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Reference manual KERN Communications Protocol (KCP)

KERN KCP

KCP versions: 1.1.5
Manual version 1.5.1 (2024-01)
GB

KCP-ZB-e-24151

GB

KERN KCP

Reference manual
KERN Communications Protocol (KCP)

English

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1 Brief outline

The KERN Communications Protocol (KCP) is a standardized interface command set for KERN balances and other instruments, which allows retrieving and controlling all relevant functions and functions of the device. KERN instruments featuring KCP are thus easily integrated with computers, industrial controllers and other digital systems.

This section gives an overview over the general command and response structure and lists the few basic commands required to handle the vast majority of applications.

1.1 Default interface communication parameters

By default, each KCP device comes preset to the following communication parameters. The applicable parameters depend on the type of communication interface:

Interfaces	**Parameters**			
RS-232 / Bluetooth SPP	Baud rate:	9600 baud/s	Data bits:	8 bits
	Parity:	none	Stop bits:	1 bit

1.2 Basic command and response format

KCP is based on simple ASCII-encoded text commands and responses. Every interaction consists of a command, possibly with arguments separated by spaces (symbol ␣) and terminated by Windows-style newline characters (*<CR><LF>)*:

Command		**Arguments**						**Terminator**	
<cmd>	␣	*<arg1>*	␣	*<arg2>*	␣	*<arg3>*	…	*<CR>*	*<LF>*

Correctly formatted commands are answered with a response containing the requested data including or following a confirmation of the following form:

Response		**Status**		**Data**	**Terminator**	
<cmd>	␣	A = accepted / acknowledge L = logical error / invalid parameter I = internal / technical error	␣	*command specific*	*<CR>*	*<LF>*
ES		Erroneous syntax or unknown command			*<CR>*	*<LF>*

Example: Command **"**Set indication unit to grams (g)" with response "accepted"

Command:	**U**	␣	**g**	*<CR>*	*<LF>*
dec:	85	32	103	13	10
hex:	55	20	67	0D	0A

➔

Response:	**U**	␣	**A**	*<CR>*	*<LF>*
dec:	85	32	65	13	10
hex:	55	20	41	0D	0A

Example: Command **"**Set indication unit to invalid unit" with response "logical error"

Command:	**U**	␣	**X**	*<CR>*	*<LF>*
dec:	85	32	88	13	10
hex:	55	20	58	0D	0A

➔

Response:	**U**	␣	**L**	*<CR>*	*<LF>*
dec:	85	32	76	13	10
hex:	55	20	4C	0D	0A

Example: Invalid command

Command:	**U**	␣	**g**	*<CR>*	*<LF>*
dec:	85	32	103	13	10
hex:	55	20	67	0D	0A

➔

Response:	**ES**	*<CR>*	*<LF>*
dec:	69 83	13	10
hex:	45 53	0D	0A

1.3 Language conventions

Throughout this manual, the following conventions are used for command and response syntax:

␣	Space symbol (dec 32, hex 20)
🡻	Commands sent to the balance / measurement device.
🡹	Responses of the balance / measurement device

1.4 Overview of basic commands

	Request stable indication (weighing or measured value) in the host unit (by default the current indication unit). Waits until indication fulfills the "stable" condition or until configured timeout is reached.	
↓	S	
↑	S␣S␣␣␣␣100.00␣g	Indication value is right aligned, 10 characters. Decimal sign is a point. The minus sign immediately precedes the numerical value – without leading zero. On multi-range devices, hidden trailing decimals are shown as spaces. Status "S" = current indication is stable Status "D" = current indication is unstable / dynamic
	S␣S␣␣␣-100.00␣g	
	S␣S␣␣␣1152.05␣kg	
	S␣I	In menu, currently executing another command or timeout reached.
	S␣+ *or* S␣-	Overload or underload

	Request immediate indication in the host unit (by default the current indication unit) Immediately sends the current indication without waiting for stable conditions.	
↓	SI	
↑	SI␣S␣␣␣␣100.00␣g	*see description of command "S"*
	SI␣D␣␣␣␣␣99.98␣g	
	SI␣I	In menu, currently executing another command or timeout reached.
	SI␣+ *or* S␣-	Overload or underload

	Zero indication	**Tare indication**	
↓	Z	T	
↑	Z␣A	T␣S␣11.123␣kg	Zeroing/taring successful.
	Z␣I	T␣I	In menu, currently executing another command or timeout reached.
	Z␣+ *or* Z␣-	T␣+ *or* T␣-	Overload or underload; or zero range exceeded

	Query or set display and host unit			
↓	U	Query current display unit		
↑	U␣A␣*<unit>*	Current display unit is *<unit>*		
↓	U␣*<unit>*	Set current display and host unit.	**Units:**	g, kg, mg, lb, pcs,%, N, kN, TF, KLBF, …
↑	U␣A	Unit successfully set		
	U␣I	Invalid unit.		

	Set mode of indication (Peak or track mode)	
↓	SIM	Query current mode of indication
↑	SIM␣A␣*<mode>*	Current mode of indication is *<mode>*
↓	SIM␣*<mode>*	Set current mode of indication and reset the current peak value. <*mode*> is one of the following: • T = Track mode (indicate the current measurand) • P = Peak mode (only indicate the largest value +/-) • P+ = Peak positive mode (only indicate the largest pos. value) • P- = Peak negative mode (only indicate the largest neg. value)
↑	SIM␣A	Mode successfully set, current peak value is zero.
	SIM␣I	Invalid <*mode*>

	Read measurement memory / reports Sends all available recorded data in a unspecified tabular form (separated by spaces)	
↓	SMEM	
↑	SMEM␣A␣START	Command understood, next lines will be the data in tabular form
	<header line> *<data line 1>* *<data line 2>* *<data line 3>*	Number Date Time Mode Indication 1 2016-01-13 12:34:56 T 12.3456 N 2 2016-02-22 12:37:15 P+ 12.3456 kN 3 2016-03-31 12:39:41 P- -1234.56 N
	SMEM␣A␣END	End of data

English

2 General

2.1 KCP Version

The KCP protocol is continuously being improved. With each new version, the KCP protocol version number is incremented. The number of the KCP version implemented in your particular device can be requested using the `I1` command.

Please make sure that you use the correct version of the KCP manual description (this document) for your device. If a command is only available in certain KCP versions, this will be mentioned in the section of the respective command.

2.2 KCP command levels

The KCP protocol commands are grouped in multiple levels. While Level 0 and Level 1 are available for all KCP devices, other levels may only be available with certain devices. Please refer to the individual chapter of each level for further details. Where there is no level specified, these commands belong to Level 4.

It is advised that you try to limit yourself to the lowest level of commands, that you can achieve your goals with. This allows you to connect a larger variety of KCP devices to your software without modifications.

2.3 KCP command categories

The KCP protocol commands are grouped in multiple categories, while a command can be in multiple categories. A device may support multiple command categories. Every command of a supported category is available. If a command of a supported category is not applicable to a device, the command returns “L”.

2.4 KCP permission categories

Next to each command syntax description, there may be a definition of the permission category

Permission category	**Description**
- not specified -	available to all users
K	only available for KERN service personnel
V	not available in verified mode

2.5 Conventions in this manual

Throughout this manual, the following conventions are used for command and response syntax:

␣	Space symbol (dec 32, hex 20)
🡻	Commands sent to the balance / measurement device.
🡹	Responses of the balance / measurement device
«param»	Parameter name, the brackets (*« and »*) are not to be sent
[ ]	Optional parameter / expression

2.6 Default communication parameters

By default, each KCP device comes preset to certain communication parameters. The applicable parameters depend on the type of communication interface and are listed in the following paragraphs.

2.6.1 RS-232 / RS-485

Baud rate: 9600 baud/s

Data bits: 8 bits

Parity: none

Stop bits: 1 bit

2.7 Protocol structure

KCP is based on simple ASCII-encoded text commands and responses.

2.7.1 Encoding

All characters and digits are encoded in ASCII – if not specified otherwise.

2.7.2 Case sensitiveness

The protocol is case sensitive. Commands and arguments should be written as described in this manual.

2.7.3 Commands

Every interaction consists of a command, possibly with arguments separated by spaces (symbol ␣) and terminated by Windows-style newline characters (*<CR><LF>)*:

Command		**Arguments**						**Terminator**	
<cmd>	␣	*<arg1>*	␣	*<arg2>*	␣	*<arg3>*	…	*<CR>*	*<LF>*

Commands should only be sent in uppercase letters.

2.7.4 Responses

Correctly formatted commands are answered with a response containing the requested data including or following a confirmation of the following form:

Response		**Status**		**Data**	**Terminator**	
<cmd>	␣	A = accepted / acknowledge L = logical error / invalid parameter I = internal / technical error	␣	*command specific*	*<CR>*	*<LF>*
ES		Erroneous syntax or unknown command			*<CR>*	*<LF>*

For commands that only execute actions on the device and do not return information required in your application, you can ignore the responses. However, to increase the reliability of your software, it is a good practice to read and evaluate the responses and act accordingly upon errors.

2.7.5 Examples

The following examples show some very basic interactions using the KCP protocol.

Example: Command **“**Set indication unit to grams (g)” with response “accepted”

Command:	**U**	␣	**g**	*<CR>*	*<LF>*
dec:	85	32	103	13	10
hex:	55	20	67	0D	0A

➔

Response:	**U**	␣	**A**	*<CR>*	*<LF>*
dec:	85	32	65	13	10
hex:	55	20	41	0D	0A

Example: Command **“**Set indication unit to invalid unit” with response “logical error”

Command:	**U**	␣	**X**	*<CR>*	*<LF>*
dec:	85	32	88	13	10
hex:	55	20	58	0D	0A

➔

Response:	**U**	␣	**L**	*<CR>*	*<LF>*
dec:	85	32	76	13	10
hex:	55	20	4C	0D	0A

Example: Invalid command

Command:	**U**	␣	**g**	*<CR>*	*<LF>*
dec:	85	32	103	13	10
hex:	55	20	67	0D	0A

➔

Response:	**ES**	*<CR>*	*<LF>*
dec:	69 83	13	10
hex:	45 53	0D	0A

English

2.8 Command queue and timing

2.8.1 Command queue / sequence

Ideally, the balance queues the data stream it receives and handles one command after the other. When this queue would overflow, the handshake mechanism of the underlying communication interface (e.g. RS-232 CTS/RTS or XON/XOFF handshake) prevents further data packages from the host computer. This allows the host computer to send whole scripts of commands to the balance.

Depending on the balance type (processor capabilities), this may not be possible. For maximum reliability, wait for the answer of a command before sending the next command – otherwise, for some balances, data could be corrupted or commands be missed.

2.8.2 Timeouts

There is no timeout between each character on a single command line (up to and including CR LF). An incomplete line will remain in the balance buffer without timeout until the line is completed. If the balance receive buffer is overflowing because there was no line end, the whole buffer is cleared.

This allows commands to be entered over a terminal software by a human user (one character at a time).

2.9 Units

All commands and responses in the KCP protocol use the following unit symbols:

Name	Symbol	Comment
Kilogram	kg	- no comment -
Ton	t	= 1000 kg
Gram	g	= 0.001 kg
Milligram	mg	= 0.000001 kg
Pound	lb	= 0.45359237 kg (lb. av. – Avoirdupois)
Pieces	pcs	requires piece weight
Percent	%	requires weight of 100%
Newton	N	Unit of force (where applicable)
Kilonewton	kN	= 1000 N
Ton-force	tf	= 9.80665 kN (weight of one ton due to standard gravity)
Pound-force	lbf / klbf	= 4.4482216152605 N (weight of one pound to standard gravity)

2.10 Message codes / Error codes

The following codes are used for errors and messages. In the protocol, the code number may be prefixed, e.g. “E1000”.

Code	Comment
0	no message
E0001	Linearization - Point undefined
E0002	Linearization - Not yet started
E0003	Get stable value timeout
E0004	Stable value not yet ready
E0005	Linearization - Point unavailable
E0006	Linearization/Adjustment started
E0007	Linearization - Cannot start
E0008	Adjustment - Not yet started (JAGL command)
E0009	Adjustment - Cannot start (JAGZ command)
E0010	Linearization/Adjustment not yet completed (JAS command)
E0011	Linearization - Correction point undefined
E0012	Adjustment - Out of adjustment range (JAS command)
E0013	Adjustment - Sequence error (JAGL command)

3 KCP commands – category “Device” (level 0)

@	Cancel
I0	List all implemented KCP commands
I1	Query KCP levels and KCP versions
KCPC	Query KCP categories
I2	Query device information (type, capacity)
I3	Query device software version
I4	Query serial number
I5	Query software identification number
IBIM	Query/set external model number
IBIN	Query/set user-defined inventory number

@ – Cancel

Description

@ can be used to achieve the same effect on the internal software state as disconnecting and reconnecting the power supply, that is, it empties the volatile memories. The purpose of this command is to initiate a command sequence.

Syntax

Command

@	Resets the device to the condition found after switching on, but without a zero setting being performed.

Responses

I4␣A␣"*«SNR»*"	Serial number is emitted; the device is ready for operation. (serial number may not available, then it is N/A)

Comments

- All commands awaiting responses are cancelled.
- If the device is on standby, it is switched on.
- The cancel command is always executed.
- The emitted serial number corresponds to the serial number of the terminal (if one is present), see [I4].
- The device does not carry out the whole restart process, but merely resets temporary states and cancels pending actions.

Examples

🡻	@	Cancel
🡹	I4␣A␣"B021002593"	Device is "reset", its serial number is B021002593

See also

➔	I4 – Query serial number

I0 – List all implemented KCP commands

Description

The I0 command lists all commands implemented in the present software.

All level 0 commands are listed in alphabetical order before all commands of level 1 etc.

Syntax

Command

I0	Send list of all implemented KCP commands.

Responses

I0␣B␣*«Level»*␣*"«Command»"* I0␣B␣*«Level»*␣*"«Command»"* I0␣B... I0␣A␣*«Level»*␣*"«Command»"*	1st command implemented. 2nd (next) command implemented. ... Last command implemented.
I0␣I	Command understood but currently not executable (device is currently executing another command).

Parameters / Return values

Name	Type	Values	Meaning
Level	integer	Number of the KCP level where the command belongs to:	
		0	KCP level 0
		1	KCP level 1
		2	KCP level 2
		…	…
Command	string		KCP command

Comments

- If a terminal and a weigh module, weighing platform are being used, the command list of the terminal is output. If only a weigh module, platform is being used, the command list of the weigh module, platform is shown.
- If I0 lists commands that cannot be found in the manual, these are reserved commands "for internal use" or "for future use", and should not be used or altered in any way.

Examples

↓	I0	Send list of commands
↑	I0␣B␣0␣"I0"	Level 0 command I0 implemented
↑	I0␣B...	...
↑	I0␣B␣0␣"@"	Level 0 command @ (cancel) implemented
↑	I0␣B␣1␣"D"	Level 0 command D implemented
↑	I0␣B...	...
↑	I0␣A␣3␣"SM4"	Level 3 command SM4 implemented

See also

➔	@ - cancel

I1, KCPV – Query KCP levels and KCP versions

Description

Query KCP levels and versions.

Syntax

Command

I1	Query KCP level and KCP versions.

Responses

I1␣A␣”*«Level»*”␣”*«V0»*”␣”*«V1»*”␣”*«V2»*”␣”*«V3»*”	Current KCP level and KCP versions
I1␣I	Command understood but currently not executable

Parameters / Return values

Name	Type	Values	Meaning
Level	string	0	KCP level 0
		01	KCP level 0 and 1
		03	KCP level 0 and 3
		013	KCP level 0, 1 and 3
		…	…
V0..V3	string		KCP versions of the related level (0 to 3) (see cover page of this manual for the KCP version of these commands)

Examples

🡻	I1	Query the current KCP level and version
🡹	I1␣A␣”0123”␣”2.00”␣”2.20”␣”1.00”␣”1.50”	Level 0-3 is implemented and the according version numbers are shown

English

KCPC – Query KCP categories

Description

Query KCP command categories.

Syntax

Command

KCPC	Query supported KCP command categories.

Responses

KCPC␣B␣"*«CategoryName₁»*" KCPC␣B␣"*«CategoryName₂»*" … KCPC␣A␣"*«CategoryNameₙ»*"	First supported KCP command category. Second supported KCP command category. … Last supported KCP command category.
KCPC␣I	Command understood but currently not executable

Parameters / Return values

Name	Type	Values	Meaning
CategoryName	string		KCP category internal name (see the separate chapters of this manual)

Examples

🡻	KCPC	Query the current KCP level and version
🡹	KCPC␣B␣"Device" KCPC␣B␣"Counting" KCPC␣A␣"Weighing Basic"	

I2, IBMT – Query device information (type, capacity)

Description

Use I2 to query information about the device (e.g. type and weighing capacity). The response is output as a whole string.

Syntax

Command

I2 IBMT	Query of the device

Responses

I2␣A␣"*«Type»␣«Capacity»␣«Unit»*" IBMT␣A␣"*«Type»␣«Capacity»␣«Unit»*"	Device/instrument type and capacity, with the correct number of digits depending on d.
I2␣I IBMT␣A	Command understood but currently not executable (device is currently executing another command, e.g. taring).

Parameters / Return values

Name	Type	Values	Meaning
Type	string		Type of device / instrument
Capacity	string		Capacity of device / instrument
Unit	string		Weight unit

Comments

- With multi-range devices, the last decimal place is available only in the finer ranges.
- The number of characters of "text" depends on the device type and capacity.

Examples

↓	I2	Query of the device data
↑	I2␣A␣"GAT␣6K-4␣6000.00␣g"	Device type and capacity

I3 – Query device software version

Description

Provides the device software version(s).

Syntax

Command

I3	Query of the device software version.

Responses

I3␣A␣"*«Software»*[␣*«TNR»*]" [␣"*«ApplicationSoftware»*"]	Device software version and type number.
I3␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).

Parameters / Return values

Name	Type	Values	Meaning
Software	string		(Legally relevant) software (firmware) version
TNR	string		Type number (number identifying the software configuration parameters used). Not sent, if software is not parameterizable / configurable to different types (most firmware).
Application-Software	string		(Not legally relevant) application soft (firmware) ware version, if available.

Comments

- Only the software version of the terminal software is issued.
- If no terminal is present, the bridge software is issued instead.

Examples

↓	I3	Query of the Software version number(s) and type definition number
↑	I3␣A␣"4.10"	4 .10: Software version number. No type number.
↑	I3␣A␣"4.10␣10.142"	4 .10: Software version number. 10.142: Type number.
↑	I3␣A␣"4.10␣10.142"␣"2.141"	4 .10: (Legally relevant) software version number. 10.142: Type number. 2.141: (Not legally relevant) application software number.

I4 , IBIS – Query / set serial number

Description

Use I4 to query the serial number of the device. In the case of devices, the serial number of the terminal is output.

Syntax

Command

I4 IBIS		Query of the serial number.
IBIS␣”*«SNR»*”	K	Set the serial number (if allowed).

Responses

I4␣A␣”*«SNR»*” IBIS␣A␣”*«SNR»*”	Serial number.
I4␣I IBIS␣I	Command not understood, not executable at present.
IBIS␣A	The serial number is set successfully.

Parameters / Return values

Name	Type	Values	Meaning
SNR	string		Serial number

Comments

- Due to production / cost reasons, the serial number may not be available over KCP. Here, the answer is N/A.
- The serial number agrees with that on the model plate and is different for every device.
- The serial number can be used, for example, as a device address in a network solution.
- The device response to I4 appears unsolicited after switching on and after the cancel command @.
- Only the serial number of the terminal is issued.
- If no terminal is present, the serial number of the bridge is issued instead.

Examples

🡻	I4	Query of serial number
🡹	I4␣A␣”WX1712345”	The serial number is: WX1712345

🡻	IBIS␣”WX1712345”	Set serial number
🡹	IBIS␣A	Serial number set.

🡻	IBIS	Query of serial number
🡹	IBIS␣A␣”N/A”	No serial number available.

See also

🡺	@ - cancel

I5 – Query software identification number

Description

Identical to I3.

IBIM – Query/set device external model number

Description

Set the device brand model number (external article number for clients/sale).

Syntax

Command

IBIM		Query external model number.
IBIM␣”*«ModelNumber»*”	K	Set external model number.

Responses

IBIM␣A␣”*«ModelNumber»*”	The external model number.
IBIM␣A	The external model number is set successfully.
IBIM␣L	Model number invalid (too short/long).

Parameters / Return values

Name	Type	Values	Meaning
ModelNumber	string		External model number (max. 31 characters).

Examples

🡻	IBIM␣”IFB 30K-2M”	Set model number
🡹	IBIM␣A	Model number set.

English

IBIN – Query/set user-defined identification string (inventory number)

Description

Set a user-defined identification (ID) string (e.g. inventory number) into the device.

Syntax

Command

IBIN		Query identification string.
IBIN␣”*«ID»*”	K	Set identification string.

Responses

IBIM␣A␣”*«ID»*”	The configured identification string.
IBIM␣A	The identification string is set successfully.
IBIM␣L	ID invalid (too short/long).

Parameters / Return values

Name	Type	Values	Meaning
ID	string		Custom identification string (max. 31 characters).

Examples

🡻	IBIM␣”My 15kg balance”	Set ID string
🡹	IBIM␣A	ID string set.

4 KCP commands – category “Device Display” (level 1)

D	Display: Write text to display
DM	Query/set display mode
DW	Display: Show weight
IBBS	Query battery status
PWR	Power on/off

D – Display: Write text to display

Description

Use D to write text to the device display.

Syntax

Command

D␣*"«DisplayText»"*	V	Write text into the device display.

Responses

D␣A	Command understood and executed successfully: Text appears left-aligned in the device display marked by a symbol, e.g. *.
D␣I	Command understood but currently not executable.
D␣L	Command understood but not executable (incorrect parameter or device with no display).

Parameters / Return values

Name	Type	Values	Meaning
DisplayText	string		Text on the device display

Comments

- A symbol in the display, e.g. * indicates that the device is not displaying a weight value.
- The maximum number of characters of "text" visible in the display depends on the device type. If the maximum number of characters is exceeded, the text disappears on the right side.
- Quotation marks can be displayed as indicated

Examples

↓	D␣"HELLO"	Write "HELLO" into the device display
↑	D␣A	The full text HELLO appears in the device display

↓	D␣" "	Clear the device display
↑	D␣A	Device display cleared, marked by a symbol, e. g. *

See also

➔	DW – Display: Show weight

DM – Query / set display mode

Description

Describe the command in detail here.

Syntax

Command

DM	Query display mode.
DM␣*«DisplayMode»*	Set display mode.

Responses

DM␣A␣*«DisplayMode»*	Current display mode.
DM␣A	Display mode is set successfully.
DM␣I	Command understood but currently not executable.
DM␣L	Command understood but not executable (no display or incorrect parameter).

Parameters / Return values

Name	Type	Values		Meaning
DisplayMode	enum	DEF		Regular display mode.
		OFF		Display completely off (no segments)
		TXT	V	Display text defined in “D” only. (not available in verified mode)

Comments

This command can be used (combined with K), to disable the balance indication. Useful when only the remote indicator displays relevant/current information.

Examples

↓	DM	Query current display mode.
↑	DM␣A␣DEF	The current, stable ("S") weight value is 100.00 g

↓	DM␣OFF	Switch display off.
↑	DM␣A	OK, display switched off.

↓	DM␣TXT DM␣”Hello World”	Set display to display text only, display “Hello World”
↑	DM␣A	OK.

See also

→	D – Display text

DW – Display: Show weight

Description

Writes the current weight value to the device display using the set unit. This command is used to reset the display after using the D command.

Syntax

Command

DW	Switch the main display to weight mode.

Responses

DW␣A	Command understood and executed successfully: Main display shows the current weight value.
DW␣I	Command understood but currently not executable.

Comments

- DW resets the device display following a [D] command.

Examples

↓	DW	Switch the main display to weight mode
↑	DW␣A	Main display shows the current weight value

See also

→	D – Display: Write text to display

IBBS – Query battery status

Description

Query the current battery status.

Syntax

Command

IBBS	Retrieves the current battery capacity and charging status.

Responses

IBBS␣A␣*«BatteryIndicator»*␣%␣*«ChargeStatus»*	Current battery status.
IBBS␣L	No battery or no mechanism to retrieve battery charging status.

Parameters / Return values

Name	Type	Values	Meaning
Battery Indicator	integer	0 - 100	Battery charge status in percent (how much battery capacity is left). If the device does not support providing the exact battery status, the following values will be sent: • 0: battery low • 100: battery charged sufficiently or no information about battery available
ChargeStatus	string	N	No external power, not charging, running from battery.
		C	Currently charging.
		F	Fully charged.

Comments

- This command is mainly used for displaying a battery indicator in remote devices.

English

PWR – Power on/off

Description

Switch device on, off or into standby.

Syntax

Command

PWR	Query current power state (if possible).
PWR␣*«On/Off»*	Set current power state.

Responses

PWR␣A	Device has been switched off successfully.
PWR␣A I4␣A␣"*«SNR»*"	Device has been switched on successfully. Serial number is sent after startup.
PWR␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
PWR␣L	Command understood but not executable (not capable of switching power states or incorrect/unsupported parameter).

Parameters / Return values

Name	Type	Values	Meaning
On/Off	integer	0	Switch to standby mode (lower power consumption).
		1	Switch device on.
		2	Switch device off completely (lowest power state).

Comments

- It depends on the device whether switching on from the lowest power state is possible using the PWR command.

5 KCP commands – category “Weighing Basic” (level 0)

The commands from Level 0 offer the very basic functions available for every basic weighing device.

S	Send stable indication in host unit (weight value / measured value)
SI	Send current indication in host unit immediately
SIR	Send current indication in host unit immediately and repeat
SX	Send stable indication in host unit with additional digits
SXI	Send stable indication in host unit with additional digits immediately
SXIR	Send stable indication in host unit with additional digits immediately and repeat
T	Tare
TI	Tare immediately
TZ	Tare or zero the balance (e.g. combined tare/zero button)
U	Query or set display and host unit
Z	Zero after stability
ZI	Zero immediately

S – Send stable weight value in host unit

Description

Use S to send a stable weight value in the host unit, along with the unit.

Syntax

Command

S	Send the current stable net weight value in the host unit.

Responses

S␣S␣*«WeightValue»*␣*«Unit»*	Current stable weight value in the set host unit.
S␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
S␣L	Command understood but not executable (incorrect parameter).
S␣+	Device in overload range.
S␣-	Device in underload range.
S␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value in the host unit
Unit	string		Current host unit
ErrorCode	string		Code of error occurred

Comments

- The duration of the timeout depends on the device type.
- The weight value is formatted as a right aligned string with 10 characters including the decimal point. The minus sign for negative weight values belongs to the weight value and is also right aligned (without space between minus sign and number).
- Preceding zeros are not shown except for the zero to the left of the decimal point.
- For multi-range or floating range balances, the decimal places at the end that are not displayed (in higher ranges) are shown as spaces.

Examples

↓	S	Send a stable weight value in the host unit
↑	S␣S␣␣␣␣100.00␣g	The current, stable ("S") weight value is 100.00 g
↑	S␣S␣␣␣␣-100.00␣g	The current, stable ("S") weight value is -100.00 g
↑	S␣S␣␣␣␣200.00␣g S␣S␣␣␣␣200.0␣␣g (d = 0.01/0.1g) S␣S␣␣␣␣␣200.0␣g S␣S␣␣␣␣␣200.␣␣g (d = 0.1/1g)	In a higher range (for multi/floating-range balances), the last digit disappears and is replaced with a space.
↑	S␣S␣␣␣␣200.␣␣␣g	Theoretically, even two spaces could be missing with d=0.01/0.1/1g.
↑	S␣S␣␣␣␣␣10000␣g	When there is no decimal point, the value is still right aligned as described above.

SI – Send weight value in host unit immediately

Description

Use SI to immediately send the current weight value in the host unit, along with the unit.

Syntax

Command

SI	Send the current net weight value in the host unit, irrespective of device stability.

Responses

S␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in set host unit
S␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in set host unit
S␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
S␣L	Command understood but not executable (incorrect parameter).
S␣+	Device in overload range.
S␣-	Device in underload range.
S␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value
Unit	string		Current host unit
ErrorCode	string		Code of error occurred

Comments

- The device response to the command SI is the last internal weight value (stable or dynamic) before receipt of the command SI.
- The weight value is formatted as described in the comments of the S command.

Examples

↓	SI	Send current weight value
↑	S␣D␣␣␣␣129.07␣g	The weight value is unstable (dynamic, "D") and is currently 129.07 g

English

SIR – Send weight value in host unit immediately and repeat

Description

Use SIR to immediately send the current weight value, along with the unit, on a continuous basis.

Syntax

Command

SIR	Send the net weight values in the host unit repeatedly, irrespective of device stability. The default time between transmissions is device dependent (typically around 15 Hz).
SIR␣*«TimeMsBetweenTransmissions»*	As above, setting the time between transmissions explicitly (in milliseconds).

Responses

S␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in set host unit
S␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in host unit
S␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
S␣L	Command understood but not executable (incorrect parameter).
S␣+	Device in overload range.
S␣-	Device in underload range.
S␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
TimeMsBetween-Transmissions	int		Time in milliseconds between repeated transmissions. The maximum rate is limited by the minimum time possible required by the filter to deliver different indications. Faster repetition rates would make no sense as the indication could never change between two values.
WeightValue	float		Weight value
Unit	string		Current host unit
ErrorCode	string		Code of error occurred

Comments

- SIR is overwritten by the commands S, SI, @ and hardware break and hence cancelled.
- The weight value is formatted as a right aligned string with 10 characters including the decimal point.

Examples

↓	SIR	Send current weight values at intervals
↑	S␣D␣␣␣␣129.07␣g	The device sends stable ("S") or unstable ("D") weight values at intervals
↑	S␣D␣␣␣␣129.08␣g	
↑	S␣S␣␣␣␣129.09␣g	
↑	S␣S␣␣␣␣129.09␣g	
↑	S␣D␣␣␣␣129.87␣g	
↑	S␣...	

SX – Send stable weight value in host unit with additional digits

Description

Use SX to send a stable weight value with one additional digit, along with the host unit.

Syntax

Command

SX	Send the current stable net weight value in host unit with one additional digit.

Responses

SX␣S␣*«WeightValue»*␣*«Unit»*	Current stable weight value with one additional digit in set host unit.
SX␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
SX␣L	Command understood but not executable (incorrect parameter).
SX␣+	Device in overload range.
SX␣-	Device in underload range.
SX␣Z	Device zero out of range.
SX␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value
Unit	string		Current host unit
ErrorCode	string		Code of error occurred

Comments

- The duration of the timeout depends on the device type.
- The weight value is formatted as a right aligned string with 11 characters including the decimal point.
- Preceding zeros are not shown except for the zero to the left of the decimal point.
- For multi-range or floating range balances, the decimal places at the end that are not displayed (in higher ranges) are shown as spaces.
- For balances with auxiliary display (e != d), there will also be an additional digit.
- This command does not affect the readability of the user display (LCD), it still shows the regular readability.

Examples

↓	SX	Send a stable weight value with one additional digit
↑	SX␣S␣␣␣␣100.003␣g	The current stable ("S") weight value is 100.00 g. (In x10 format, there is one more decimal place.)

English

SXI – Send weight value in host unit with additional digits immediately

Description

Use SXI to immediately send the current weight value with one additional digit, along with the unit.

Syntax

Command

SXI	Send the current net weight value with one additional digit in host unit, irrespective of device stability.

Responses

SX␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in set host unit
SX␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in set host unit
SX␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
SX␣+	Device in overload range.
SX␣-	Device in underload range.
SX␣Z	Device zero out of range
SX␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value
Unit	string		Current host unit
ErrorCode	string		Code of error occurred

Comments

- The device response to the command SXI is the last internal weight value (stable or dynamic) before receipt of the command SXI.
- The weight value is formatted as described in the comments of the SX command.

Examples

🡻	SXI	Send current weight value
🡹	SX␣D␣␣␣␣129.072␣g	The weight value is unstable (dynamic, "D") and is currently 129.07 g. (In x10 format, there is one more decimal place.)

SXIR – Send weight value in host unit with additional digits immediately and repeat

Description

Use SXIR to immediately send the current weight value with one additional digit in host unit, along with the unit, on a continuous basis.

Syntax

Command

SXIR	Send the net weight values repeatedly, irrespective of device stability. The default time between transmissions is device dependent (typically around 15 Hz).
SXIR␣*«TimeMsBetweenTransmissions»*	As above, setting the time between transmissions explicitly (in milliseconds).

Responses

SX␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in set host unit
SX␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value (in x10 format) in set host unit
SX␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
SX␣L	Command understood but not executable (incorrect parameter).
SX␣+	Device in overload range.
SX␣-	Device in underload range.
SX␣Z	Device zero out of range
SX␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
TimeMsBetween-Transmissions	int		Time in milliseconds between repeated transmissions
WeightValue	float		Weight value
Unit	string		Current host unit
ErrorCode	string		Code of error occurred

Comments

- SXIR is overwritten by the commands SX, SXI, @ and hardware break and hence cancelled.
- The weight value is formatted as described in the comments of the SX command.

Examples

🡻	SXIR	Send current weight values with one additional digit at intervals
🡹	SX␣D␣␣␣␣129.071␣g	The device sends stable ("S") or unstable ("D") weight values at intervals
🡹	SX␣D␣␣␣␣129.083␣g	
🡹	SX␣S␣␣␣␣129.087␣g	
🡹	SX␣S␣␣␣␣129.092␣g	
🡹	SX␣D␣␣␣␣129.865␣g	
🡹	SX␣...	

T – Tare

Description

Use T to tare the device. The next stable weight value will be saved in the tare memory.

Command

T	Tare, i.e. store the next stable weight value as a new tare weight value.

Responses

T␣S␣«*TareWeightValue*»␣«*Unit*»	Taring successfully performed. The tare weight value returned corresponds to the weight change on the device in set host unit since the last zero setting.
T␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting, or timeout as stability was not reached).
T␣L	Command understood but not executable (incorrect parameter).
T␣+	Upper limit of taring range exceeded.
T␣-	Lower limit of taring range exceeded.

Parameters / Return values

Name	Type	Values	Meaning
TareWeight-Value	float		Weight value
Unit	string		Current host unit

Comments

- The tare memory is overwritten by the new tare weight value.
- The duration of the timeout depends on the device type.
- Clearing tare memory: See TAC.
- The weight value is formatted as a right aligned string with 10 characters including the decimal point.

Examples

🡻	T	Tare
🡹	T␣S␣␣␣␣100.00␣g	The device is tared and has a value of 100.00 g in the tare memory

See also

➔	TAC – Clear tare value

TI – Tare immediately

Description

Use TI to tare the device immediately and independently of device stability.

Command

TI	V	Tare immediately, i.e. store the current weight value, which can be stable or non stable (dynamic), as are weight value.

Responses

TI␣S␣*«TareWeightValue»*␣*«Unit»*	Taring performed, stable tare value. The new tare value corresponds to the weight change on the device in the host unit since the last zero setting.
TI␣D␣*«TareWeightValue»*␣*«Unit»*	Taring performed, non-stable (dynamic) tare value.
TI␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting).
TI␣L	Command understood but not executable (e.g. certified version of the device).
TI␣+	Upper limit of taring range exceeded.
TI␣-	Lower limit of taring range exceeded.

Parameters / Return values

Name	Type	Values	Meaning
TareWeight-Value	float		Tare Weight value
Unit	string		Current host unit

Comments

- The tare memory will be overwritten by the new tare weight value.
- After a non-stable (dynamic) stored tare weight value, a stable weight value can be determined. However, the absolute value of the stable weight value determined in this manner is not accurate.
- The taring range is specified to the device type.
- The weight value is formatted as a right aligned string with 10 characters including the decimal point.
- The stored tare weight value is sent in the unit set

Examples

↓	TI	Tare immediately
↑	TI␣D␣␣␣␣117.57␣g	The tare memory holds a non-stable (dynamic) weight value

See also

→	TAC – Clear tare value

English

TZ – Combined Tare/Zero

Description

Tare or zero the balance, depending on the current load (like a combined tare/zero button).

Syntax

Command

TZ	Tare or zero the balance.

Responses

TZ␣A␣*«TareOrZero»*[␣*«TareWeightValue»*␣*«Unit»*]	Balance tared or zeroed, depending on current load. If tared, the new tare value is being sent as parameter.
TZ␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting, or timeout as stability was not reached).
TZ␣L	Command understood but not executable (incorrect parameter).
TZ␣+	Upper limits exceeded.
TZ␣-	Lower limits exceeded.

Parameters / Return values

Name	Type	Values	Meaning
TareOrZero	string	T	Tare operation executed
		Z	Zero operation executed
TareWeight-Value	float		Tare weight value (only when tared)
Unit	string		Current host unit

Comments

- If the balance has a combined zero/tare function key, this command should work as the button works.
- Also balances with separate zero and tare function should have this combined function. If the current load is within the zero range of the balance, it will be zeroed. If it is higher than the zero range, the current load will be taken as tare.

Examples

↓	TZ	Tare or zero.
↑	TZ␣A␣Z	Balance zeroed, tare value is cleared.

↓	TZ	Tare or zero.
↑	TZ␣A␣␣T␣␣␣␣100.00␣g	Balance tared, the device has a value of 100.00 g in the tare memory

See also

→	T – Tare
→	Z – Zero
→	TAC – Clear tare value

U – Query / set display and host unit

Description

This command retrieves or sets both the display and the host unit.

The *display unit* is the unit displayed in the display of the indicator.

The *host unit* is the unit used to send weighing values to the *host* (remote device / computer).

Syntax

Command

U	Query the current display unit.
U␣*«UnitSymbol»*	Set the current display and host unit.

Responses

U␣A␣*«UnitSymbol»*	Returns the currently set display unit symbol.
U␣A	Unit successfully set.
U␣L	Unit symbol invalid or required factors not set (see below).

Parameters / Return values

Name	Type	Values	Meaning
UnitSymbol	string	see [*Units*]	Symbol of the unit to set.

Comments

- For certain units (e.g. percent, pieces, free factor, …), before using this command, the corresponding factor has to be set using KCP commands or the balance keyboard.
- In verified mode, not all units may be available.

Examples

↓	U	Query unit
↑	U␣A␣g	The current unit is gram (g).
↑	U␣A␣kg	The current unit is kilogram (kg).

↓	U␣g	Set the units to gram (g).
↑	U␣A	The unit is set now.

↓	U␣%	Set the unit to percent (%).
↑	U␣I	Invalid action, because the weight of 100% was not set before.

English

Z – Zero (after stability)

Description

Use Z to set a new zero; all weight values (including the tare weight) will be measured relative to this zero. After zeroing has taken place, the following values apply: tare weight = 0; net weight (= gross weight) = 0.

Syntax

Command

Z	Zero the device.

Responses

Z␣A	Zero setting successfully performed. Gross, net and tare = 0.
Z␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
Z␣+	Upper limit of zero setting range exceeded.
Z␣−	Lower limit of zero setting range exceeded.

Comments

- The tare memory is cleared after zero setting.
- The zero point determined during switching on is not influenced by this command, the measurement ranges remain unchanged.
- The duration of the timeout depends on the device type.

Examples

↓	Z	Zero
↑	Z␣A	Zero setting performed

ZI – Zero immediately

Description

Use ZI to set a new zero immediately, regardless of device stability. All weight values (including the tare weight) will be measured relative to this zero. After zeroing has taken place, the following values apply: tare weight = 0; net weight (= gross weight) = 0.

Syntax

Command

ZI	V	Zero the device immediately regardless the stability of device..

Responses

ZI␣D	Re-zero performed under non-stable (dynamic) conditions.
ZI␣S	Re-zero performed under stable conditions.
ZI␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
ZI␣+	Upper limit of zero setting range exceeded.
ZI␣–	Lower limit of zero setting range exceeded.

Comments

- The tare memory is cleared after zero setting.
- This command is not supported by approved devices.
- The zero point determined during switching on is not influenced by this command, the measurement ranges remain unchanged.

Examples

↓	ZI	Zero immediately
↑	ZI␣D	Re-zero performed under non-stable (dynamic) conditions

English

6 KCP commands – category “Weighing Advanced” (level 1)

The commands from Level 1 are available for all more advanced weighing instruments.

IBRL	List of balance range information
IBRT	Query balance ranges type
IU	Query available units
IVERS	Query/set verification state
SU	Send stable indication in display unit (weight value / measured value)
SIU	Send current indication in display unit immediately
SIRU	Send current indication in display unit immediately and repeat
SXU	Send stable indication in display unit with additional digits
SXIU	Send stable indication in display unit with additional digits immediately
SXIRU	Send stable indication in display unit with additional digits immediately and repeat
SR	Send weight value on weight change (send and repeat)
TA	Query/preset tare weight value
TAI	Query/preset (internal) tare weight value
TAC	Clear tare value

IBRL / BalanceRangesList – List of balance range information

Description

Query balance range information.

Syntax

Command

IBRL	Query balance range information.

Responses

IBRL␣B␣*«RangeNr»*␣*«Max»*␣*«Unit»*␣*«d»*␣*«Unit»* [␣*«Min»* ␣*«Unit»* ␣*«e»* ␣*«Unit»*] IBRL␣B␣*«RangeNr»*␣*«Max»*␣*«Unit»*␣*«d»*␣*«Unit»* [␣*«Min»* ␣*«Unit»* ␣*«e»* ␣*«Unit»*] … IBRL␣A␣*«RangeNr»*␣*«Max»*␣*«Unit»*␣*«d»*␣*«Unit»* [␣*«Min»* ␣*«Unit»* ␣*«e»* ␣*«Unit»*]	Information about first range (if multiple). Information about second range (if multiple). Information about last range. (Min and e are optional when it is not verifyable)
IBRL␣I	Command understood but currently not executable.

Parameters / Return values

Name	Type	Values	Meaning
RangeNr	float	0,1,2,3,…	Number of the range
Max	float		Max (capacity of this range)
d	float		d (readout)
Min	float		Min (minimum verification value)
e	float		e (verification interval)
Unit	string	see [Units]	Unit for the corresponding value.

English

IBRT – Query balance ranges type

Description

Query the type of the balance ranges. This defines the way, the balance switches between ranges (if multiple).

Syntax

Command

IBRT		Query balance range type.
IBRT␣«*BalanceRangeType*»	V	Set balance range type

Responses

IBRT␣A␣*«BalanceRangeType»*	Answer with balance range type.

Parameters / Return values

Name	Type	Values	Meaning
BalanceRangeType	string	SR	Single range
		MR	Multi range
		FR	Floating range

IU – Query available units

Description

Query the available units (e.g. for the U command).

Syntax

Command

IU	Query available units.

Responses

IU␣B␣*«UnitSymbol»*	Answer with available unit 1
IU␣B␣*«UnitSymbol»*	Answer with available unit 2.
…	…
IU␣A␣*«UnitSymbol»*	Answer with the last available unit.

Parameters / Return values

Name	Type	Values	Meaning
UnitSymbol	string	see [Units]	Name/symbol of the unit

Comments

- The units available may be limited for verified devices.

IVERS – Query/set verification state

Description

Query or set current state of verification.

Syntax

Command

IVERS		Query current verification state.
IVERS␣*«VerificationState»*	V	Set current verification state.

Responses

IVERS␣A␣*«VerificationState»*	Current verification state.
IVERS␣A	Verification state set successfully.
IVERS␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached, or the device does have a mechanical switch).
IVERS␣L	Command understood but not executable (incorrect parameter.

Parameters / Return values

Name	Type	Values	Meaning
Verification-State	bool	0	not in verified mode or no type approval / verification not possible.
		1	in verified mode

Comments

- Setting the verification state may not be possible because there is a mechanical switch used for sealing.
- Setting the verification state changes the software sealing number and official reverification may be necessary.

SU – Send stable weight value in display unit

Description

Identical syntax and behavior as the S command, except the value is returned in the current display unit, not the host unit.

Syntax

Command

SU	Send the current stable net weight value in display unit.

Responses

SU␣S␣*«WeightValue»*␣*«Unit»*	Current stable weight value in the display unit.
SU␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
SU␣L	Command understood but not executable (incorrect parameter).
SU␣+	Device in overload range.
SU␣-	Device in underload range.
SU␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value in the display unit
Unit	string		Current display unit
ErrorCode	string		Code of error occurred

Examples

🡻	SU	Send a stable weight value in the display unit
🡹	SU␣S␣␣␣␣100.00␣pcs	The current, stable ("S") piece count is 100
🡹	SU␣S␣␣␣-100.00␣g	The current, stable ("S") weight value is -100.00 g

See also

➔	S – Send stable weight value in host unit

English

SIU – Send current indication in display unit immediately

Description

Identical syntax and behavior as the SI command, except the value is returned in the current display unit, not the host unit.

Syntax

Command

SIU	Send the current net weight value in the display unit, irrespective of device stability.

Responses

SU␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in display unit
SU␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in display unit
SU␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
SU␣L	Command understood but not executable (incorrect parameter).
SU␣+	Device in overload range.
SU␣-	Device in underload range.
SU␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value in display unit
Unit	string		Current display unit
ErrorCode	string		Code of error occurred

Examples

🡻	SIU	Send a stable weight value in the display unit
🡹	SIU␣S␣␣␣␣100.00␣pcs	The current, stable ("S") piece count is 100
🡹	SIU␣D␣␣␣␣-100.00␣g	The weight value is unstable (dynamic, "D") and is currently -100.00 g

See also

🡺	SI – Send current indication in host unit immediately

SIRU – Send current indication in display unit immediately and repeat

Description

Identical syntax and behavior as the SIR command, except the value is returned in the current display unit, not the host unit.

Syntax

Command

SIRU	Send the net weight values in display unit repeatedly, irrespective of device stability. The default time between transmissions is device dependent (typically around 15 Hz).
SIRU␣*«TimeMsBetweenTransmissions»*	As above, setting the time between transmissions explicitly (in milliseconds).

Responses

SU␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in set display unit
SU␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in set display unit
SU␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
SU␣L	Command understood but not executable (incorrect parameter).
SU␣+	Device in overload range.
SU␣-	Device in underload range.
SU␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
TimeMsBetween-Transmissions	int		Time in milliseconds between repeated transmissions. The maximum rate is limited by the minimum time possible required by the filter to deliver different indications. Faster repetition rates would make no sense as the indication could never change between two values.
WeightValue	float		Weight value in display unit
Unit	string		Current display unit
ErrorCode	string		Code of error occurred

Examples

🡻	SIRU	Send current weight values at intervals
🡹	SU␣D␣␣␣␣129.07␣lb	The device sends stable ("S") or unstable ("D") weight values at intervals in display unit
🡹	SU␣D␣␣␣␣129.08␣lb	
🡹	SU␣S␣␣␣␣129.09␣lb	
🡹	SU␣S␣␣␣␣129.09␣lb	
🡹	SU␣D␣␣␣␣129.87␣lb	
🡹	SU␣...	

See also

🡺	SIR – Send current indication in host unit immediately and repeat

SXU – Send stable indication in display unit with additional digits

Description

Identical syntax and behavior as the SX command, except the value is returned in the current display unit, not the host unit.

Syntax

Command

SXU	Send the current stable net weight value in display unit with one additional digit

Responses

SXU␣S␣*«WeightValue»*␣*«Unit»*	Current stable weight value in the display unit with one additional digit
SXU␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
SXU␣L	Command understood but not executable (incorrect parameter).
SXU␣+	Device in overload range.
SXU␣–	Device in underload range.
SXU␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value in the display unit
Unit	string		Current display unit
ErrorCode	string		Code of error occurred

Examples

🡻	SXU	Send a stable weight value in the display unit with one additional digit
🡹	SXU␣S␣␣␣␣-100.001␣g	The current, stable ("S") weight value is -100.01 g

See also

➔	SX – Send stable indication in host unit with additional digits

SXIU – Send stable indication in display unit with additional digits immediately

Description

Identical syntax and behavior as the SXI command, except the value is returned in the current display unit, not the host unit.

Syntax

Command

SXIU	Send the current net weight value in the display unit with one additional digit, irrespective of device stability.

Responses

SXU␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in display unit with one additional digit
SXU␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in display unit with one additional digit
SXU␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
SXU␣L	Command understood but not executable (incorrect parameter).
SXU␣+	Device in overload range.
SXU␣-	Device in underload range.
SXU␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value in display unit
Unit	string		Current display unit
ErrorCode	string		Code of error occurred

Examples

🡻	SXIU	Send a stable weight value in the display unit
🡹	SXIU␣D␣␣␣␣-100.001␣g	The weight value is unstable (dynamic, "D") and is currently -10.001 g

See also

➔	SXI – Send stable indication in host unit with additional digits immediately

English

SXIRU – Send stable indication in display unit with additional digits immediately and repeat

Description

Identical syntax and behavior as the SXIR command, except the value is returned in the current display unit, not the host unit.

Syntax

Command

SXIRU	Send the net weight values in the display unit repeatedly, irrespective of device stability. The default time between transmissions is device dependent (typically around 15 Hz).
SXIRU␣*«TimeMsBetweenTransmissions»*	As above, setting the time between transmissions explicitly (in milliseconds).

Responses

SXU␣S␣*«WeightValue»*␣*«Unit»*	Stable weight value in set display unit
SXU␣D␣*«WeightValue»*␣*«Unit»*	Non-stable (dynamic) weight value in set display unit
SXU␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring).
SXU␣L	Command understood but not executable (incorrect parameter).
SXU␣+	Device in overload range.
SXU␣-	Device in underload range.
SXU␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
TimeMsBetween-Transmissions	int		Time in milliseconds between repeated transmissions. The maximum rate is limited by the minimum time possible required by the filter to deliver different indications. Faster repetition rates would make no sense as the indication could never change between two values.
WeightValue	float		Weight value in display unit
Unit	string		Current display unit
ErrorCode	string		Code of error occurred

Examples

🡻	SIRU	Send current weight values at intervals
🡹	SU␣D␣␣␣␣129.07␣lb	The device sends stable ("S") or unstable ("D") weight values at intervals
🡹	SU␣D␣␣␣␣129.08␣lb	
🡹	SU␣S␣␣␣␣129.09␣lb	
🡹	SU␣S␣␣␣␣129.09␣lb	
🡹	SU␣D␣␣␣␣129.87␣lb	
🡹	SU␣...	

See also

🡺	SXIR – Send stable indication in host unit with additional digits immediately and repeat

SR – Send weight value on weight change (send and repeat)

Description

Use SR to send the current weight values following a predefined minimum change in weight and on a continuous basis. The weight value is sent, along with the unit.

Command

SR	Send the current stable weight value and then continuously after every weight change. If no preset value is entered, the weight change must be at least 12.5% of the last stable weight value, minimum = 30 digit.
SR␣*«PresentValue»*␣*«Unit»*	Send the current stable weight value and then continuously after every weight change greater or equal to the preset value a non-stable (dynamic) value followed by the next stable value, range = 1 digit to maximal capacity.

Responses

S␣S␣*«WeightValue»*␣*«Unit»*	Current, stable weight value in set host unit, 1st weight change.
S␣D␣*«WeightValue»*␣*«Unit»*	Dynamic weight value in set host unit.
S␣S␣*«WeightValue»*␣*«Unit»*	Next stable weight value in set host unit.
S␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting, or timeout as stability was not reached).
S␣L	Command understood but not executable (incorrect parameter).
S␣+	Device in overload range.
S␣–	Device in underload range.
S␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Weight value
Unit	string		Unit, only available units permitted
ErrorCode	string		Code of error occurred

Comments

- SR is overwritten by the commands S, SI, @ and hardware break and hence cancelled.
- If, following a non-stable (dynamic) weight value, stability has not been reached within the timeout interval, the response S␣I is sent and then a non-stable weight value. Timeout then starts again from the beginning.
- The preset value can be entered in any by the device accepted unit.
- The weight value is formatted as a right aligned string with 10 characters including the decimal point.

Examples

↓	SR␣10.00␣g	Send the current stable weight value followed by every load change of 10 g
↑	S␣S␣␣␣␣100.00␣g	Device stable
↑	S␣D␣␣␣␣115.23␣g	100.00 g loaded
↑	S␣S␣␣␣␣200.00␣g	Device again stable

See also

→	S – Send stable weight value
→	SI – Send weight value immediately
→	SIR – Send weight value immediately and repeat

TA – Query/preset tare weight value

Description

Use TA to query the current tare value or preset a known tare value.

Command

TA		Query of the current tare weight value (rounded).
TA␣*«TarePresentValue»*␣*«Unit»*		Preset of a tare value (when supported, see comments).

Responses

TA␣A␣*«TareWeightValue»*␣*«Unit»*	Query current tare weight value in tare memory, in set host unit.
TA␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting, or timeout as stability was not reached).
TA␣L	Command understood but not executable (incorrect parameter or no preset-tare function available).

Parameters / Return values

Name	Type	Values	Meaning
TarePresent Value	float		Tare value to be set
TareWeight-Value	float		Rounded tare weight value
Unit	string		Current host unit

Comments

- The tare memory will be overwritten by the preset tare weight value.
- The inputted tare value will be automatically rounded by the device to the current readability / verification interval (according to the requirements for NAWI).
- The taring range is specified to the device type.
- The weight value is formatted as a right aligned string with 10 characters including the decimal point.
- The setting command is only available for devices that support preset tare in their current state (NAWIs may not support preset tare, when verified).

Examples

↓	TA␣100.00␣g	Preset a tare weight of 100 g
↑	TA␣A␣␣␣␣100.00␣g	The device has a value of 100.00 g in the tare memory

See also

→	TAC – Clear tare value

TAI – Query/preset tare weight value (internal, not rounded)

Description

Use TAI to query the current, unrounded tare value or preset a known exact tare value.

Command

TAI		Query of the current tare weight value in the internal resolution (not rounded).
TAI␣*«TarePresentValue»*␣*«Unit»*	V	Preset of a tare value.

Responses

TAI␣A␣*«TareWeightValue»*␣*«Unit»*	Query current tare weight value in tare memory, in set host unit.
TAI␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting, or timeout as stability was not reached).
TAI␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
TarePresent Value	float		Exact tare value to be set
TareWeight-Value	float		Current rounded Tare weight value
Unit	string		Current host unit

Comments

- The tare memory will be overwritten by the preset tare weight value.
- The inputted tare value will **not** be rounded to the current readability. Therefore, this is not allowed for verified NAWIs.
- The internal resolution and taring range is specified to the device type. Typically, the internal resolution is 5-10 times higher than the resolution of the TA command.

Examples

↓	TAI␣100.123␣g	Preset a tare weight of 100.123 g (even when d=0.01g).
↑	TAI␣A␣100.123␣g	The device has a value of 100.123 g in the tare memory

See also

→	TAC – Clear tare value

TAC – Clear tare value

Description

Use TAC to clear the tare memory.

Command

TAC	Clear tare value.

Responses

TAC␣A	Tare value cleared, 0 is in the tare memory.
TAC␣I	Command understood but currently not executable (device is currently executing another command, e.g. zero setting).
TAC␣L	Command understood but not executable (incorrect parameter).

Comments

- This command is only available for devices that support preset tare in their current state (NAWIs may not support preset tare, when verified).

Examples

↓	TAC	Clear tare value
↑	TAC␣A	Tare value cleared, 0 is in the tare memory

See also

→	T – Tare
→	TI – Tare immediately
→	TA – Query/preset tare weight value
→	TC – Tare or tare immediately after timeout

7 KCP commands – category “Weighing Adjustment” (level 2)

These commands allow to setup and adjust (“calibrate”) a weighing device.

Attention: In future versions of KCP, some commands of this category could be changed.

C3	Start adjustment with internal weight
GA	Query / set gravity value of place of adjustment
GU	Query / set gravity value of place of use
JAGZ	Gain adjustment – Zero point
JAGL	Gain adjustment – At load
JALZ	Linearization adjustment – Zero point
JALL	Linearization adjustment – At load
JAS	Save balance adjustment
JDL	Query / set linearization points
JDP	Query / set linearization correction point
JDV	Query / set linearization correction value

C3 – Start adjustment with internal weight

Description

You can use C3 to start an internal adjustment procedure.

Syntax

Command

C3	Start the internal adjustment.

First Responses

C3␣B	The adjustment procedure has been started. Wait for second response.
C3␣I	Adjustment cannot be performed at present as another operation is taking place. No second response follows.
C3␣L	Adjustment operation not possible (e.g. no internal weight). No second response follows.

Further Responses

C3␣A	Adjustment has been completed successfully.
C3␣I	The adjustment was aborted as, e.g. stability not attained or the procedure was aborted with the C key.

Comments

- Commands sent to the balance during the adjustment operation may not processed and responded to in the appropriate manner until the adjustment is at an end.

Examples

↓	C3	Start internal adjustment.
↑	C3␣B	Started.
↑	C3␣A	Completed successfully.

English

GA – Query / set gravity value of place of adjustment

Description

Use this command to query or set the gravity value of the place of adjustment.

Syntax

Command

GA		Query the gravity value of adjustment.
GA␣*«GravityValue»*	V	Set the gravity value of adjustment.

Responses

GA␣A␣*«GravityValue»*	Gravity value of adjustment.
GA␣A	Command understood and executed successfully
GA␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
GA␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
GravityValue	float		Gravity value.

Comments

- After the balance adjustment, both the gravity value of adjustment and the gravity value of place of use will be set to nominal value 9.80665 m/s².
- Once either the gravity value of adjustment or the gravity value of place of use is modified, all the correction points set by the JDPx command will be cleared.

Examples

🡻	GA	Query the gravity value of adjustment.
🡹	GA␣A␣9.8150000	Gravity value of adjustment is 9.8150000.

🡻	GA␣9.79	Set the gravity value of adjustment to 9.79.
🡹	GA␣A	Command accepted.

See also

🡺	GU – Query / set the gravity value of place of use

GU – Query / set gravity value of place of use

Description

Use this command to query or set gravity value of place of use.

Syntax

Command

GU		Query the gravity value of place of use.
GU␣*«GravityValue»*	V	Set the gravity value of place of use.

Responses

GU␣A␣*«GravityValue»*	Gravity value of place of use.
GU␣A	Command understood and executed successfully
GU␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
GU␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
GravityValue	float		Gravity value.

Comments

- After the balance adjustment, both the gravity value of adjustment and the gravity value of place of use will be set to nominal value 9.80665.
- Once either the gravity value of adjustment or the gravity value of place of use is modified, all the correction points set by the JDPx command will be cleared.

Examples

↓	GU	Query the gravity value of place of use.
↑	GU␣A␣9.8150000	Gravity value of place of use is 9.8150000.

↓	GU␣9.79	Set the gravity value of place of use to 9.79.
↑	GU␣A	Command accepted.

See also

→	GA – Query / set the gravity value of adjustment

JAGZ – Gain adjustment – Zero point

Description

Use JAGZ to set the zero adjustment point of the balance.

Syntax

Command

JAGZ	V	Set zero offset of the balance.

Responses

JAGZ␣A␣*«AdjustmentWeight»*␣*«Unit»*	Zero offset setting successfully performed and proceeds to gain adjustment.
JAGZ␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JAGZ␣L	Command understood but not executable (incorrect parameter).

Comments

- All three commands, JAGZ, JAGL and JAS have to be entered strict sequentially for completing the balance adjustment.

Examples

↓	JAGZ	Set zero offset of the balance.
↑	JAGZ␣A␣␣␣␣␣␣20.00␣kg	Zero offset setting successfully performed.

See also

→	JAGL – Set gain adjustment
→	JAS – Save balance adjustment

JAGL – Gain adjustment – At load

Description

Use JAGL to set the gain adjustment at load of the balance.

Use JDA to set the adjustment weight.

Syntax

Command

JAGL	V	Set gain adjustment of the balance.

Responses

JAGL␣A␣*«IndicationBeforeAdj»*␣*«Unit»*␣*«IndicationAfterAdj»*␣*«Unit»*	Gain adjustment setting successfully performed.
JAGL␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JAGL␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
IndicationBeforeAdj	float		Value before adjustment: The indication of the balance with the adjustment load, before this gain adjustment.
IndicationAfterAdj	float		Value after adjustment: The indication of the balance with the adjustment load, after this gain adjustment. This should be the nominal value of the adjustment weight.
Unit	enum	see [Units]	Unit in which the previous values are given.

Examples

🡻	JAGL	Set gain adjustment of the balance.
🡹	JAGL␣A␣999.98␣g␣1000.00␣g␣	Gain adjustment setting successfully performed.

See also

➔	JAGZ – Set zero adjustment
➔	JAS – Save balance adjustment

English

JALZ – Start linearization adjustment – Zero point

Description

Use JALZ to start linearization and set the zero adjustment point of the balance.

Syntax

Command

JALZ	V	Set zero offset of the balance.

Responses

JALZ␣A␣*«LinearizationPoint»*␣*«Unit»*	Zero offset setting successfully performed and proceeds to first linearization point.
JALZ␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JALZ␣L	Command understood but not executable (incorrect parameter).

Comments

- All three commands, JAGZ, JAGL and JAS have to be entered strict sequentially for completing the balance adjustment.

Examples

↓	JALZ	Start linearization.
↑	JALZ␣A␣␣␣␣␣␣20.00␣kg	Linearization successfully started (zero offset stored), continue with load 20kg.

See also

→	JAGL – Set gain adjustment
→	JAS – Save balance adjustment

JALL – Continue linearization adjustment at load

Description

Use JALL to continue the linearization of the device.

Syntax

Command

JALL	V	Continue linearization adjustment at the next point.

Responses

JALL␣B␣*«LinearizationPoint»*␣*«Unit»*	Linearization point adjustment setting successfully performed and proceeds to next point.
JALL␣A	Linearization complete and successfully performed.
JALL␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).

Comments

- The commands, JALZ, JALL and JAS are required to enter sequentially for completing the balance adjustment.

Examples

↓	JALL	Set linearization/gain adjustment of the balance.
↑	JALL␣B␣␣␣␣␣␣20.00␣kg	Linearization adjustment setting successfully performed and proceeds to next point 20.00 kg.
↑	JALL␣B␣␣␣␣␣␣50.00␣kg	Linearization adjustment setting successfully performed and proceeds to next point 50.00 kg.
↑	JALL␣A	Balance adjustment setting successfully performed.

See also

→	JALZ – Start linearization
→	JAS – Save balance adjustment

English

JAS – Save balance adjustment

Description

Use JAS to save the new balance adjustment settings in the permanent memory.

Syntax

Command

JAS	V	Save the balance adjustment settings.

Responses

JAS␣A	Save balance adjustment settings successfully performed.
JAS␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JAS␣L	Command understood but not executable (incorrect parameter).

Comments

- The commands, JALZ, JALL and JAS are required to enter sequentially for completing the balance adjustment.
- Once the balance adjustment is completed, all the correction points set by the JDPx command will be cleared.

Examples

↓	JAS	Save balance adjustment settings.
↑	JAS␣A	Balance adjustment settings successfully saved.

See also

→	JAZL – Set zero linearization adjustment
→	JALL – Set linearization adjustment

JDL – Query / set linearization point

Description

Use this command to query or set a linearization point.

Syntax

Command

JDL␣*«pnr»*		Query the linearization point.
JDL␣*«pnr»*␣*«Linearization-Point»*␣*«Unit»*	V	Set the linearization point with unit, x = 1..3.

Responses

JDL␣A␣*«pnr»*␣*«LinearizationPoint»*␣*«Unit»*	Linearization point value.
JDL␣A␣*«pnr»*	Command understood and executed successfully
JDL␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDL␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
pnr	int	0 … 7	Linearization point index
Linearization-Point	float	< nominal capacity	Linearization point value.
Unit	string		

Comments

- When nominal capacity and division are set by using the commands JDC and JDD, all linearization points will be initialized to zero.
- Setting a zero value means to clear that linearization point.
- When linearization process started, all valid linearization points will be sorted in ascending order.
- Any duplicated linearization points will be disregarded.
- Zero and the capacity of the scale are linearization points by default.

Examples

↓	JDL␣0
↑	JDL␣0␣A␣␣␣␣␣␣10.00␣kg

Query the linearization point 1.

Linearization point 1 is 10.00 kg.

↓	JDL␣1␣50 kg
↑	JDL␣1␣A

Set linearization point 2 to 50 kg.

Command accepted.

See also

→	JDC – Query / set nominal capacity
→	JDD – Query / set division
→	JDO – Query / set overload capacity

English

JDPx – Query / set linearization correction point

Description

Use this command to query or set a correction point.

Syntax

Command

JDP«x»		Query the correction point.
JDP«x»␣«CorrectionPoint»␣«Unit»	V	Set the correction point with unit

Responses

JDPx␣A␣«CorrectionPoint»␣«Unit»	Correction point with unit.
JDPx␣A	Command understood and executed successfully
JDPx␣I	Command understood but currently not executable(device is currently executing another command,e.g. gain adjustment was not completed).
JDPx␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
x	int	0..7	Number of correction point
Correction-Point	float		Weight of correction point.
Unit	string		

Comments

Examples

↓	JDP1	Query the correction point 1.
↑	JDP1␣A␣␣␣␣␣␣10.00␣kg	Correction point 1 is 10.00 kg.
↓	JDP2␣50 kg	Set correction point 2 to 50 kg.
↑	JDP2␣A	Command accepted.

See also

→	JDVx – Query / set correction value

JDVx – Query / set linearization correction value

Description

Use this command to query or set the correction value of a correction point.

Syntax

Command

JDVx		Query the correction value
JDVx␣*«CorrectionValue»*␣*«Unit»*	V	Set the correction value with unit

Responses

JDVx␣A␣*«CorrectionValue»*␣*«Unit»*	Correction value with unit.
JDVx␣A	Command understood and executed successfully
JDVx␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDVx␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
x	int	0..7	Number of correction point
Correction-Value	float		Correction value
Unit	string		

Comments

- The corresponding correction point must be set before setting the correction value.

Examples

🡻	JDV1	Query the correction point 1.
🡹	JDV1␣A␣␣␣␣␣␣␣0.03␣kg	Correction point 1 is 0.03 kg.
🡻	JDV2␣-0.01 kg	Set correction point 2 to -0.01 kg.
🡹	JDV2␣A	Command accepted.

See also

🡺	JDPx – Query / set correction point

8 KCP commands – category “Weighing Service”

These commands include internal commands for a weighing device.

JDC	Query / set nominal capacity
JDD	Query / set division / readout
JDE	Query / set verification interval
JDM	Query / set verification min
JDO	Query / set overload capacity
JDA	Query / set adjustment weight
M19	Query / set adjustment weight (with error)
JDF	Query / set filter settings
SAD	Send AD value
SADR	Send AD value and repeat
ZINI	Query / set initial zero range
ZMAN	Query / set manual zero range
ZTRA	Query / set zero tracking range
ZTRE	Query / set zero tracking state

JDC – Query / set nominal capacity

Description

Use this command to query or set the nominal capacity.

Syntax

Command

JDC		Query the current nominal capacity (highest range).
JDC␣*«CapacityValue»*␣*«Unit»*	V	Set the nominal capacity with unit (single range).
JDC␣*«Nr»*		Query the current nominal capacity for range *Nr*.
JDC␣*«Nr»*␣*«CapacityValue»*␣*«Unit»*	V	Set the nominal capacity for range *Nr* with unit.

Responses

JDC␣A␣*«CapacityValue»*␣*«Unit»*	Current nominal capacity value for highest range.
JDC␣A␣*«Nr»*␣*«CapacityValue»*␣*«Unit»*	Current nominal capacity value for range *Nr*.
JDC␣A	Command understood and executed successfully
JDC␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDC␣L	Command understood but not executable (incorrect parameter, multi-range balance but no range number given).

Parameters / Return values

Name	Type	Values	Meaning
Nr	int	1, 2, 3	Range number.
CapacityValue	float		Nominal capacity value.
Unit	string		Unit to be used

Comments

- The two commands, JDC and JDD are required to enter sequentially for completing the setting of basic weighing parameters.
- The overload capacity is automatically set to nominal capacity plus 9d. Use JDO command to modify the overload capacity.
- The adjustment weight *JDA* is automatically set to the highest range capacity when the current value of *JDA* is out of range.
- The capacities given have to increase with the range number.
- The range number of the largest capacity value automatically defines the number of ranges. To reduce the number of ranges, set other ranges to 0 kg (default values).

English

Examples

↓	JDC	Query the current nominal capacity.
↑	JDC␣A␣␣␣␣␣10.00␣kg	The current nominal capacity is 10.00 kg.

↓	JDC␣50␣kg	Set nominal capacity to 50 kg.
↑	JDC␣A	Command accepted but division and overload capacity are not defined yet.

↓	JDC␣1␣50␣kg	Set nominal capacity to 50 kg for range 1.
↑	JDC␣A	Accepted.
↓	JDC␣2␣50␣kg	Set nominal capacity to 50 kg for range 2.
↑	JDC␣A	Command accepted but division and overload capacity are not defined yet.
↓	JDC␣3␣0␣kg	There is no third range (default).
↑	JDC␣A	Number of ranges are defined to be 2.

See also

➔	JDD – Query / set division
➔	JDO – Query / set overload capacity

JDD – Query / set division

Description

Use this command to query or set the division.

Syntax

Command

JDD		Query the division (highest range).
JDD␣*«DivisionValue»*␣*«Unit»*	V	Set the division with unit (single range).
JDD␣*«Nr»*		Query the division for range *Nr*.
JDD␣*«Nr»*␣*«DivisionValue»*␣*«Unit»*	V	Set the division for range *Nr* with unit.

Responses

JDD␣A␣*«DivisionValue»*␣*«Unit»*	Current division for highest range.
JDD␣A␣*«Nr»*␣*«DivisionValue»*␣*«Unit»*	Current division for range *Nr*.
JDD␣A	Command understood and executed successfully.
JDD␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDD␣L	Command understood but not executable (incorrect parameter, multi-range balance but no range number given).

Parameters / Return values

Name	Type	Values	Meaning
Nr	int	1, …	Range number.
DivisionValue	float		Division value.
Unit	string		

Comments

- The two commands, JDC and JDD are required to enter sequentially for completing the setting of basic weighing parameters.

Examples

↓	JDD	Query the current division.
↑	JDD␣A␣␣␣␣␣0.01␣kg	The current division is 0.01 kg.
↓	JDD␣0.02 kg	Set the division to 0.02 kg.
↑	JDD␣A	Command accepted.

See also

→	JDC – Query / set nominal capacity
→	JDO – Query / set overload capacity

English

JDE – Query / set verification interval

Description

Use this command to query or set the verification interval (e=).

Syntax

Command

JDE		Query the verification interval (highest range).
JDE␣*«E»*␣*«Unit»*	V	Set the verification interval with unit (single range).
JDE␣*«Nr»*		Query the verification interval for range *Nr*.
JDE␣*«Nr»*␣*«E»*␣*«Unit»*	V	Set the verification interval for range *Nr* with unit.

Responses

JDE␣A␣*«E»*␣*«Unit»*	Current verification interval for highest range.
JDE␣A␣*«Nr»*␣*«E»*␣*«Unit»*	Current verification interval for range *Nr*.
JDE␣A	Command understood and executed successfully.
JDE␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDE␣L	Command understood but not executable (incorrect parameter, multi-range balance but no range number given).

Parameters / Return values

Name	Type	Values	Meaning
Nr	int	1, …	Range number.
E	float		Verification interval value.
Unit	string		

Comments

- The two commands, JDE and JDD are required to enter sequentially for completing the setting of basic weighing parameters.

Examples

↓	JDE	Query the current verification interval.
↑	JDE␣A␣␣␣␣␣0.01␣kg	The current verification interval is 0.01 kg.
↓	JDE␣0.02 kg	Set the verification interval to 0.02 kg.
↑	JDE␣A	Command accepted.

See also

➔	JDC – Query / set nominal capacity
➔	JDO – Query / set overload capacity

JDM – Query / set minimum weight

Description

Use this command to query or set the minimum weight allowed for legal weighing.

Syntax

Command

JDM		Query the minimum weight (lowest range).
JDM␣*«Min»*␣*«Unit»*	V	Set the minimum weight with unit (single range).
JDM␣*«Nr»*		Query the minimum weight for specified range
JDM␣*«Nr»*␣*«Min»*␣*«Unit»*	V	Set the minimum weight for specified range with unit.

Responses

JDM␣A␣*«Min»*␣*«Unit»*	Current minimum weight for lowest range.
JDM␣A␣*«Nr»*␣*«Min»*␣*«Unit»*	Current minimum weight for specified range
JDM␣A	Command understood and executed successfully.
JDM␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDM␣L	Command understood but not executable (incorrect parameter, multi-range balance but no range number given).

Parameters / Return values

Name	Type	Values	Meaning
Nr	int	1, …	Range number.
Min	float		Division value.
Unit	string		

Comments

- The two commands, JDC and JDM are required to enter sequentially for completing the setting of basic weighing parameters.
- For multi-interval balances, both ranges have the same Min.

Examples

↓	JDM	Query the minimum weight.
↑	JDM␣A␣␣␣␣␣␣␣␣1␣kg	The current division is 0.01 kg.
↓	JDM␣2 kg	Set the minimum weight to 2 kg.
↑	JDM␣A	Command accepted

See also

➔	JDC – Query / set nominal capacity
➔	JDO – Query / set overload capacity

JDO – Query / set overload capacity

Description

Use this command to query or set the overload capacity.

Syntax

Command

JDO		Query the current overload capacity.
JDO␣*«OverloadValue»*␣*«Unit»*	V	Set the overload capacity with unit.

Responses

JDO␣A␣*«OverloadValue»*␣*«Unit»*	Current overload capacity value.
JDO␣A	Command understood and executed successfully
JDO␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
JDO␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
OverloadValue	float		Overload capacity value.
Unit	string		

Comments

- The unit must be the same as in the JDC command.

Examples

🡻	JDO	Query the current overload capacity.
🡹	JDO␣A␣␣␣␣␣10.09␣kg	The current overload capacity is 10.09 kg.

🡻	JDO␣51.5 kg	Set overload capacity to 51.50 kg.
🡹	JDO␣A	Command accepted.

See also

🡺	JDC – Query / set nominal capacity
🡺	JDD – Query / set division

JDA / M19 – Query / set adjustment weight (for gain adjustment)

Description

Use this command to query or set the adjustment weight for gain adjustment using the JAGZ and JAGL commands or the balances user adjustment function (CAL button or menu function).

Syntax

Command

JDA		Query the current adjustment weight.
JDA␣*«WeightValue»*␣*«Unit»*	V	Set the adjustment weight with unit.
M19		Query the current adjustment weight.
M19␣*«WeightValue»*␣*«Unit»*	V	Set the adjustment weight with unit.

Responses

M19␣A␣*«WeightValue»*␣*«Unit»*	Current adjustment weight value.
M19␣A	Command understood and executed successfully
M19␣I	Command understood but currently not executable (device is currently executing another command, e.g. gain adjustment was not completed).
M19␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Adjustment value weight value.
Unit	string		

Comments

- The adjustment weight value also may include the weights error.
- The unit must be the same as in the JDA command.
- After changing, the command JAS has to be executed.

Examples

🡻	JDA	Query the current adjustment weight.
🡹	M19␣A␣␣␣␣␣10.09␣kg	The current adjustment weight is 10.09 kg.

🡻	M19␣50.005 kg	Set adjustment weight to 50.005 kg.
🡹	M19␣A	Command accepted.

See also

🡺	JDC – Query / set nominal capacity
🡺	JDD – Query / set division
🡺	JAS – Save adjustment
🡺	JAGZ – Gain adjustment - zero
🡺	JAGL – Gain adjustment - load

English

JDF – Query / set filter settings

Description

Use this command to query or set the filter settings.

Syntax

Command

JDF	Query the current filter settings.
JDF␣*«Filter»*	Set the current filter settings.

Responses

JDF␣A␣*«Filter»*	Current filter settings.
JDF␣A	Set filter setting successfully performed.
JDF␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JDF␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
Filter	float	0 - 100	Filter level (0 fast, 100 slow)

Examples

🡻	JDF	Send the current filter settings.
🡹	JDF␣30	The current filter settings are 30.

🡻	JDF␣30	Set the current filter settings to 30.
🡹	JDF␣A	Set current filter settings successfully performed.

SAD – Send current A/D converter internal value

Description

Use SAD to send the current internal value of the A/D converter.

Syntax

Command

SAD	Send the current AD value once.

Responses

SAD␣A␣*«AD Value»*	AD value
SAD␣I	Command understood but currently not executable (device is currently executing another command).
SAD␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
AD Value	int		AD value
ErrorCode	string		Code of error occurred

Comments

- The AD value is formatted as described in the comments of the S command.

Examples

🡻	SAD	Send current AD value
🡹	SAD␣A␣␣␣␣␣12907	The AD value is currently 12907

English

SADR – Send current A/D converter internal value and repeat

Description

Use SADR to send the A/D converter internal value, on a continuous basis.

Syntax

Command

SADR	Send the AD values repeatedly. The default time between transmissions is device dependent (typically around 15 Hz).
SADR␣*«TimeMsBetweenTransmissions»*	As above, setting the time between transmissions explicitly (in milliseconds).

Responses

SAD␣A␣*«AD Value»*	AD value
SAD␣I	Command understood but currently not executable (device is currently executing another command).
SAD␣S␣*«ErrorCode»*	Code of error occurred

Parameters / Return values

Name	Type	Values	Meaning
TimeMsBetween-Transmissions	int		Time in milliseconds between repeated transmissions
AD Value	int		AD value
ErrorCode	string		Code of error occurred

Comments

- SADR is overwritten by the commands SAD, @ and hardware break and hence cancelled.
- The AD value is formatted as described in the comments of the S command.

Examples

↓	SADR	Send AD values at intervals
↑	SAD␣A␣␣␣␣␣12907	The device sends AD values at intervals
↑	SAD␣A␣␣␣␣␣12908	
↑	SAD␣A␣␣␣␣␣12909	
↑	SAD␣A␣␣␣␣␣12909	
↑	SAD␣A␣␣␣␣␣12987	
↑	SAD␣...	

ZINI – Query / set initial zero range

Description

Use this command to query or set initial zero ranges.

Syntax

Command

ZINI		Query initial zero range.
ZINI␣*«Lower»*[␣*«Upper»*]	V	Set initial zero lower/upper range.

Responses

ZINI␣A␣*«Lower»*␣*«Upper»*	Current initial zero lower and upper ranges.
ZINI␣A	Command successfully performed.
ZINI␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
ZINI␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
Lower/Upper	float	>= 0	Initial zero range in % of nominal capacity

Comments

- If Upper is missed, lower and upper ranges are set symmetrically below and above zero.

Examples

↓	ZINI	Query initial zero ranges.
↑	ZINI␣A␣15.0␣20.0	Lower initial zero range is 15.0% of nominal capacity and upper initial zero range is 20.0% of nominal capacity.

↓	ZINI␣10	Set both lower and upper initial zero ranges to 10% of nominal capacity.
↑	ZINI␣A	Command successfully performed.

English

ZMAN – Query / set manual zero range

Description

Use this command to query or set manual zero ranges.

Syntax

Command

ZMAN		Query manual zero range.
ZMAN␣*«Lower»*[␣*«Upper»*]	V	Set manual zero lower/upper range.

Responses

ZMAN␣A␣*«Lower»*␣*«Upper»*	Current manual zero lower and upper ranges.
ZMAN␣A	Command successfully performed.
ZMAN␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
ZMAN␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
Lower/Upper	float	>= 0	Manual zero range in % of nominal capacity

Comments

- If upper is missed, lower and upper ranges are set symmetrically below and above zero.

Examples

↓	ZMAN	Query manual zero ranges.
↑	ZMAN␣A␣15.0␣20.0	Lower manual zero range is 15.0% of nominal capacity and upper manual zero range is 20.0% of nominal capacity.

↓	ZMAN␣10	Set both lower and upper manual zero ranges to 10% of nominal capacity.
↑	ZMAN␣A	Command successfully performed.

ZTRA – Query / set zero tracking range

Description

Use this command to query or set zero tracking ranges.

Syntax

Command

ZTRA		Query zero tracking range.
ZTRA␣*«Lower»*[␣*«Upper»*]	V	Set zero tracking lower/upper range.

Responses

ZTRA␣A␣*«Lower»*␣*«Upper»*	Current zero tracking lower and upper ranges.
ZTRA␣A	Command successfully performed.
ZTRA␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
ZTRA␣L	Command understood but not executable (incorrect parameter, e.g.device may not support asymmetric ranges).

Parameters / Return values

Name	Type	Values	Meaning
Upper	float	>= 0	Upper/positive zero tracking range in digits
Lower	float	>= 0	Lower/negative zero tracking range in digits

Comments

- If the upper range is missed, lower and upper ranges are set symmetrically below and above zero.
- To disable zero tracking, set ranges to zero.
- Please note that it may be necessary to enable zero-tracking using the ZTRE command.

Examples

↓	ZTRA	Query zero tracking ranges.
↑	ZTRA␣A␣0.5␣0.6	Lower zero tracking range is 0.5 digits and upper zero tracking range is 0.6 digits.

↓	ZTRA␣0.5	Set both lower and upper zero tracking ranges to 0.5d.
↑	ZTRA␣A	Command successfully performed.

See also

→	ZTRE – Query / set zero tracking state

ZTRE – Query / set zero tracking state

Description

Query or set (enable/disable) the state of zero tracking.

Syntax

Command

ZTRE		Query zero tracking state.
ZTRE␣*«On/Off»*	V	Set zero tracking state.

Responses

ZTRE␣A␣*«On/Off»*	Current zero tracking state.
ZTRE␣A	Command successfully performed.
ZTRE␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
ZTRE␣L	Command understood but not executable (incorrect parameter, e.g. the zero tracking ranges are not set correctly).

Parameters / Return values

Name	Type	Values	Meaning
On/Off	integer	0	Zero tracking disabled
		1	Zero tracking enabled

Comments

- The ZTRE command

Examples

↓	ZTRE	Query zero tracking state.
↑	ZTRE␣A␣1	Zero tracking is enabled (=1).

↓	ZTRE␣0	Disable zero tracking.
↑	ZTRE␣A	Command successfully performed.

See also

→	ZTRA – Query / set zero tracking range

9 KCP commands – category “Measurement Memory”

The commands from the category “Measurement Memory” are used to retrieve, store and manage measurement data records within the devices memory.

Attention: In future versions of KCP, some commands of this category could be changed.

MEMQID	Query memory record(s) (in an ID range)
MEMPRT	Record (stable) measurement and send this record
SMEM	Read multiple measurement memory / reports as a table

Measurement memory data fields

The commands described below may refer to certain data fields that can be available in the device memory. A “key” is used to ensure unambiguous mapping between a data field and its value during transmission.

The following data fields are specified explicitly, but this list is not meant to be conclusive. Depending on the device category, there may be more fields available.

Key	Type	Format	Example Values	Meaning
MemID	integer	-	240	(Consecutive) unique memory record identification number (“primary key”).
Gross	float+ unit	see S command *«Weight-Value»␣«Unit»*	␣␣␣-100.00␣g ␣␣␣␣200.00␣g ␣␣␣␣200.0␣␣g	Stored (~stable) gross value in the active unit (with correct rounding).
Net				Stored (~stable) net value in the active unit (with correct rounding as per indication).
Tare				Stored (~stable) tare value in the active unit (with correct rounding)
Range	integer	-	1	Range used for the Net value.
Date	date	YYYY-MM-DD	2020-08-05	Device date of recording.
Time	time	HH:MM:SS	12:34:56	Device time of recording.
Mode	string		T	Active scale mode at time of recording

English

MEMQID – Send memory record(s) (in an ID range)

Description

Retrieve a single memory record or range of memory records specified by memory IDs.

Syntax

Command

MEMQID␣*«ID»*	Returns the memory entry with the specified *ID*.
MEMQID␣*«FromID»*␣*«ToID»*	Returns all memory entries with an ID greater than or equal to *FromID* and less than or equal to *ToID*.

Responses

MEMQID␣B␣MemID␣*«MemID»* MEMQID␣B␣*«Key₁»*␣*«Value₁»* MEMQID␣B␣*«Key₂»*␣*«Value₂»* … MEMQID␣A	Start of memory entry with ID *MemID* Data field with *Key₁* and *Value₁* Data field with *Key₂* and *Value₂* *… more lines …* End of all requested measurement records Key names are padded by spaces to 10 characters.
MEMQID␣I	Command understood but currently not executable (e.g. there is no measurement memory).
MEMQID␣L	Command understood but not executable (incorrect parameter / ID).

Parameters / Return values

Name	Type	Values	Meaning
ID	integer	1, 2, 3, …	ID of memory record to retrieve.
FromID	integer	1, 2, 3, …	ID of first memory record to retrieve.
ToID	integer	1, 2, 3, …	ID of last memory record to retrieve.

Examples

↓	MEMQID␣4711	Retrieve memory record 4711.
↑	MEMQID␣B␣MemID␣␣␣␣␣␣4711 MEMQID␣B␣Date␣␣␣␣␣␣␣2020-08-05 MEMQID␣B␣Time␣␣␣␣␣␣␣15:38:11 MEMQID␣B␣Gross␣␣␣␣␣␣␣␣␣200.00␣g MEMQID␣B␣Net␣␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Tare␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Range␣␣␣␣␣␣1 MEMQID␣A	Data of memory record 4711.

↓	MEMQID␣815␣819	Retrieve memory records between and including ID 815 and 819.
↑	MEMQID␣B␣MemID␣␣␣␣␣␣815 MEMQID␣B␣Date␣␣␣␣␣␣␣2020-08-05 MEMQID␣B␣Time␣␣␣␣␣␣␣15:38:11 MEMQID␣B␣Gross␣␣␣␣␣␣␣␣␣200.00␣g MEMQID␣B␣Net␣␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Tare␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Range␣␣␣␣␣␣1 MEMQID␣B␣MemID␣␣␣␣␣␣816 MEMQID␣B␣Date␣␣␣␣␣␣␣2020-08-05 MEMQID␣B␣Time␣␣␣␣␣␣␣15:38:12 MEMQID␣B␣Gross␣␣␣␣␣␣␣␣␣200.00␣g MEMQID␣B␣Net␣␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Tare␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Range␣␣␣␣␣␣1 MEMQID␣B␣MemID␣␣␣␣␣␣817 MEMQID␣B␣Date␣␣␣␣␣␣␣2020-08-05 MEMQID␣B␣Time␣␣␣␣␣␣␣15:39:18 MEMQID␣B␣Gross␣␣␣␣␣␣␣␣␣200.00␣g MEMQID␣B␣Net␣␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Tare␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Range␣␣␣␣␣␣1 MEMQID␣B␣MemID␣␣␣␣␣␣818 MEMQID␣B␣Date␣␣␣␣␣␣␣2020-10-05 MEMQID␣B␣Time␣␣␣␣␣␣␣18:40:81 MEMQID␣B␣Gross␣␣␣␣␣␣␣␣␣200.00␣g MEMQID␣B␣Net␣␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Tare␣␣␣␣␣␣␣␣␣100.00␣g MEMQID␣B␣Range␣␣␣␣␣␣1 MEMQID␣A	All memory record data between those IDs.

MEMPRT – Record (stable) measurement and send this record

Description

This “save and print” command basically is a combination between the print key / the S command and the MEMQID command. It can be used to stored data in the alibi memory and print correct values in an receipt.

When the device receives the command, it waits for the next “stable” value (criteria are the same as the print key or the S command). When reaching stability, the current data values (e.g. date, time, user, indication, gross, tare, …) are recorded in the measurement memory under a new memory ID (*MemID*).

This memory entry is send back to the host as specified under the MEMQID command.

Syntax

Command

MEMPRT	Record (stable) measurement and send this record.

Responses

MEMPRT␣B␣… MEMPRT␣B␣… MEMPRT␣A	successful, see MEMQID command for details
MEMPRT␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
MEMPRT␣L	Command understood but not executable (incorrect parameter).
MEMPRT␣+	Device in overload range.
MEMPRT␣-	Device in underload range.
MEMPRT␣S␣*«ErrorCode»*	Code of error occurred

Examples

🡻	MEMPRT	“Print and save”
🡹	MEMPRT␣B␣MemID␣␣␣␣␣␣4711 MEMPRT␣B␣Date␣␣␣␣␣␣␣2023-08-05 MEMPRT␣B␣Time␣␣␣␣␣␣␣15:38:11 MEMPRT␣B␣Gross␣␣␣␣␣␣␣␣␣200.00␣g MEMPRT␣B␣Net␣␣␣␣␣␣␣␣␣␣100.00␣g MEMPRT␣B␣Tare␣␣␣␣␣␣␣␣␣100.00␣g MEMPRT␣B␣Range␣␣␣␣␣␣1 MEMPRT␣A	Recorded data to be printed in a receipt.

🡻	MEMPRT	“Print and save”
🡹	MEMPRT␣I	Indication not stable (please refer to S command).

🡻	MEMPRT	“Print and save”
🡹	MEMPRT␣+	Overload (please refer to S command).

See also

🡺	MEMQID – Send memory record

SMEM – Read measurement memory / reports as a table

Description

Sends all available recorded data in an tabular form (separated by spaces).

The header line consists of data field keys and specifies the contents of the value columns.

Syntax

Command

SMEM	Request recorded data.

Responses

SMEM␣A␣START *<header line>* *<data line 1>* *<data line 2>* *<data line 3>* SMEM␣A␣END	For better human readability, the data values in the columns are right or left-aligned, depending on the field type. Values/data strings with spaces shall be quoted/escaped as defined.

Examples

↓	SMEM	
↑	SMEM A START MemID Date Time Mode Indication 1 2016-01-13 12:34:56 T 12.3456 g 2 2016-02-22 12:37:15 P+ 12.3456 kg 3 2016-03-31 12:39:41 P- -1234.56 g SMEM A END	

English

10 KCP commands – category “Digital Platform”

SJ	Send current indication with status
SJR	Send current indication with status and repeat

SJ – Send current indication with status

Description

Send current indication with additional information about the current status.

Syntax

Command

SJ	Send the current indication with status.

Responses

SJR␣*«BM»*␣*«WeightValue»*␣*«Unit»*	Current stable weight value in unit actually set under host unit with current status
SJR␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
SJR␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
PauseMs	integer		Pause between two SJ responses in continuous mode (SJR).
BM	char		Status coded in bit: 2^0 = stable 2^1 = zero range 2^2 = tare 2^5 = reserved 2^6 = always 1
WeightValue	float		Weight value
Unit	string		Current display unit

Examples

↓	SJ	Send the current indication with status.
↑	SJR␣A␣␣␣␣␣129.07␣g	The current weight value is 100.00 g and status is zero range.

↓	SJ	Send the current indication with status.
↑	SJR␣@␣␣␣␣␣100.00␣g	The current weight value is 100.00 g and status is stable.

English

SJR – Send current indication with status and repeat

Description

Repeat to send responses of SJ

Syntax

Command

SJR[␣*«PauseMs»*]	Send the current indication with status continuously. Optional pause between two SJ responses in milliseconds

Responses

SJR␣*«BM»*␣*«WeightValue»*␣*«Unit»*	Current stable weight value in unit actually set under host unit with current status
SJR␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
SJR␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
PauseMs	integer		Pause between two SJ responses in continuous mode (SJR).
BM	char		Status coded in bit: 2^0 = stable 2^1 = zero range 2^2 = tare 2^5 = reserved 2^6 = always 1
WeightValue	float		Weight value
Unit	string		Current display unit

Examples

↓	SJR	Send the current indication with status.
↑	SJR␣A␣␣␣␣␣129.07␣g	The device sends statis with weight values at intervals
↑	SJR␣A␣␣␣␣␣129.08␣g	
↑	SJR␣A␣␣␣␣␣129.09␣g	
↑	SJR␣A␣␣␣␣␣129.09␣g	
↑	SJR␣A␣␣␣␣␣129.07␣g	

English

11 KCP commands – category “Network”

JNEA	Query / set network address (IP) of Ethernet Interface
JNEK	Query / set network mask of Ethernet Interface
JNEG	Query / set gateway address of Ethernet Interface
JNWA	Query / set network address (IP) of WIFI Interface
JNWK	Query / set network mask of WIFI Interface
JNWG	Query / set gateway address of WIFI Interface

JNEA – Query / set network address (IP) of Ethernet Interface

Description

Use this command to query or set the network address (IP) of Ethernet Interface.

Syntax

Command

JNEA	Query the current network address.
JNEA␣*«NetworkAddress»*	Set the current network address.
JNEA␣0.0.0.0	Activate DHCP.

Responses

JNEA␣A␣*«NetworkAddress»*	Current network address (IP).
JNEA␣A	Network address setting successfully performed.
JNEA␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JNEA␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
NetworkAddress	string		Network address (e.g. 192.168.0.1).

Comments

- All three commands, JNEA, JNEK and JNEG have to be entered strict sequentially for completing the setting of the ethernet interface.
- For activating DHCP, the single command “JNEA 0.0.0.0” is sufficient. The network mask and gateway address can me omitted.
- It may take a few seconds to response to the command.

Examples

↓	JNEA	Send current network address.
↑	JNEA␣A␣192.168.0.1	The current network address is 192.168.0.1.

↓	JNEA␣192.168.0.1	Set network address to 192.168.0.1.
↑	JNEA␣A	Set network address setting successfully performed.

↓	JNEA␣0.0.0.0	Activate DHCP setting.
↑	JNEA␣A	Successfully activated DHCP setting.

See also

→	JNEK – Query / set network mask
→	JNEG – Query / set gateway address

JNEK – Query / set network mask of Ethernet Interface

Description

Use this command to query or set the network mask of Ethernet Interface.

Syntax

Command

JNEK	Query the current network mask.
JNEK␣*«NetworkMask»*	Set the current network mask.

Responses

JNEK␣A␣*«NetworkMask»*	Current network mask.
JNEK␣A	Network mask setting successfully performed.
JNEK␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JNEK␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
NetworkMask	string		Network mask (e.g. 255.255.255.0)

Comments

- All three commands, JNEA, JNEK and JNEG have to be entered strict sequentially for completing the setting of the ethernet interface.
- For activating DHCP, the single command “JNEA 0.0.0.0” is sufficient. The network mask and gateway address can me omitted.
- It may take a few seconds to response to the command.

Examples

↓	JNEK	Send current network mask.
↑	JNEK␣A␣255.255.255.0	The current network mask is 255.255.255.0.

↓	JNEK␣255.255.255.0	Set network mask to 255.255.255.0.
↑	JNEK␣A	Set network mask setting successfully performed.

See also

→	JNEA – Query / set network address (IP)
→	JNEG – Query / set gateway address

English

JNEG – Query / set gateway address of Ethernet Interface

Description

Use this command to query or set the gateway address of Ethernet Interface.

Syntax

Command

JNEG	Query the current gateway address.
JNEG␣*«GatewayAddress»*	Set the current gateway address.

Responses

JNEG␣A␣*«GatewayAddress»*	Current gateway address.
JNEG␣A	Gateway address setting successfully performed.
JNEG␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JNEG␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
GatewayAddress	string		Gateway address (e.g. 192.168.0.99)

Comments

- All three commands, JNEA, JNEK and JNEG have to be entered strict sequentially for completing the setting of the ethernet interface.
- For activating DHCP, the single command “JNEA 0.0.0.0” is sufficient. The network mask and gateway address can me omitted.
- It may take a few seconds to response to the command.

Examples

↓	JNEG	Send current gateway address.
↑	JNEG␣A␣192.168.0.99	The current gateway address is 192.168.0.99.

↓	JNEG␣192.168.0.99	Set gateway address to 192.168.0.99.
↑	JNEG␣A	Set gateway address setting successfully performed.

See also

→	JNEA – Query / set network address (IP)
→	JNEK – Query / set network mask

JNWA – Query / set network address (IP) of WIFI Interface

Description

Use this command to query or set the network address (IP) of WIFI Interface.

Syntax

Command

JNWA	Query the current network address.
JNWA␣*«NetworkAddress»*	Set the current network address.
JNWA␣0.0.0.0	Activate DHCP.

Responses

JNWA␣A␣*«NetworkAddress»*	Current network address (IP).
JNWA␣A	Network address setting successfully performed.
JNWA␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JNWA␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
NetworkAddress	string		Network address (e.g. 192.168.0.1).

Comments

- All three commands, JNWA, JNWK and JNWG have to be entered strict sequentially for completing the setting of the WIFI interface.
- For activating DHCP, the single command “JNWA 0.0.0.0” is sufficient. The network mask and gateway address can me omitted.
- It may take a few seconds to response to the command.

Examples

↓	JNWA	Send current network address.
↑	JNWA␣A␣192.168.0.1	The current network address is 192.168.0.1.

↓	JNWA␣192.168.0.1	Set network address to 192.168.0.1.
↑	JNWA␣A	Set network address setting successfully performed.

↓	JNWA␣0.0.0.0	Activate DHCP setting.
↑	JNWA␣A	Successfully activated DHCP setting.

See also

→	JNWK – Query / set network mask
→	JNWG – Query / set gateway address

JNWK – Query / set network mask of WIFI Interface

Description

Use this command to query or set the network mask of WIFI Interface.

Syntax

Command

JNWK	Query the current network mask.
JNWK␣*«NetworkMask»*	Set the current network mask.

Responses

JNWK␣A␣*«NetworkMask»*	Current network mask.
JNWK␣A	Network mask setting successfully performed.
JNWK␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JNWK␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
NetworkMask	string		Network mask (e.g. 255.255.255.0)

Comments

- All three commands, JNWA, JNWK and JNWG have to be entered strict sequentially for completing the setting of the WIFI interface.
- For activating DHCP, the single command “JNWA 0.0.0.0” is sufficient. The network mask and gateway address can me omitted.
- It may take a few seconds to response to the command.

Examples

↓	JNWK	Send current network mask.
↑	JNWK␣A␣255.255.255.0	The current network mask is 255.255.255.0.

↓	JNWK␣255.255.255.0	Set network mask to 255.255.255.0.
↑	JNWK␣A	Set network mask setting successfully performed.

See also

→	JNWA – Query / set network address (IP)
→	JNWG – Query / set gateway address

JNWG – Query / set gateway address of WIFI Interface

Description

Use this command to query or set the gateway address of WIFI Interface.

Syntax

Command

JNWG	Query the current gateway address.
JNWG␣*«GatewayAddress»*	Set the current gateway address.

Responses

JNWG␣A␣*«GatewayAddress»*	Current gateway address.
JNWG␣A	Gateway address setting successfully performed.
JNWG␣I	Command understood but currently not executable (device is currently executing another command, e.g. taring, or timeout as stability was not reached).
JNWG␣L	Command understood but not executable (incorrect parameter).

Parameters / Return values

Name	Type	Values	Meaning
GatewayAddress	string		Gateway address (e.g. 192.168.0.99)

Comments

- All three commands, JNWA, JNWK and JNWG have to be entered strict sequentially for completing the setting of the WIFI interface.
- For activating DHCP, the single command “JNWA 0.0.0.0” is sufficient. The network mask and gateway address can me omitted.
- It may take a few seconds to response to the command.

Examples

🡻	JNWG	Send current gateway address.
🡹	JNWG␣A␣192.168.0.99	The current gateway address is 192.168.0.99.

🡻	JNWG␣192.168.0.99	Set gateway address to 192.168.0.99.
🡹	JNWG␣A	Set gateway address setting successfully performed.

See also

🡺	JNWA – Query / set network address (IP)
🡺	JNWK – Query / set network mask

English

12 KCP commands – category “Model-specific features”

These commands are available for certain instruments only.

Attention: In future versions of KCP, these commands are split into more categories.

PCTW	Percent weighing: Query/set 100% weight
PW	Piece counting: Query/set piece weight
SIM	Set mode of indication (Peak or track mode)

PCTW – Percent weighing: Query/set 100% weight

Description

Use this command to set or query the reference value for percent weighing.

Syntax

Command

PCTW	Query the weight corresponding to 100%
PCTW␣*«WeightValue»*␣*«Unit»*	Sets the weight corresponding to 100%

Responses

PCTW␣A␣*«WeightValue»*␣*«Unit»*	Current 100% reference weight with unit
PCTW␣A	100% reference weight is set
PCTW␣I	Command understood but currently not executable
PCTW␣L	Command understood but not executable (incorrect weight)

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		100% reference weight – numerical value
Unit	string		100% reference weight – unit string

Comments

The balance automatically chances to the percent weighing mode.

Examples

↓	PCTW	Query the weight corresponding to 100%
↑	PCTW␣A␣100.00␣g	The current 100% weight value is 100.00 g

↓	PCTW␣100.00␣g	Set the current 100% weight value to 100.00 g
↑	PCTW␣A	OK

English

PW – Piece counting: Query / set piece weight

Description

Use this command to set or query the piece weight value for piece counting.

Syntax

Command

PW	Query the current piece weight.
PW␣*«WeightValue»*␣*«Unit»*	Set the current piece weight.

Responses

PW␣A␣*«WeightValue»*␣*«Unit»*	Returns the current piece weight.
PW␣A	Current piece weight is set.
PW␣I	Command understood but currently not executable.
PW␣L	Command understood but not executable (incorrect weight).

Parameters / Return values

Name	Type	Values	Meaning
WeightValue	float		Piece weight – numerical value
Unit	string		Piece weight – unit string

Comments

The balance automatically chances to the piece counting mode.

Examples

↓	PW	
↑	PW␣A␣1.2345␣g	The current piece weight is 100.00 g.

↓	PW␣1.2345␣g	Set the current piece weight to 100.00 g.
↑	PW␣A	OK

English

SIM – Set mode of indication (peak or track mode)

Description

Query set the current mode of indication and resets the current peak value.

Syntax

Command

SIM	Query current mode of indication.
SIM␣*«Mode»*	Set current mode of indication and reset the current peak value.

Responses

SIM␣*«Mode»*	Current mode of indication.
SIM␣A	Mode successfully set, current peak value is zero.
SIM␣I	Invalid mode.

Parameters / Return values

Name	Type	Values	Meaning
Mode	string	T	Track mode: indicate the current measurand
		P	Peak mode: only indicate the largest value +/-
		P+	Peak positive mode: only indicate the largest pos. value
		P-	Peak negative mode: only indicate the largest neg. value

Examples

↓	SIM	Query current mode of indication.
↑	SIM␣T	Current mode of indication is track mode.
↑	SIM␣P+	Current mode of indication is peak positive mode.

↓	SIM␣P+	Set current mode of indication to peak positive.
↑	SIM␣A	OK, peak value reset.

↓	SIM␣XYZ	Invalid mode.
↑	SIM␣I	Error.

English

13 KCP command index

This page lists all the page numbers, relevant information to a command can be found.

English