2.1 General

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damage or injuries caused by non-observance of the manual.

- The device may only be used in approved temperature ranges as laid down in the specifications. Exposure to extreme temperatures, direct sunlight, extreme atmospheric humidity or wetness (e. g. wet hands) must be avoided.
- The case must only be opened by qualified personnel of PCE Instruments.
- The instrument should never be placed with the user interface facing an object (e.g. keyboard side on a table).
- You should not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth / use only pH-neutral cleaner, no abrasives or solvents.
- If you do not use the device for a longer period of time, remove the batteries.
- The device may only be used with PCE accessories or equivalent.
- Do not use the device in potentially explosive atmospheres.
- Do not weigh more than the maximum capacity.
- To avoid hazards arising from load lifting, the producer as well as the user have to comply with certain duties. The use of the measuring equipment may at no time be hazardous.
- The person responsible for the measuring equipment as well as the user must observe and fulfill the national regulations, e. g. regulations for accident prevention, safety regulations, work protection regulations and all other regulations applicable for the use of the measuring equipment.
- Other directives such as regulations and safety information for the use of the measuring equipment must be borne in mind, for example those of the crane producer, of the load suspension device producer and of the shackle producer.
- In this relation, the measurement equipment may only be mounted, put into service, maintained and operated by qualified personnel using appropriate protective equipment.
- The measuring equipment must not be changed and may only be used for intended purposes.
- The measuring equipment as well as all other equipment (e. g. the crane, the load suspension devices etc.) must be maintained, serviced and accordingly recorded regularly. Before each use of this equipment, you should at least visually inspect it. In case the equipment is incomplete or damaged (e. g. cracks, deformations, split-offs) the equipment must be taken out of service. It is urgently necessary to get advice from your company's responsible safety representative regarding this matter.
- Repairs may only be carried out by qualified personnel and only quality-tested spare parts must be used. All repairs, maintenance work and spare parts must be documented by the service partner.
- The manual as well as the safety notes should always be with the measuring equipment.
- The measuring equipment is **not ex-protected** and may not be used in potentially explosive atmospheres. The environmental conditions such as the temperature ranges can be seen from the manual and must be adhered to. Aggressive or corrosive areas of application must be avoided. When the temperature fluctuates severely, an acclimatization period must be included.
- The measuring equipment is only approved for lifting and weighing freely-moveable loads. Torsion (torsional stress) of the load is not allowed. Carrying persons, pulling, tearing, towing etc. of loads is prohibited.
- The permissible nominal load [MAX] of the measuring equipment and other equipment in use (e. g. crane, lifting fixation device etc.) may under no circumstances be exceeded.
- When you use the equipment, you must always observe the possible danger zone. Do not enter the danger zone during use. This does not only include the area directly under the load but also the areas which can be dangerous due to e. g. swinging ropes or other load suspension devices.

This manual is published by PCE Instruments without any guarantee.

We expressly refer to our general guarantee terms, they can be found in our general terms of business.

If you have any questions please contact PCE Instruments.

2.2 Maintenance and inspection

- Inspection ahead of each use of the measuring equipment

When inspecting the equipment before starting work, the user must make sure that
- there are no visible deformations or other damage such as cracks,
- all attachment parts are complete and in good condition (e. g. safety splits etc.)
- the existing complete system does not inherit any hazards (e. g. faulty mounting etc.)
- the environment does not inherit any hazards and if so, that counter measures are taken.

- Regular inspection / maintenance

Every 3 months or 12500 measurements, whatever happens first.	- Control the wear and tear of the attachment parts. - Control all dimensions. - Consider all possible deformations and damage. - Make sure that all parts work properly.
Every 12 months or 50000 measurements, whatever happens first.	- Inspect all load-bearing parts, e. g. check for hairline cracks etc. Have maintenance carried out by qualified personnel.
Every 5 years or 250000 measurements, whatever happens first.	**-** All load-bearing parts must be replaced.
Every 10 years or 500000 measurements, whatever happens first.	- Service life of the equipment is over. Equipment must be replaced.

Only the owner or user is responsible for damage and injuries resulting from improper use or non-observance of the regulations. The producer assumes no liability for improper use. The safety notes are extracts from the valid norms and regulations along with some notes and tips. These do not replace the valid regulations and norms but must be seen as assistance for safe use of the equipment. Please read the valid national norms and regulations.

If you have any questions, please contact PCE.

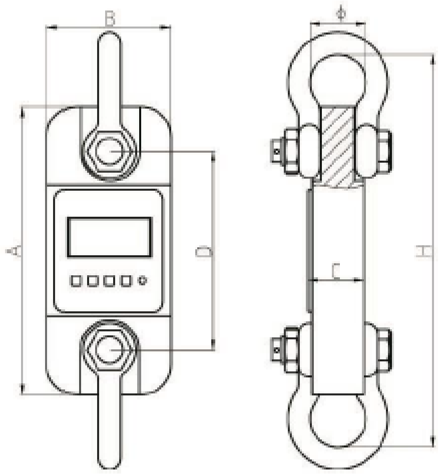
3 Specifications

accuracy	± 0,1 % of measurement range
taring range	max. 20 % of measurement range
display	25 mm (1 ”), 5 digits, LCD with 22 mm digit height
unit of measurement	kg / t / lbs / N / kN
wireless range	approx. 80 m
sampling rate	2.5 Hz
operating conditions	-10 ... +40 °C, ≤ 85 % RH
power supply	3 x 1.5 V AA batteries
operation time	approx. 50 h
battery life	≤ 40 hours

model	range	resolution	minimum load	weight	with shackle
PCE-DDM 3	3000 kg / 30 kN	1 kg / 10 N	10 kg	2 kg	5 kg
PCE-DDM 5	5000 kg / 50 kN	2 kg / 20 N	40 kg	3 kg	6 kg
PCE-DDM 10	10000 kg / 100 kN	5 kg / 50 N	100 kg	11 kg	25 kg
PCE-DDM 20	20000 kg / 200 kN	10 kg / 100 N	200 kg	18 kg	49 kg
PCE-DDM 50	50000 kg / 500 kN	20 kg / 200 N	400 kg	39 kg	128 kg

Delivery contents
1 x crane scales PCE-DDM
1 x hand-held display unit
2 x shackle
1 x carrying case + batteries and manual

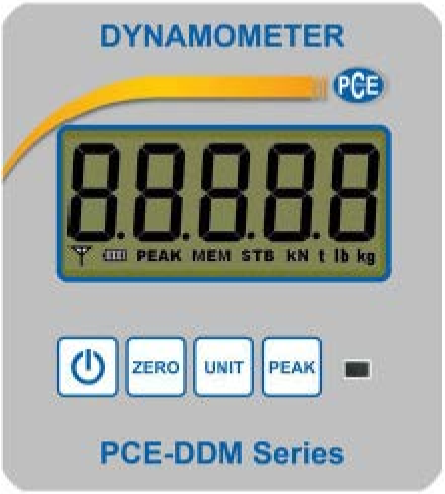
4 System description



Model	A (mm)	B (mm)	C (mm)	D (mm)	Ø (mm)	H (mm)	Material
PCE-DDM 3	260	123	37	195	51	365	aluminium
PCE-DDM 5	285	123	57	210	58	405	aluminium
PCE-DDM 10	320	120	57	230	92	535	steel
PCE-DDM 20	375	128	74	260	127	660	steel
PCE-DDM 50	465	150	104	305	184	930	steel

5 Instructions

5.1 Display and keys



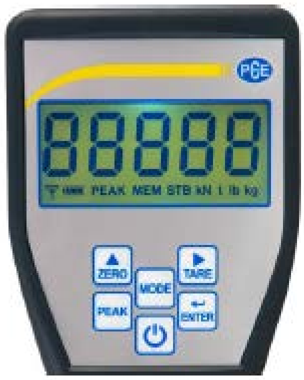
5.1.1 LCD display

a) 25 mm (1“) 5-digit LCD display with all functions and units
b) 📶: Wireless connection signal. Symbol means that the signal is stable. It disappears when no signal is received and it flashes when the signal is weak.
c) 🔋 battery indication. 🔋: full, 🪫: low, ▭: flat.
d) **PEAK**: current value is the maximum value.
e) **MEM**: appears once when the value is saved in the parameter or calibration memory. When it appears for a longer period of time, the values are saved in the data memory.
f) **STB**: stable condition.
g) **kN**: “kilonewton”, **N**: “newton”, in taring mode the “N” flashes.
h) **t**: “tonne”.
i) **lb**: “lbs”.
k) **kg**: “kilogrammes”.

5.1.2 Keypad

a) **ON / OFF**
1. Press the “**ON / OFF**” key to switch the device on.
2. When the device is switched on, press the “**ON / OFF**” key for 3 seconds to switch the device off.
b) **ZERO**: When the device is switched on without any load attached to the hook and the display still shows numbers, press this key to set the device to 0.
c) **UNIT**: Press the “UNIT” key to change the unit: “kg” → “lb” → “N” → “kN” → “t” → “kg”.
d**) PEAK**: When you attach a new weight and press the PEAK key, the device will show the maximum value of this new weight and freezes it into the display. By pressing the key again, you return to normal measurement.

5.2 Wireless hand-held display unit



1) “**Zero**”
a) When the device is switched on without any load attached to the hook and the display still shows numbers, press this key to set the device to 0.
b) In the settings this key is used as the up key.

2) “**Tare**”
a) Attach a loop or a container to the hook and press this key when the device displays a stable value. The display will now show “0” and “N” flashes.
b) Pour the products into the container. The device will now show the net weight of the product.
c) When you remove the products and the container from the hook, the device will display negative values.
d) In the settings this key is used to switch between the digits.

3) “**Mode**”
Press “MODE” to switch the backlight off and “ENTER” to confirm this.
Press “MODE” twice to get to the setup and “ENTER” to get to the parameter settings. Press “MODE” to return to measurement mode.
Press “MODE” 3 times. The display will show “dC”. Then press the “ENTER” key to check the battery level. Press “MODE” to return to measurement mode.
Press “MODE” 4 times. The display will show “Unit”. Then press “ENTER” to get to the mode in which you can select the unit. Press “Zero” to select the unit and “Mode” to return to measurement mode.
Press “MODE” 5 times. The display will show “ACCU”. Then press “ENTER” to check the memory status. Press “MODE” to return to measurement mode.
Press “MODE” 6 times. The display will show “SACCU”. Press “ENTER” to search within the memory. Press “MODE” to return to measurement mode.
Press “MODE” 7 times. The display will show “CLEAr”. Press “ENTER” to delete the memory. Press “MODE” to return to measurement mode.
Press “MODE” 8 times. The display will show “CLIBr”. Press “ENTER” and hold it for 3 seconds to check the calibration process. Press “ENTER” and hold I for fewer than 3 seconds to return to measurement mode.
Press “MODE” 9 times. The display will show “ESC”. Press “ENTER” and “Peak” to return to the default settings.

4) “**Enter**”
Is used to select a function, normally in combination with the “MODE” key.

5) “**Peak**”
When you attach a new weight and press the PEAK key, the device will show the maximum value of this new weight and freezes it into the display. By pressing the key again, you return to normal measurement.

5.3 Function guide

5.3.1 ON / OFF

To switch on: Press “**ON / OFF**” and hold it for 3 seconds. The display will show the following:

OPERATION	DISPLAY	Description
ON / OFF	[8.8.8.8.8.]	displayed twice, self-diagnostic programme
	[1000.0]	displayed twice, shows capacity
	[U=3.98.]	current battery voltage is 3.98 V
	[u=2.1]	current software version
	[-----]	stabilisation
	[5000]	capacity (5 t in this case)

Switch-off

1	manual switch-off	Press the “ON / OFF” key for 3 seconds.
2	remote switch-off	Press the “MODE” key on the hand-held display unit to select “Power Off and hold “Enter” to confirm and switch off the device.
3	automatic switch-off	Select “switch-off” in the parameter settings. [-] is displayed. When the device is not operated for 15 minutes it changes into the energy saver mode and switches off automatically after 60 minutes.

5.3.2 Zero

	OPERATION	DISPLAY	When the device is switched on, it normally displays [0]. In case it shows small numbers, press this key.
1	Press “ZERO”	[0]	
2	Press “ZERO”		

5.3.3 TARE

	OPERATION	DISPLAY	Attach the tare weight after switching the device on and press this key. “TARE” is displayed and the display shows the net weight from now on
1	Press “Tare”	[0]	

5.3.4 PEAK HOLD

OPERATION	Description
Press “PEAK”	shows the maximum value
Press “PEAK” again	measured values change again

5.3.5 Data memory

OPERATION	DISPLAY	Description
Press the “MODE” key 5 times and confirm with “Enter”.	[No***]	current saving time
	[H****]	first 4 digits of the entire weight
	[L****]	last 4 digits of the entire weight

5.3.6 Data search

OPERATION	DISPLAY	Description
Press “Mode” 6 times. Then press the “Enter” key.	[No***]	current saving time
	[*****]	current weight
	[H****]	first 4 digits of the entire weight
	[L****]	last 4 digits of the entire weight
Press the “Mode” key again.		back

5.3.7 Delete memory

OPERATION	DISPLAY	Description
Press “Mode” 7 times and confirm with “Enter”.	[CLr]	question: delete or not?
	[noCLr]	Press “Mode” to stop.
	[8.8.8.8.8.]	Press “Enter” to delete.

5.3.8 Battery voltage

OPERATION	DISPLAY	Description
Press “Mode” 3 times. Display shows “dC”. Press “Enter”.	[U *.**]	display power battery voltage
Press “Mode”.		back

5.3.9 To change the unit

OPERATION	DISPLAY	Description
Press “Mode”. Select “Unit” and press “Enter”.	[Un =00]	Press “Enter”. The units are changed every time “Enter” is pressed.
Press “Mode” again.		back

5.3.10 To return to measurement mode

OPERATION	Description
Press “Mode”. Select “ESC” and press “Enter”.	to return to measurement mode

5.4 Parameter selection and calibration

You can use the hand-held device to select parameter settings or calibration.

5.4.1 Key functions

Key	Function
“Tare”	to change numbers
“ZERO”	to increase values
“MODE”	to save and exit
“ENTER”	to confirm

5.4.2 Parameter settings

OPERATION	DISPLAY	Description
Press “Mode” twice.	[SETUP]	to confirm, open the parameter settings
Press “Enter”.	[FS=06]	device displays capacity in case it is calibrated
Press “Zero” to select.	[FS=02]	select capacity The display shows 02/03/05/06/10/15/20/30/50/60/75 one after the other. Select cap: 2000 kg and for example FS =02.
Press “Enter” to confirm.	[Id=02]	The display shows Id = 02. If the device is calibrated, it will show the calibrated range.
Press “Zero” to select.	[Id=01]	select division The display shows 01/02/05/10/20 one after the other. 2000 kg The division is 1 kg, so choose Id = 01.
	[Pt=0]	If the device is new, it will display Pt = 0. If the device is calibrated,

		it will display the calibrated decimal place.
Press “Zero” to select.	[Pt=0]	Select the decimal place. 0/1/2/3 is displayed one after the other. 0 = xxxxx, 1 = xxxx,x, 2 = xxx,xx, 3 = xx,xxx The capacity is 2000 kg, so choose Pt = 0
Press “Enter” to confirm.	[Ab=24]	Device shows the zero point.
Press “Enter” to confirm.	[Cd=11]	If the device is new, it will display Cd = 11. If the device is calibrated, it will display the calibrated value.
Press “Zero” to confirm.	[Cd=11]	C: search zero point. Range: 0 … 5 0 = 0 d, 1 = 0.5 d, 2 = 1 d, 3 = 1.5 d, 4 = 2 d, 5 = 2.5 d d: display speed 3 options: 0 = slow (1.24 Hz), 1 = medium (2.5 Hz), 2 = fast (5 Hz)
Press “Enter” to confirm.	[LL=2]	If the device is new, it will display LL = 2. If the device is calibrated, it will display the calibrated value.
Press “Zero” to select.	[LL=2]	LL: filter parameter, 6 options (0 … 5) from low to high. Select LL = 0 before calibration and LL = 2 after calibration.
Press “Enter” to confirm.	[Un=0]	If the device is new, it will display Un = 0. If the device is calibrated, it will display the calibrated value.
Press “Zero” to select.	[Un=0]	Select the unit. Un = 0: kg, Un = 1: lb, Un = 2: N, Un = 3: KN, Un = 4: t Normally select Un = 0.
Press “Enter” to confirm.	[OFF 1]	If the device is new, it will display OFF 1. If the device is calibrated, it will display the calibrated value.
Press “Zero” to select.	[OFF 2]	Choose the switch-off mode. You have 3 options: 0. manual switch-off, 1. remote switch-off, 2. automatic switch-off
Press “Enter” to confirm.	[SP1]	set point 1
Press “Enter” to confirm.	[1 OFF]	If the device is new, it will display 1 OFF. If the device is calibrated, it will display the calibrated value.
Press “Zero” to select.	[1 LO]	Select set point 1. “1 OFF” means that set point 1 does not inherit a function. “1 LO” means that set point 1 is 1 lower. “1 HI” means that set point 2 is 1 higher.
Press “Enter” to confirm.	[02000]	If the device is new, it will display 02000. If the device is calibrated, it will display the calibrated value.
Press “ZERO” to determine the value and “TARE” to move the decimal place.	[02000]	
Press “Enter” to confirm.	[SP2]	set point 2
Press “Enter” to confirm.	[2 OFF]	If the device is new, it will display 2 OFF. If the device is calibrated, it will display the calibrated value.

Press “Zero” to select.	[2 LO]	Select set point 2. “2 OFF” means that set point 2 does not inherit a function. “1 LO” means that set point 2 is 1 lower. “1 HI” means that set point 2 is 1 higher.
Press “TARE” to confirm.	[01200]	If the device is new, it will display 01200. If the device is calibrated, it will display the calibrated value.
Press “ZERO” to determine the value and “TARE” to move the decimal place.	[01200]	
Press “Enter” to confirm.	[g]	Gravity is taken into account.
Press “Enter” to confirm.	[9.7940]	If the device is new, it will display 97940. If the device is calibrated, it will display the calibrated value.
Press “Mode”.	[End]	Confirm the above parameter settings.

5.4.3 Calibration

OPERATION	DISPLAY	Description
	[0]	Select 2000 kg as capacity and make sure that the display shows [0] after attaching the tare weight. You can also attach the tare weight before switching the device on.
Press “MODE” 8 times. The display will show “CLIBr”. Press “ENTER” and hold it for 3 seconds to confirm the calibration.	[LoAd]	no load The display shows 0. Wait for the STB signal.
Attach a standard weight of 2000 kg.		Wait until the STB signal is displayed.
Press the “Enter” key.	[02000]	If the first number in the parameter settings flashes, select the capacity and wait for the STB signal on the screen.
Press “Mode” to save.	[------]	Confirm.
	[-oL-]	
	[End]	
	[2000.0]	
Press “Tara” to move the decimal place.	[2000]	Calibration finished.

5.5 Display explanations

DISPLAY	explanation	note
[no519]	no wireless signal	
[SEtUP]	open parameter settings	
[UAdJ]	open tension settings	
[LoAd]	calibration point	
[¯¯¯¯¯]	select max. limit	tare weight cannot be the max. limit
[_____]	select min. limit	tare weight cannot be the min. limit
[-----]	wait	
[Err10]	weight < minimum load	cannot be weighed
[Err11]	saving time exceeded	cannot save after 30 times
[Err12]	memory full	cannot save more than 99999

		times
[Err13]	error in repeated saving	cannot save the same weight twice
[no***]	current number of memory locations	
[H****]	first 4 digits of the saved value	actual weight = first 4 digits + last 4 digits
[L****]	last 4 digits of the saved value	actual weight = first 4 digits + last 4 digits
[CLr]	question whether you are sure that you want to delete the memory	if not, stop the deletion process
[noCLr]	deletion stopped	
[88888]	deletion confirmed	
[‾‾‾]	value is too high	
[____]	value is too low	
[noACC]	no value saved	appears when you check the memory
[-oL0-]	overload warning	
[-oL1-]	overload warning	
[-Lb-]	battery warning	after 1 min. automatic switch-off
[U*.**]	battery voltage	
[End]	end	finish parameter setting or calibration
[OFF]	switch-off	
[Unstb]	weight attached before STB light flashes	

5.6 Troubleshooting

problem	**possible reason**	**solution**
no display	batteries defective	replace
	key defective	call support
	ON / OFF key has not been pressed properly	press the ON / OFF key firmly for 3 seconds
numbers flash	batteries low	recharge batteries
display does not show new values when new loads are attached	defective force transducer	call support
	no longer calibrated	re-calibrate
display shows excessive deflections towards 0 between weighings	The device has not sufficiently stabilised after switch-on	allow 3 – 5 minutes to warm up after switch-on
display shows Error in huge letters during weighing	device has not been reset to 0	press ZERO before you start weighing
	repeat calibration	see calibration
	kg / lb wrong choice	see hand-held device
wireless connection reduced	batteries low	replace batteries

6 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.

7 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

7.1 PCE Instruments UK

By post:
PCE Instruments UK Ltd.
Units 12/13 Southpoint Business Park
Ensign Way, Southampton
Hampshire

United Kingdom, SO31 4RF

By phone:
Support: 02380 987 035
Sales: 02380 987 030

7.2 PCE Americas

By post:
PCE Americas Inc.
711 Commerce Way
Suite 8
Jupiter
33458 FL
USA

By phone:
Phone: 410-387-7703
Fax: 410-387-7714

www.pce-instruments.com