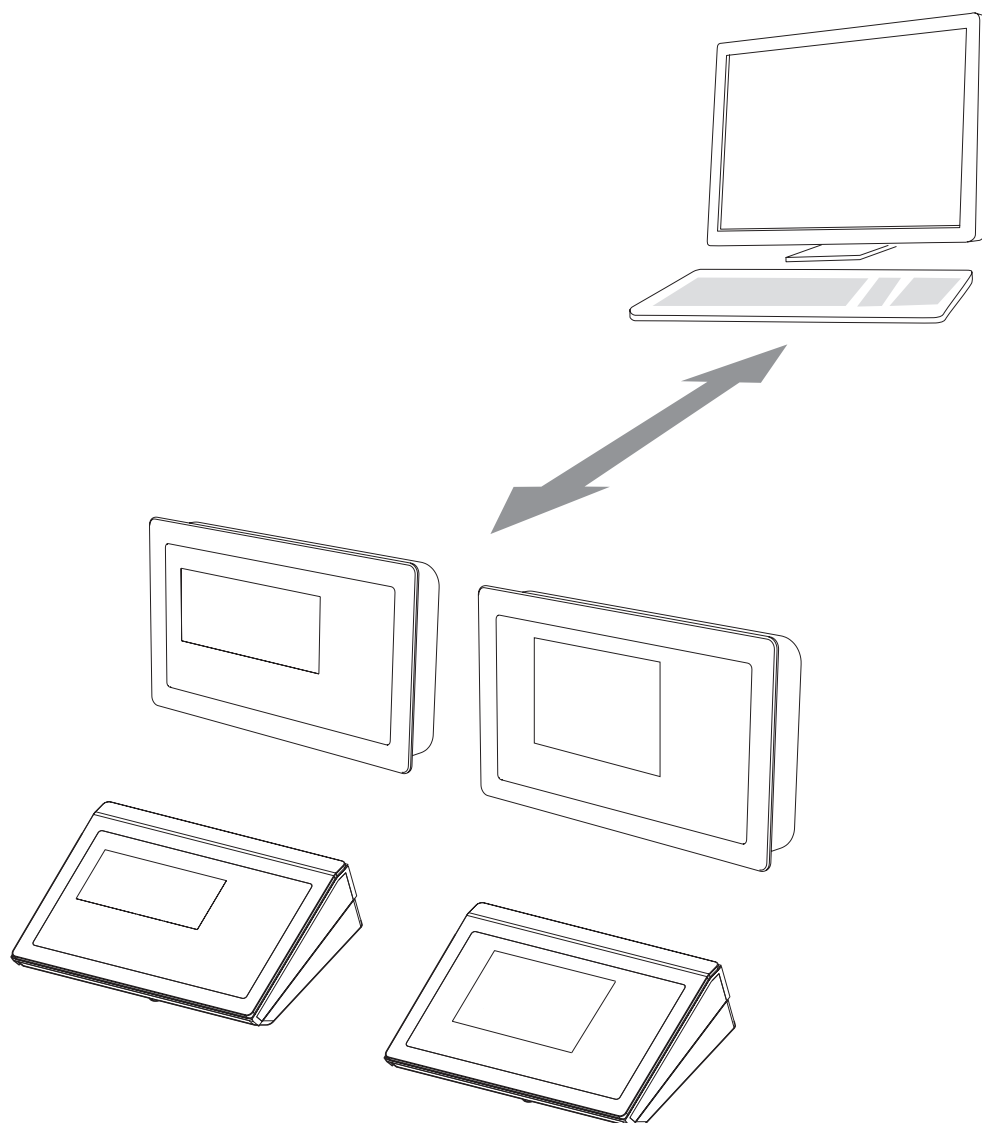


MT-SICS for ICS4__ / ICS6__

Standard Interface Command Set



METTLER TOLEDO

METTLER TOLEDO Service

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use according to these instructions and regular calibration and maintenance by our factory-trained service team ensure dependable and accurate operation to protect your investment. Contact us about a service agreement tailored to your needs and budget.

We invite you to register your product at

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1 Introduction

In measuring weight there are requirements for the readability and maximum capacity of scales and scale ranges from less than one microgram up to several hundred tons. To meet these and other requirements METTLER TOLEDO offers an extensive range of balances and scales. Many of our balances and scales may be integrated into complex computer or data acquisition systems. To enable you to integrate our scales into your system in a simple manner and utilise their capabilities to the fullest, most scale functions are also available as appropriate commands via the data interface.

1.1 Standardisation of the commands

All new METTLER TOLEDO devices launched in the market support the standardized command set "METTLER TOLEDO Standard Interface Command Set" (MT-SICS) which is divided into 4 levels, depending on the functionality of the device:

- MT-SICS level 0 Command set for the simplest scale, e.g., weighing cell
- MT-SICS level 1 Extension of the command set for standard scales, i.e., scales without integrated applications
- MT-SICS level 2 Extension of the command set by the commands specific for a product family
- MT-SICS level 3 Extension of the command set by commands specific for a certain application of a product family

A particular distinguishing feature of this concept is that the commands combined in MT-SICS level 0 and 1 are identical for all scales. Both the simplest weighing scale and a fully expanded weighing work station recognise the commands of MT-SICS level 0 and 1. Investigations of various applications have shown that the vast majority of all system solutions can be handled with the commands of MT-SICS level 0 and 1.

This means for you:

If you restrict yourself to the commands of MT-SICS level 0 and 1, you can expand your system with additional scales from METTLER TOLEDO without having to change your application programs.

1.2 Command overview

1.2.1 MT-SICS level 0 and 1

You can use the commands of MT-SICS level 0 and 1 to perform the following operations via the interface:

- Request weighing results
- Tare the scale and preset the tare weight
- Zero the scale
- Identify MT-SICS implementation
- Identify the scale
- Reset the scale
- Control the display
- Control the keys for operation of the scale.

1.2.2 MT-SICS level 2 and 3

Of course you may use the data interface for all functions available with your current scale or application. These additional functions are collected in the commands of MT-SICS level 2 and 3. When creating your software application, please note that the commands of MT-SICS level 2 have been specially tailored to your product family.

2 Data interchange

Each command received by the device via the data interface is acknowledged by a response from the device to the transmitter. Commands and responses are data strings with a fixed format and will be described in detail in chapters 3 to 6.

2.1 Command formats

Commands sent to the device comprise one or more characters of the ASCII character set. Here, the following must be noted:

- Enter commands only in uppercase.
- The possible parameters of the command must be separated from one another and from the command name by a space (ASCII 32 dec., 10 dec., in this description represented as _).
- The possible input for **text** is a sequence of characters of the 8-bit ASCII character set from 32 dec. to 255 dec.
- **text** must be framed by quotation marks "".
- Each command must be closed by C_{RLF} (ASCII 13 dec., 10 dec.).

The characters C_{RLF}, which can be keyed in using the Enter or Return key of most entry keyboards, are not listed in this description. But it is essential that they are included for communication with the device.

Command format when transmitting weight values

Identification	_	Weight value	_	Weight unit	Framing
Command specification 1...4 characters		1...10 characters		1...3 characters	C _{RLF}

Examples

Tare specification command TA_13.295_kg

Command to write **Hello** in the display D_"Hello"

2.2

Response formats

All responses sent by the device to the transmitter to acknowledge the received command have one of the following formats:

- Response with weight value
- Response without weight value
- Error message

2.2.1

Response format with weight value

ID		Status		Weight value		Weight unit	Framing
Response identification 1...4 characters	Space	1 char.		10 characters		1...3 characters	C _R L _F

Status	Status of the weight value, see description of the commands
--------	---

Weight value Weighing result; shown as number with 10 digits, incl. decimal point and sign (– directly in front of the first digit if value is negative). The weight value appears right-aligned. Preceding zeros are not shown with the exception of the zero to the left of the decimal point.

Example

Response with stable weight value S_S_____0.256_g

2.2.2

Response format without weight value

ID	Status	Parameters	Framing
Response identification 1...4 characters	1 char.	Command dependent response code	C _{RLF}

Example

Response to D_ "Hello"	D_A	Text displayed completely
	D_R	Starting text cut off to fit the remaining text in the display window

2.2.3

Error messages

Error messages always consist of 2 characters and the framing.

ES	Syntax error	The device transmits a syntax error when it cannot process the received characters, e.g., command not present.
----	--------------	--

2.2.4 Response examples for S commands

Command	Level	Response
S	0	S_S_____15.31_kg
SI	0	S_D_____15.17_kg
SU	2	S_S_____0.01531_t
SU	2	S_S_____540.0_oz
SU	2	S_S_____33.76_lb
SX	2	SX_S_G_____15.15_kg___N_____15.15_kg___T_____0.00_kg
SX	2	SX_S_G_____15000_g___N_____15000_g___T_____0_g
SM	2	SM_____0.178_kg_____0.1772
SMI	2	SMD_____0.528_kg___D_____0.5288
SV	2	SV_____12.034_kg_____12.0344
SVI	2	SVD_____0.400_kg___D_____0.3994

Please note the various response formats for S commands.
For more details refer to the command description.

2.3 Tips for the programmer

Command and response

You can improve the dependability of your application software by having your program evaluate the response of the device to a command. The response is the acknowledgement that the device has received the command.

Reset

To be able to start from a determined state when establishing the communication between device and system, you should send a reset command to the device. When the device or system is switched on or off, faulty characters can be received or sent.

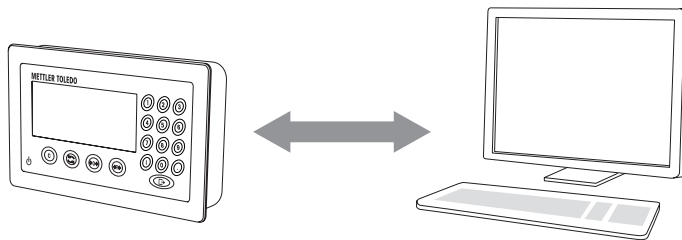
Quotation marks " "

Quotation marks included in the command must always be entered.

Timeout

If stability has not been reached within the timeout interval, the response ..._I is sent and then an unstable weight value. Timeout then starts again from the beginning

2.4 Establishing communication

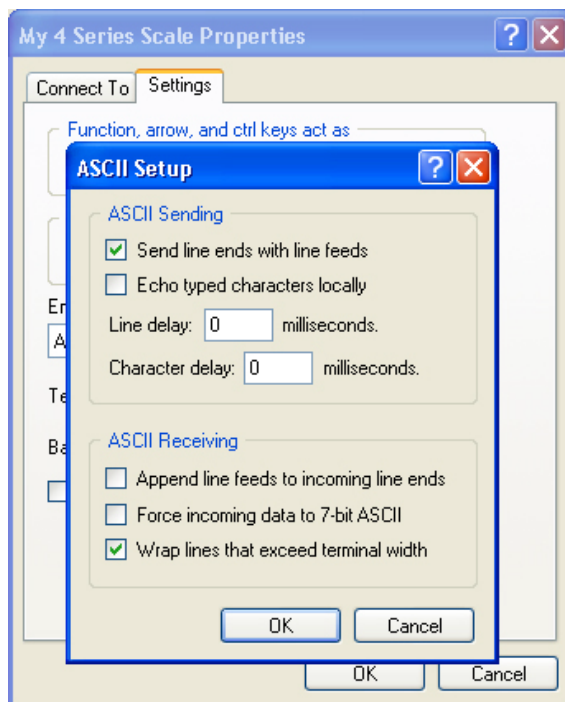


For an appropriate connection with a computer the following settings and configurations have to be made.

- Ensure that device and computer are connected correctly either by RS232, USB Device, Ethernet or WLAN.
- To ensure a proper connection please always use original METTLER TOLEDO accessories.
- For serial connection use the appropriate cable according to the User manual of your device. For connection via USB Device or Ethernet you need cables with M12 connectors which are available as accessories.
- The device has to be set to dialog mode. Verify that communication parameters (baud rate, parity and handshake) are set identically on device and computer.
- For the configuration of your device please refer to the corresponding User manual of your device. Please ensure that your PC terminal program (e.g., HyperTerminal) is configured accordingly.

Note

For HyperTerminal be sure to add the line feed character to the Enter key. Check the appropriate box of HyperTerminal: Settings -> ASCII setup -> Send line ends with line feeds.

**2.5****What if ...?**

- If the communication between computer and device does not function, switch off the device with the power key and switch it on again with the power key. The device must now send the identification string I4, e.g., I4_A_ "1234567".
- If this is not the case, check the following:
 - Are you using the right cables?
 - Is the cable damaged?
 - Is the device set to dialog mode?
 - Do the interface parameters match for both devices?

3 Command overview

Commands in alphabetical order

Command	SICS level	Meaning	ICS425, ICS435	ICS429, ICS439	ICS445	ICS465	ICS4_9-check	ICS629, ICS639	ICS6_9-check	ICS6_9-class	ICS685	Page
AMD	3	Delete Alibi memory data	–	–	•	•	–	•	•	•	•	52
AMR	3	Read out Alibi memory data	–	–	•	•	–	•	•	•	•	52
C2	2	Initiate calibration with external weight	•	–	•	•	–	–	–	–	•	28
C3	2	Initiate calibration with internal weight	•	–	•	•	–	–	–	–	•	28
CLR	3	Clear key / clear the scale	•	•	•	•	•	•	•	•	•	53
CLS	3	Inquiry/setting of class definition values	–	–	–	–	–	–	–	•	–	53
D	1	Scale display	•	•	•	•	•	•	•	•	•	22
DAT	3	Date	•	•	•	•	•	•	•	•	•	55
DDR	3	Delete data record	–	–	•	•	•	–	•	•	–	55
DS	3	Perform short beep	•	•	•	•	•	•	•	•	•	55
DW	1	Weight display	•	•	•	•	•	•	•	•	•	22
GEO	2	Geo value	•	•	•	•	•	•	•	•	•	28
I0	0	MT-SICS commands	•	•	•	•	•	•	•	•	•	16
I1	0	MT-SICS level and versions	•	•	•	•	•	•	•	•	•	17
I2	0	System data	•	•	•	•	•	•	•	•	•	17
I3	0	SW version and type definition	•	•	•	•	•	•	•	•	•	18
I4	0	Serial number	•	•	•	•	•	•	•	•	•	18
I6	3	Scale build parameters	•	•	•	•	•	•	•	•	•	56
I10	3	Device identification	•	•	•	•	•	•	•	•	•	57
I11	3	Terminal type	•	•	•	•	•	•	•	•	•	57
I12	3	Identification 1 (ID1)	•	•	•	•	•	•	•	•	•	58
I13	3	Identification 2 (ID2)	•	•	•	•	•	•	•	•	•	58
I14	3	Identification 3 (ID3)	–	–	•	•	–	•	•	•	•	58
I31	2	Printout header	•	•	•	•	•	•	•	•	•	29

Command	SICS level	Meaning	ICS425, ICS435	ICS429, ICS439	ICS445	ICS465	ICS4_9-check	ICS629, ICS639	ICS6_9-check	ICS6_9-class	ICS685	Page
ICP	2	Printout definitions	•	•	•	•	•	•	•	•	•	30
K	1	Keyboard monitoring	•	•	•	•	•	•	•	•	•	23
LDR	3	Load database record	–	–	–	–	•	–	•	•	–	59
LST	2	Print menu configuration	•	•	•	•	•	•	•	•	•	31
M01	2	Weighing mode	•	•	•	•	•	•	•	•	•	31
M02	2	Stability	•	•	•	•	•	•	•	•	•	32
M03	2	Auto zero function	•	•	•	•	•	•	•	•	•	33
M08	3	Inquiry/setting of display brightness	•	•	•	•	•	•	•	•	•	59
M09	3	Inquiry/setting of display contrast	•	•	•	•	•	–	–	–	•	60
M10	3	Inquiry/setting of display layout	•	•	•	•	•	•	•	•	•	60
M11	3	Inquiry/setting of beeper	•	•	•	•	•	•	•	•	•	61
M12	3	Creating beeper tone	•	•	•	•	•	•	•	•	•	62
M15	3	Language	•	•	•	•	•	•	•	•	•	62
M16	2	Sleep / power off mode	•	•	•	•	•	•	•	•	•	34
M19	2	Inquiry/setting of adjustment weight	•	–	•	•	–	–	–	–	•	35
M21	2	Inquiry/setting of Unit 1	•	•	•	•	•	•	•	•	•	36
MER	3	Meridian	•	•	•	•	•	•	•	•	•	63
P100	2	Print out text on the strip printer	•	•	•	•	•	•	•	•	•	37
P101	2	Print stable weight value	•	•	•	•	•	•	•	•	•	37
P102	2	Print weight value immediately	•	•	•	•	•	•	•	•	•	37
PCS	3	Send number of pieces immediately	–	–	•	•	•	–	•	•	•	63
PMC	3	Checkweighing parameters in counting mode	–	–	–	•	•	–	•	–	•	65
PMI	3	Inquiry of checkweighing parameters	–	–	–	•	•	–	•	–	•	66
PMW	3	Checkweighing parameters in weighing mode	–	–	–	•	•	–	•	–	•	67
PRN	2	Initiate printout	•	•	•	•	•	•	•	•	•	38
PW	3	Inquiry/setting of piece weight	–	–	•	•	•	–	•	•	•	68

Command	SICS level	Meaning	ICS425, ICS435	ICS429, ICS439	ICS445	ICS465	ICS4_9-check	ICS629, ICS639	ICS6_9-check	ICS6_9-class	ICS685	Page
PWR	2	Power On/Off	•	•	•	•	•	•	•	•	•	38
REF	3	Build reference	–	–	•	•	•	–	•	–	•	68
RST	2	Restart scale	•	•	•	•	•	•	•	•	•	38
S	0	Send stable weight value	•	•	•	•	•	•	•	•	•	19
SDA	3	Activate article from a database	–	–	–	•	–	–	–	–	•	68
SDL	3	Device location	•	•	•	•	•	•	•	•	•	69
SET	2	Enter supervisor menu	•	•	•	•	•	•	•	•	•	39
SI	0	Send weight value immediately	•	•	•	•	•	•	•	•	•	19
SIH	2	Send net weight value in high resolution immediately	•	•	•	•	•	•	•	•	•	40
SIR	0	Send weight value immediately and repeat	•	•	•	•	•	•	•	•	•	20
SIRU	2	Send weight value with currently displayed unit immediately and repeat	•	•	•	•	•	•	•	•	•	40
SIS	2	Current net information with the currently displayed unit and with status information	•	•	•	•	•	•	•	•	•	41
SIU	2	Send weight value with currently displayed unit immediately	•	•	•	•	•	•	•	•	•	42
SM	2	Send stable net weight value with range information	•	•	•	•	•	•	•	•	•	42
SM1	3	Average weighing	•	•	•	•	•	•	•	•	•	69
SMI	2	Send net weight value with range information immediately	•	•	•	•	•	•	•	•	•	43
SMIR	2	Send net weight value with range information immediately and repeat	•	•	•	•	•	•	•	•	•	43
SNS	3	Inquiry/setting the active scale	–	–	•	•	–	•	•	•	•	70
SR	1	Send weight value on weight change	•	•	•	•	•	•	•	•	•	24
SRU	2	Send weight value with currently displayed unit on weight channel (send and repeat)	•	•	•	•	•	•	•	•	•	44
ST	2	Send stable weight value after pressing transfer key	•	•	•	•	•	•	•	•	•	45

Command	SICS level	Meaning	ICS425, ICS435	ICS429, ICS439	ICS445	ICS465	ICS4_9-check	ICS629, ICS639	ICS6_9-check	ICS6_9-class	ICS685	Page
STA	3	Presetting of tare weight value in the defined unit	•	•	•	•	•	•	•	•	•	70
SU	2	Send stable weight value with currently displayed unit	•	•	•	•	•	•	•	•	•	45
SV	2	Send stable net weight value	•	•	•	•	•	•	•	•	•	46
SVI	2	Send net weight value immediately	•	•	•	•	•	•	•	•	•	46
SVIR	2	Send net weight value immediately and repeat	•	•	•	•	•	•	•	•	•	47
SWU	2	Switch display unit	•	•	•	•	•	•	•	•	•	47
SX	2	Send stable weighing data	•	•	•	•	•	•	•	•	•	48
SXI	2	Send weighing data immediately	•	•	•	•	•	•	•	•	•	48
SXIR	2	Send weighing data immediately and repeat	•	•	•	•	•	•	•	•	•	49
T	1	Taring	•	•	•	•	•	•	•	•	•	25
TA	1	Inquiry/presetting tare	•	•	•	•	•	•	•	•	•	25
TAC	1	Clear tare	•	•	•	•	•	•	•	•	•	25
TAM	3	Take Away Mode	–	–	•	•	•	–	•	–	•	71
TI	1	Tare immediately	•	•	•	•	•	•	•	•	•	26
TIM	3	Time	•	•	•	•	•	•	•	•	•	71
TST2	2	Initiate test function with external weight	•	–	•	•	–	–	–	–	•	49
TST3	2	Initiate test function with internal weight	•	–	•	•	–	–	–	–	•	50
U	2	Change unit	•	•	•	•	•	•	•	•	•	50
XD12	2	Change mode of active interface temporarily	•	•	•	•	•	•	•	•	•	50
Z	0	Zero	•	•	•	•	•	•	•	•	•	20
ZI	0	Zero immediately	•	•	•	•	•	•	•	•	•	21
@	0	Reset	•	•	•	•	•	•	•	•	•	21

4 Level 0 commands

4.1 Overview

Command	Meaning	Page
I0	Inquiry of all implemented MT-SICS commands	16
I1	Inquiry of MT-SICS level and MT-SICS versions	17
I2	Inquiry of system data	17
I3	Inquiry of terminal software version and type definition	18
I4	Inquiry of serial number	18
S	Send stable weight value	19
SI	Send weight value immediately	19
SIR	Send weight value immediately and repeat	20
Z	Zero	20
ZI	Zero immediately	21
@	Reset	21

4.2 Command description

4.2.1 IO – Inquiry of all implemented MT-SICS commands

Command	IO	Send list of all implemented MT-SICS commands
Response	IO_B_x_"1. command" IO_B_x_"2. command" ... IO_B_x_"last command" IO_A IO_I	x = number of the MT-SICS level the command belongs to Command executed successfully Command understood but not executable at present
Example		
Command	IO	Send list of all implemented MT-SICS commands
Response	IO_B_0_"IO" ... IO_B_1_"D" ... IO_B_3_"CLR" ..." IO_A	Level 0 command IO implemented Level 1 command D implemented Level 3 command CLR implemented Command executed successfully
Comments	<ul style="list-style-type: none"> • The IO 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. This order corresponds to the listing order in this manual. • Level 2 commands are specific for a complete product family. • Level 3 commands are an enhancement of level 2 but only specific for certain applications of the product family. 	

4.2.2 I1 – Inquiry of MT-SICS level and MT-SICS versions

Command	I1	Inquiry of MT-SICS level and MT-SICS versions
Response	I1_A_"x1"_ "x2"_ "x3"_ "x4"_ "x5" I1_I	x1 = 0 Scale with MT-SICS level 0 x1 = 01 Scale with MT-SICS level 0 and 1 x1 = 012 Scale with MT-SICS level 0, 1 and 2 x1 = 03 Scale with MT-SICS level 0 and 3 x1 = 013 Scale with MT-SICS level 0, 1 and 3 x1 = 0123 Scale with MT-SICS level 0, 1, 2 and 3 x1 = 3 Application device with MT-SICS level 3 x2 Version of the SICS0 commands x3 Version of the SICS1 commands x4 Version of the SICS2 commands x5 Version of the SICS3 commands Command understood but not executable
Example		
Command	I1	Inquiry of MT-SICS level and MT-SICS versions
Response	I1_A_"012"_ "2.30"_ "2.20" _ "1.00"	012 Level 0, 1 and 2 implemented 2.30 Level 0, version V2.30 2.20 Level 1, version V2.20 1.00 Level 2, version V1.00
Comments	<ul style="list-style-type: none"> • In the case of MT-SICS level, only fully implemented levels are listed. I.e., if it is not possible to implement all commands of a certain level, the level is not specified. • In the case of MT-SICS version, all levels are specified even those only partially implemented. 	

4.2.3 I2 – Inquiry of system data

Command	I2	Inquiry of system data
Response	I2_A_"text" I2_I	System data as text Command understood but not executable at present
Example		
Command	I2	Inquiry of system data
Response	I2_A_"ICS469_OU_60.18_kg" I2_A_"ICS685_MF_60.18_lb"	ICS469-check ICS685
Comments	<ul style="list-style-type: none"> • The number of characters of text depends on the scale type. • The response contains the name of the instrument, a 2-digit abbreviation of the application and the maximum value of the weight result which can be displayed. 	

4.2.4 I3 – Inquiry of terminal software version and type definition number

Command	I3	Inquiry of terminal software version and type definition number
Response	I3_A_"aa-bb-cc.cc.cc-dd-e"	aa Product family S4 ICS4__ series S6 ICS6__ series bb Weighing interface DC Digicell ID IDNet ??? SicsPro cc.cc.cc Software version dd Application abbreviation BW Basic weighing CT Counting MF Multi functional OU Over/Under Checkweighing SW Straight weighing e Application level 2 ICS_2_ 3 ICS_3_ 4 ICS_4_ 6 ICS_6_ 8 ICS685
	I3_I	Command understood but not executable

Example

Command	I3	Inquiry of terminal software version and type definition number
Response	I3_A_"S4-DC-01.01.00-OU-4"	ICS449
	I3_A_"S6-DC-01.01.00-MF-4"	ICS685
Comments	<ul style="list-style-type: none"> For more information on the software version refer to the corresponding Service Manual. 	

4.2.5 I4 – Inquiry of serial number

Command	I4	Inquiry of serial number
Response	I4_A_"text"	Serial number as text
	I4_I	Command understood but not executable at present
Example		
Command	I4	Inquiry of serial number
Response	I4_A_"1234567"	Serial number of the scale is 1234567
Comments	<ul style="list-style-type: none"> The serial number agrees with that on the model plate and is different for every scale. The serial number can be used e.g., as a device address in a network solution. The response to I4 appears unsolicited after switching on and after the reset command @. 	

4.2.6 S – Send stable weight value

Command	S	Send the current stable net value
Response	S_S_Weight value_Unit S_I S_+ S_-	Current stable weight in the unit currently set for Unit 1 Command understood but not executable at present Scale in overload range Scale in underload range
Example		
Command	S	Send a stable weight value
Response	S_S_100.00_g	The current stable weight value is 100.00 g
Comments	<ul style="list-style-type: none"> The duration of the timeout depends on the scale type. To send the stable weight value in the currently displayed unit, see SU command in level 2. 	

4.2.7 SI – Send weight value immediately

Command	SI	Send the current weight value irrespective of stability
Response	S_S_Weight value_Unit S_D_Weight value_Unit S_I S_+ S_-	Current stable weight in the unit currently set for Unit 1 Dynamic (unstable) weight in the unit currently set for Unit 1 Command understood but not executable at present Scale in overload range Scale in underload range
Example		
Command	SI	Send a stable weight value
Response	S_D_129.07_g	The current dynamic weight value is 129.07 g
Comments	<ul style="list-style-type: none"> The response to the command SI is the last internal weight value (stable or dynamic) before receipt of the command SI. To send the weight value immediately in the currently displayed unit, see SIU command in level 2. 	

4.2.8 SIR – Send weight value immediately and repeat

Command	SIR	Send the weight value repeatedly irrespective of stability
Response	S_S_Weight value_Unit S_D_Weight value_Unit S_I S_+ S_-	Current stable weight in the unit currently set for Unit 1 Dynamic (unstable) weight in the unit currently set for Unit 1 Command understood but not executable at present Scale in overload range Scale in underload range
Example		
Command	SIR	Send current weight values
Response	S_D_____129.07_g S_D_____129.03_g S_S_____129.11_g S_S_____129.51_g S_D_____128.05_g ...	The scale sends stable or unstable weight values continuously.
Comments	<ul style="list-style-type: none"> • SIR is overwritten by all send commands and hardware break and hence cancelled. • To send weight values immediately in the currently displayed unit, see SIRU command in level 2. • The number of weight values per second depends on the scale type. 	

4.2.9 Z – Zero

Command	Z	Zero the scale when stable
Response	Z_A Z_I Z_+ Z_-	Command executed successfully Command understood but not executable Upper limit of zero setting range exceeded Lower limit of zero setting range exceeded
Example		
Command	Z	Zero the scale
Response	Z_A	Command executed successfully
Comments	<ul style="list-style-type: none"> • The tare memory is cleared during zero setting. • The duration of the timeout depends on the scale type. • The zero point determined during switching on is not influenced by this command, i.e., the measurement ranges remain unchanged. 	

4.2.10 ZI – Zero immediately

Command	ZI	Zero the scale irrespective of stability
	ZI_D	Zero setting performed under dynamic conditions
	ZI_S	Zero setting performed under stable conditions
	Z_I	Command understood but not executable
	Z_+	Upper limit of zero setting range exceeded
	Z_-	Lower limit of zero setting range exceeded
Example		
Command	ZI	Zero immediately
Response	ZI_S	Zero setting performed, weight value was stable
Comments	<ul style="list-style-type: none"> • The tare memory is cleared during zero setting. • The zero point determined during switching on is not influenced by this command, i.e., the measurement ranges remain unchanged. • For IDNet scales this command is not available. 	

4.2.11 @ – Reset

Command	@	Reset the scale to the conditions found after switching on, but without a zero setting being performed
Response	IA_A_ "text"	Serial number of the scale, the scale is ready for operation
Example		
Command	@	Reset
Response	IA_A_ "1234567"	Scale is reset, its serial number is 1234567
Comments	<ul style="list-style-type: none"> • All commands awaiting responses are cancelled. • Key control is set to default setting K_1. • The tare memory is reset to zero. • The reset command is always executed. • If the device is on standby, it is switched on. 	

5 Level 1 commands

5.1 Overview

Command	Meaning	Page
D	Scale display	22
DW	Weight display	22
K	Keyboard monitoring	23
SR	Send weight value on weight change	24
T	Taring	25
TA	Inquiry/presetting tare weight value	25
TAC	Clear tare	25
TI	Tare immediately	26

5.2 Command description

5.2.1 D – Scale display

Command	D_"text"	Write text into the display
Response	D_A	text appears centre-justified in the display and is marked with "Remote display"
	D_R	The end of the text appears in the scale display, the start is cut off. "... " at the beginning of the text indicates that text is cut off.
	D_I	Command understood but not executable
	D_L	Command understood but not executable; wrong or missing parameter
Example		
Command	D_"Hello"	Write Hello into the display
Response	D_A	The full text Hello appears in the display
Comments	<ul style="list-style-type: none"> The marking "Remote display" indicates that the scale is not displaying a valid weight value. The maximum number of characters of text visible in the display is 12. The scale display can be cleared by D_"". 	

5.2.2 DW – Weight display

Command	DW	Switch main display to weight mode
Response	DW_A	Main display shows the current weight value
	DW_I	Command understood but not executable

5.2.3

K – Keyboard monitoring

Key codes

The same function has the same key code over all ICS4___/ICS6___ instruments.



Command	K_1	When a key is pressed, execute the corresponding function but do not send the corresponding key code
	K_2	When a key is pressed, do not execute the corresponding function and do not send the corresponding key code
	K_3	When a key is pressed, do not execute the corresponding function but send the corresponding key code
	K_4	When a key is pressed, execute the corresponding function and send the corresponding function code <ul style="list-style-type: none"> • If the corresponding function cannot be executed immediately, the function code K_B_y for the start of the function and K_A_y or K_L_y for the end of the function are sent. • This behaviour applies to taring, zeroing, calibrating, testing, printing etc. • If a function may not be executed, the function code K_L_y is sent.
Response	K_A	Command executed successfully
	K_I	Command understood but not executable
	K_L	Command understood but not executable; wrong or missing parameter

Example for K_3 mode		
Command	K_3	Disable keyboard
Response	K_A K_C_2 K_C_4 K_C_13	K_3 mode enabled Zero key pressed Transfer key pressed Info key pressed
Comments	<ul style="list-style-type: none"> The same function has the same key code over all ICS4__/ICS6__ instruments. 	

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

Command	SR_Preset value_Unit	Send the current stable weight value and then continuously after every weight change greater or equal to the preset value a dynamic value followed by the next stable value Range: 1 d to maximum load If no preset value is entered, the weight change must be at least 12.5% of the last stable value, minimum 30 d
Response	S_S_Weight value_Unit – weight change – S_D_Weight value_Unit – stable – S_S_Weight value_Unit S_I S_L S_+ S_-	Current stable weight in the unit currently set for Unit 1 Dynamic (unstable) weight in the unit currently set for Unit 1 Next stable weight in the unit currently set for Unit 1 Command understood but not executable Command understood but not executable; wrong or missing parameter Scale in overload range Scale in underload range

Example

Command	SR_10.00_g	Send the current stable weight value followed by every load change ≥ 10 g
Response	S_S_100.00_g S_D_115.23_g S_S_200.00_g	Scale stable, 100.00 g loaded Load change Scale stable again, 200.00 g loaded
Comments	<ul style="list-style-type: none"> SR is overwritten by all send commands and hardware break and hence cancelled. The preset value must be entered in the unit currently set under Unit 1. The number of weight values per second depends on the scale type. The duration of the timeout depends on the scale type. 	

5.2.5 T – Taring

Command	T	Tare a stable weight value
Response	T_S_Weight value_Unit	Taring performed, tare weight value in the unit currently set under Unit 1
	T_I	Command understood but not executable
	T_+	Upper limit of taring range exceeded
	T_-	Lower limit of taring range exceeded
Example		
Command	T	Tare
Response	T_S_100.00_g	The scale is tared and has a value of 100.00 g in the tare memory
Comments	<ul style="list-style-type: none"> • The tare memory is overwritten by the new tare weight value. • The duration of the timeout depends on the scale type. • Clearing tare memory: see command TAC. • The weight value is always sent in Unit 1. 	

5.2.6 TA – Inquiry/presetting of tare weight value

Command	TA	Inquiry of a tare weight value
	TA_Weight value_Unit	Entry of a tare preset value in the unit currently set under Unit 1
Response	TA_A_Weight value_Unit	Taring performed with the preset tare value in the unit currently set under Unit 1
	TA_I	Command understood but not executable (scale is currently executing another command, e.g., zero setting, or timeout as stability was not reached)
	TA_L	Command understood but not executable; wrong or missing parameter
Example		
Command	TA_100.00_g	Tare 100.00 g
Response	TA_A_100.00_g	The scale has 100.00 g in the tare memory
Comments	<ul style="list-style-type: none"> • The tare memory will be overwritten by the preset tare weight value. • The keyed-in tare value will be rounded by the scale to the current readability. The response weight value is rounded in Unit 1. • The preset value may be entered in any supported unit. • The taring range is specified to the scale type. 	

5.2.7 TAC – Clear tare value

Command	TAC	Clear tare value
Response	TAC_A	Tare value cleared, 0 is in the tare memory
	TAC_I	Command understood but not executable

5.2.8 TI – Tare immediately

Command	TI	Tare immediately regardless of stability
Response	TI_S_Weight value_Unit	Taring performed with a stable value, tare weight value in the unit currently set under Unit 1
	TI_D_Weight value_Unit	Taring performed with a dynamic value, tare weight value in the unit currently set under Unit 1
	TI_I	Command understood but not executable
	TI_L	Command is not executable, e.g., certified scale version
	TI_+	Upper limit of taring range exceeded
	TI_-	Lower limit of taring range exceeded
Example		
Command	TI	Send current weight values
Response	TI_D_129.07_g	The tare memory holds an unstable (dynamic) weight value
Comments	<ul style="list-style-type: none"> • The tare memory will be overwritten by the new tare weight value. • Caution! If a dynamic tare weight is set, the next weighing is not precise even if the result is stable. This is the reason why the TI command is not allowed with approved scales. • The response tare value is sent in Unit 1. • The taring range is specified to the scale type. • This command is not executable if the scale is approved. 	

6 Level 2 commands

6.1 Overview

Command	Meaning	Page
C2	Initiate calibration with external weight	28
C3	Initiate calibration with internal weight	28
GEO	Inquiry of Geo value	29
I31	Inquiry/setting of printout header	29
ICP	Inquiry/setting of printout definitions	30
LST	Print menu configuration	31
M01	Inquiry/setting of weighing mode	31
M02	Inquiry/setting of stability	32
M03	Inquiry/setting of auto zero function	33
M16	Inquiry/setting of sleep mode and power off mode	34
M19	Inquiry of adjustment weight	35
M21	Inquiry/setting of Unit 1	36
P100	Print out text on the strip printer	37
P101	Send stable weight value to printer channel	37
P102	Send weight value to printer channel immediately	37
PRN	Initiate printout	38
PWR	Power on/off	38
RST	Restart scale	38
SET	Enter supervisor menu	39
SIH	Send net weight value in high resolution immediately	40
SIRU	Send weight value with currently displayed unit immediately and repeat	40
SIS	Inquiry of the current net information with the currently displayed unit and with status information	41
SIU	Send weight value with currently displayed unit immediately	42
SM	Send stable net weight value with range information	42
SMI	Send net weight value with range information immediately	43
SMIR	Send net weight value with range information immediately and repeat	43
SRU	Send weight value with currently displayed unit on weight channel (send and repeat)	44
ST	Send stable weight value after pressing transfer key	45
SU	Send stable weight value with currently displayed unit	45
SV	Send stable net weight value	46

Command	Meaning	Page
SVI	Send net weight value immediately	46
SVIR	Send net weight value immediately and repeat	47
SWU	Switch display unit	47
SX	Send stable weighing data	48
SXI	Send weighing data immediately	48
SXIR	Send weighing data immediately and repeat	49
TST2	Initiate test function with external weight	49
TST3	Initiate test function with internal weight	50
U	Change unit	50
XD12	Change mode of active interface temporarily	50

6.2 Command description

6.2.1 C2 – Initiate calibration with external weight

Command	C2	Initiate external calibration
1st response	C2_B	The calibration procedure has been started
	C2_I	A calibration cannot be performed at present
	C2_L	Calibration operation not possible, e.g. verified scale
2nd response	C2_ "text"	Prompt to unload or load the scale
	C2_A	Calibration has been completed successfully
	C2_L	The calibration procedure was aborted as, e.g., stability not obtained

6.2.2 C3 – Initiate calibration with internal weight

Command	C3	Initiate internal calibration
1st response	C3_B	The calibration procedure has been started
	C3_I	A calibration cannot be performed at present
	C3_L	Calibration operation not possible, e.g. verified scale
2nd response	C3_A	Calibration has been completed successfully
	C3_L	The calibration procedure was aborted as, e.g., stability not obtained

6.2.3 GEO – Inquiry of Geo value

Command	GEO	Inquiry of Geo value
Response	GEO_A_x	Command executed successfully, scale had Geo value x x = 0 ...31
Example		
Command	GEO	Inquiry of Geo value
Response	GEO_A_19	Command executed successfully, scale had Geo value 19

6.2.4 I31 – Inquiry/setting of printout header

Inquiry		
Command	I31_x	Inquiry of header line number x, x = 1 ... 5
Response	I31_A_x_ "text"	text of header line number x
Example		
Command	I31_1	Inquiry of header line 1
Response	I31_A_x_"METTLER TOLEDO"	Command executed successfully, text in line 1 is METTLER TOLEDO
Setting		
Command	I31_x_ "text"	Write text to header line number x, x = 1 ... 5,
Response	I31_A	Command executed successfully
	I31_I	Command understood but not executable
	I31_L	Command understood but not executable; wrong or missing parameter
Example		
Command	I31_1_"METTLER TOLEDO"	Setting of header line number 1
Response	I31_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Up to 24 characters can be entered as text. 	

6.2.5 ICP – Inquiry/setting of printout definitions

Inquiry of printout definitions								
Command	ICP_Templ	Inquiry of the printout definition of template, Templ = 1 ... 5						
Response	ICP_Templ_Line_Data ICP_A (for each line of the template) ICP_A ICP_I ICP_L	Templ 1 ... 5, number of templates Line 1 ... 15, for ICS_2_/ICS_3_ 1 ... 25, for ICS_4_/ICS_6_/ICS685 Data according to the list below Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter						
Setting of printout definitions								
Command	ICP_Templ_Line_Data (for each line of the template)	For parameters see inquiry						
Response	ICP_Templ_Line_Data ICP_A (for each line of the template)	For parameters see inquiry						
Example	Creating the adjacent printout, using template 1	<table><tr><td>Date</td><td>13/07/2011</td></tr><tr><td>Time</td><td>15:03:11</td></tr><tr><td>Net</td><td>15.00 kg</td></tr></table>	Date	13/07/2011	Time	15:03:11	Net	15.00 kg
Date	13/07/2011							
Time	15:03:11							
Net	15.00 kg							
Command / Response	ICP_1_1_2 ICP_A ICP_1_2_3 ICP_A ICP_1_3_15 ICP_A ICP_1_4_5 ICP_A ICP_1_5_0 ICP_A	Date Time New line Net weight End of printout						
Inquiry of the printout data								
Command	ICP_?	Inquiry of the available printout data						
Response	ICP_x_>_"Data" (for each available printout item)	x number of data x = 0 Not used, i.e. end of the printout "Data" content of the printout item						
Example	Inquiry of the printout data							
Command / Response	ICP_? ICP_0_>_"Not used" ICP_1_>_"Header" ICP_2_>_"Date" ...	Inquiry of the available printout data Listing of the available printout data						
Comments	<ul style="list-style-type: none">• To enable the scale to print, the selected template needs to be assigned in the Communication menu to the selected interface COMx.• The number of available items is depending on the application level.							

6.2.6 LST – Print menu configuration

Command	LST	Print out the menu settings on all channels which are set to a print mode
Response	LST_A	Command executed successfully
Comments	<ul style="list-style-type: none"> A printer has to be connected to an interface correctly. 	

6.2.7 M01 – Inquiry/setting of weighing mode

Inquiry		
Command	M01	Inquiry of weighing mode
Response	M01_A_x	x = 0 Universal x = 1 Dosing
	M01_L	Command understood but not executable; wrong or missing parameter
Setting		
Command	M01_x	Setting of weighing mode, for parameter x see inquiry
Response	M01_A	Command executed successfully
	M01_I	Command understood but not executable
	M01_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M01_0	Setting of weighing mode to normal
Response	M01_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Changing the weighing mode is not possible if the device is approved. Equivalent setting in the menu: Scale → Filter → Process. 	

6.2.8

M02 – Inquiry/setting of stability

Inquiry		
Command	M02	Inquiry of stability
Response	M02_A_x	x = 0 fast x = 1 standard x = 2 precise
	M02_I	Command understood but not executable
	M02_L	Command understood but not executable; wrong or missing parameter
Setting		
Command	M02_x	Setting of stability, for parameter x see inquiry
Response	M02_A	Command executed successfully
	M02_I	Command understood but not executable
	M02_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M02_2	Setting of measurement quality to precise
Response	M02_A	Command executed successfully
Comments	<ul style="list-style-type: none"> • Equivalent setting in the menu: Scale → Filter → Stability. 	

6.2.9

M03 – Inquiry/setting of auto zero function

Inquiry		
Command	M03	Inquiry of auto zero function
Response	M03_A_x	x = 0 auto zero off x = 1 auto zero 0.5 d x = 2 auto zero 1 d x = 3 auto zero 2 d x = 4 auto zero 5 d x = 5 auto zero 10 d
	M03_I	Command understood but not executable
	M03_L	Command understood but not executable; wrong or missing parameter
Setting		
Command	M03_x	Setting of auto zero, for parameter x see inquiry
Response	M03_A	Command executed successfully
	M03_I	Command understood but not executable
	M03_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M03_1	Switching on auto zero function
Response	M03_A	Command executed successfully
Comments	<ul style="list-style-type: none"> For approved scales, Auto zero is set to 0.5 d and cannot be changed. Equivalent setting in the menu: Scale → Zero → AZM. 	

6.2.10

M16 – Inquiry/setting of sleep mode or power off mode

Inquiry		
Command	M16	Inquiry of sleep mode or power off mode
Response	M16_A_x	x = 0 inactive
		x = 1 1 minute
		x = 2 3 minutes
		x = 3 5 minutes
		x = 4 15 minutes
		x = 5 30 minutes
	M16_I	Command understood but not executable
	M16_L	Command understood but not executable; wrong or missing parameter
Setting		
Command	M16_x	Setting of sleep mode or power off mode, for parameter x see inquiry
Response	M16_A	Command executed successfully
	M16_I	Command understood but not executable
	M16_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M16_1	Setting of sleep mode or power off mode to 1 minute
Response	M16_A	Command executed successfully
Comments	<ul style="list-style-type: none"> • A device with mains adapter or external power supply switches to sleep mode if the weight display is 0 and the device is not operated within the set time. • A device with battery turns off completely if the weight display is 0 and the device is not operated within the set time. • Operating the device includes pressing a key, significant change in weight, or interface commands. • Equivalent setting in the menu: Terminal → Device → Sleep. 	

6.2.11**M19 – Inquiry/setting of adjustment weight**

Inquiry		
Command	M19	Inquiry of the adjustment weight
Response	M19_A_Value_Unit	Value and unit of the adjustment weight
	M19_I	Command understood but not executable
	M19_L	Command understood but not executable; wrong or missing parameter
Setting		
Command	M19_Value_Unit	Setting of the adjustment weight in the defined unit of the scale, see Inquiry
Response	M19_A	Command executed successfully
	M19_I	Command understood but not executable
	M19_L	Command understood but not executable; wrong or missing parameter

6.2.12

M21 – Inquiry/setting of Unit 1

Inquiry		
Command	M21	Inquiry of unit
Response	M21_B_Designation_x	Designation = 0 Unit 1 Designation = 1 Currently displayed unit x = 0 g x = 1 kg x = 2 t x = 7 lb x = 8 oz x = 9 lb-oz
	M21_I	Command understood but not executable
	M21_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M21	Inquiry of unit
Response	M21_B_0_0 M21_B_1_0	Unit 1 = g Displayed unit = g
Setting		
Command	M21_Designation_x	Setting of unit, for Designation and parameter x see inquiry
Response	M21_A M21_I M21_L	Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	M21_0_1	Setting of Unit 1 to kg
Response	M21_A	Command executed successfully
Comments	<ul style="list-style-type: none"> The M21 setting is allowed only for non-approved scales. 	

6.2.13 P100 – Print out text on the strip printer

Command	P100_ "text"	Print out text on the strip printer (24 characters/line)
Response	P100_A P100_I P100_L	Command executed successfully Command understood but not executable Text could not be printed, as, e.g., a printer is not switched on or connected
Example		
Command	P100_ "Hello"	Print out Hello on the printer
Response	P100_A	Printout has been started
Comments	<ul style="list-style-type: none"> Up to 24 characters can be entered as text. The command P100_ "text" has no influence on the function of the printer as a record printer. Printer has to be connected correctly. 	

6.2.14 P101 – Send stable weight value to printer channel

Command	P101	Send stable weight value to printer channel, corresponds to command S
Response	P101_A P101_I P101_L	Command executed successfully Command understood but not executable Command not executable as no printer connected
Example		
Command	P101	A stable weight value appears on the printout, e.g., 200.01 g
Response	P101_A	Command executed successfully
Comments	<ul style="list-style-type: none"> The command P101 has no influence on the function of the printer as a record printer. The duration of the timeout depends on the scale type. 	

6.2.15 P102 – Send weight value to printer channel immediately

Command	P102	Send weight value to printer channel, irrespective of stability, corresponds to command SI
Response	P102_A P102_I P102_L	Command executed successfully Command understood but not executable Command not executable as no printer connected
Example		
Command	P102	A stable or dynamic weight value appears on the printout, e.g., D 200.01 g
Response	P102_A	Command executed successfully
Comments	<ul style="list-style-type: none"> The command P102 has no influence on the function of the printer as a record printer. 	

6.2.16 PRN – Initiate printout

Command	PRN	Initiate printout on the printer channel
Response	PRN_A	Command executed successfully
	PRN_I	Command understood but not executable
Example		
Command	PRN	Initiate printout
Response	PRN_A	Command executed successfully
Comments	<ul style="list-style-type: none"> • The printer has to be connected to an interface correctly. • The printout can be configured in the Communication menu or using the ICP command. • The PRN command generates the same printout as the Transfer key. 	

6.2.17 PWR – Switching off

Command	PWR_O	Switch device off
Response	PWR_A	Device has been switched off successfully
	PWR_I	Command understood but not executable
	PWR_L	Command understood but not executable; wrong or missing parameter

6.2.18 RST – Restart scale

Command	RST	Restart the scale
Response	I4_A_ "text"	I4 command responds with serial number after switching on
	RST_I	Command understood but not executable
Example		
Command	RST	Restart the scale
Response	I4_A_ "1234567"	Scale restarted
Comments	<ul style="list-style-type: none"> • The RST command works similar to switching the scale off and on. 	

6.2.19

SET – Enter supervisor menu

Command	SET	Enter the menu with supervisor rights
Response	Scale	Menu was entered with supervisor rights The menu navigation is done with the commands: n, b, y and e n = no navigation next entry, change selection forward b = back navigation previous entry, change selection backward y = yes navigation enter menu, confirm selection e = end navigation navigate to end of menu
Example: Setting sleep mode (Terminal → Device → Sleep)		
Command	SET	Enter menu with supervisor rights
Response	__Scale	Menu entered
Command	n	No navigation
Response	__Application	Next menu block
Command	n	No navigation
Response	__Terminal	Next menu block
Command	y	Enter TERMINAL menu
Response	__Device	TERMINAL menu entered
Command	y	Enter DEVICE menu
Response	__Language	DEVICE menu entered
Command	n	No navigation
Response	__Sleep	Next menu block
Command	y	Enter SLEEP menu
Response	__Off	SLEEP menu entered, current setting is OFF
Command	n	Change setting of SLEEP
Response	__1_minute	Setting changed to 1 min
Command	y	Confirm selection
Response	__Sleep	Back one level
Command	e	Go to end of menu
Response	__End Save?	End of menu reached
Command	y	Confirm saving of new settings and leave menu
Response	I4_A_ "1234567"	Menu was left, 1234567 = serial number
Comments	<ul style="list-style-type: none"> The navigation commands need not to be finished by C_RL_F. 	

6.2.20**SIH – Send net weight value in high resolution immediately**

Command	SIH	Send net weight in high resolution irrespective of stability
Response	H_S_Weight value_Unit	Stable net weight in high resolution and in the unit currently set for Unit 1
	H_D_Weight value_Unit	Dynamic net weight in high resolution and in the unit currently set for Unit 1
	H_I	Command understood but not executable
	H_+	Scale in overload range
	H_-	Scale in underload range
Example		
Command	SIH	Send a stable weight value
Response	H_S_1.99982_kg	Current net weight in high resolution is 1.99982 kg and stable
Comments	<ul style="list-style-type: none"> Like SI command. High resolution data, i.e., highest possible precision of the connected scale. 	

6.2.21**SIRU – Send weight value with currently displayed unit immediately and repeat**

Command	SIRU	As the SIR command, but send the weight value immediately with the currently displayed unit and repeat
Response	S_S_Weight value_Unit	Current stable weight in the currently displayed unit
	S_D_Weight value_Unit	Dynamic (unstable) weight in the currently displayed unit
	S_I	Command understood but not executable
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	SIRU	Send current weight value in the currently displayed unit
Response	S_D_129.07_lb S_S_129.11_lb ...	The scale sends stable or unstable weight values continuously in the currently displayed unit
Comments	<ul style="list-style-type: none"> SIRU is overwritten by all send commands and hardware break and hence cancelled. The number of weight values per second depends on the scale type. 	

SIS – Inquiry of the current net information

Example

6.2.23 SIU – Send weight value with currently displayed unit immediately

Command	SIU	As the SI command, but send the weight value immediately with the currently displayed unit
Response	S_S_Weight value_Unit S_D_Weight value_Unit S_l S_+ S_-	Current stable weight in the currently displayed unit Dynamic (unstable) weight in the currently displayed unit Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SIU	Send current weight value in the currently displayed unit
Response	S_D_____129.07_lb S_S_____129.11_lb ...	The scale sends stable or unstable weight values continuously in the currently displayed unit

6.2.24 SM – Send stable net weight value with range information

Command	SM	Send the current stable net value with range information
Response	Sr____Net value_Unit____HR value SMI SMI+ SMI-	r = M Single or Multi Interval scale r = 1, 2, 3 Current range of a Multi Range scale Command not executable Scale in overload range Scale in underload range
Example		
Command	SMI	Send current net weight value with range information immediately
Response	S1_____0.025_kg_____0.0253	Range 1 active, stable net weight is 0.025 kg and stable high resolution net weight is 0.0253 kg
Comments	• See section 2.2.4 for response examples for S commands.	

6.2.25 SMI – Send net weight value with range information immediately

Command	SMI	Send the current net value with range information irrespective of stability
Response	Sr_ Net value_Unit_ HR value SrD_ Net value_Unit_D_ HR value SMI SMI+ SMI–	Stable weight Dynamic weight r = M Single or Multi Interval scale r = 1, 2, 3 Current range of a Multi Range scale D D if weight dynamic, blank if stable HR value High resolution net weight value Command not executable Scale in overload range Scale in underload range
Example		
Command	SMI	Send current net weight value with range information immediately
Response	S1D_0.025_kg_D_0.0253	Range 1 active, stable net weight is 0.025 kg and stable high resolution net weight is 0.0253 kg
Comments	<ul style="list-style-type: none"> See section 2.2.4 for response examples for S commands. 	

6.2.26 SMIR – Send net weight value with range information immediately and repeat

Command	SMIR	Send the current net value with range information repeatedly irrespective of stability
Response	Sr_ Net value_Unit_ HR value SrD_ Net value_Unit_D_ HR value SMI SMI+ SMI–	Stable weight Dynamic weight r = M Single or Multi Interval scale r = 1, 2, 3 Current range of a Multi Range scale D D if weight dynamic, blank if stable HR value High resolution net weight value Command not executable Scale in overload range Scale in underload range
Example		
Command	SMI	Send current net weight value with range information immediately and repeatedly
Response	S1D_0.025_kg_D_0.0253 S1D_0.029_kg_D_0.0291 S1_0.025_kg_0.0253 ...	The scale sends stable or unstable weight values with range information continuously
Comments	<ul style="list-style-type: none"> See section 2.2.4 for response examples for S commands. 	

6.2.27

SRU – Send weight value with currently displayed weight unit on weight change (send and repeat)

Command	SRU_Preset value_Unit	As the SR command, but send the current stable weight value with the currently displayed unit and then continuously after every weight change greater or equal to the preset value a dynamic value followed by the next stable value Range: 1 d to maximum load If no preset value is entered, the weight change must be at least 12.5% of the last stable value, minimum 30 d
Response	S_S_Weight value_Unit – weight change – S_D_Weight value_Unit – stable – S_S_Weight value_Unit S_I S_L S_+ S_-	Current stable weight in the unit currently set for Unit 1 Dynamic (unstable) weight in the unit currently set for Unit 1 Next stable weight in the unit currently set for Unit 1 Command understood but not executable Command understood but not executable; wrong or missing parameter Scale in overload range Scale in underload range
Example		
Command	SRU_10.00_g	Send the current stable weight value followed by every load change ≥ 10 g
Response	S_S_100.00_g S_D_115.23_g S_S_200.00_g ...	Scale stable, 100.00 g loaded Load change Scale stable again, 200.00 g loaded
Comments	<ul style="list-style-type: none"> SRU is overwritten by all send commands and hardware break and hence cancelled. 	

6.2.28

ST – Send stable weight value after pressing transfer key

Inquiry		
Command	ST	Inquiry of current status of the ST function
Response	ST_A_x	x = 0 Function inactive, do not send weight value when the transfer key is pressed x = 1 Function active until restart of the scale or sending the restart command, weight will be sent when pressing the transfer key x = 2 Function permanently active, even after restart of the device, weight will be sent when pressing the transfer key
	ST_I	Command understood but not executable
Setting		
Command	ST_x	Set transfer mode, for parameter x see inquiry
Response	ST_A	Command executed successfully
Example		
Command	ST_1	Activate ST function
Response	ST_A	ST function activated
	– transfer key pressed – S_S_____123.456_g	Current net weight is 123.456 g
Comments	<ul style="list-style-type: none"> ST_0 is the factory setting (function inactive). The duration of the timeout depends on the scale type. 	

6.2.29

SU – Send stable weight value with currently displayed unit

Command	SU	As the S command, but send the current stable weight value with the currently displayed unit
Response	S_S_Weight value_Unit	Current stable weight in the currently displayed unit
	S_I	Command understood but not executable
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	SU	Send a stable weight value
Response	S_S_____100.00_g	The current stable weight value is 100.00 g
Comments	<ul style="list-style-type: none"> The duration of the timeout depends on the scale type. 	

6.2.30 SV – Send stable net weight value

Command	SV	Send the current stable net value
Response	SV__Weight value_Unit__HR value SV_I SV_+ SV_-	Weight value Net weight value HR value High resolution net weight value Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SV	Send a stable net weight value
Response	SV_____1.995_kg_____1.9972	Stable net weight value is 1.995 kg, stable high resolution net weight value ist 1.9972 kg
Comments	<ul style="list-style-type: none"> See section 2.2.4 for response examples for S commands. 	

6.2.31 SVI – Send net weight value immediately

Command	SVI	Send the current stable net value irrespective of stability
Response	SV__Weight value_Unit__HR value SVD_Weight value_Unit_D_HR value SV_I SV_+ SV_-	Stable weight Dynamic weight D D if weight dynamic, blank if stable Weight value Net weight value HR value High resolution net weight value Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SVI	Send current net weight value
Response	SVD_____0.826_kg____D_____0.8263	The dynamic net weight value is 0.826 kg and the dynamic high resolution net weight value is 0.8263 kg
Comments	<ul style="list-style-type: none"> See section 2.2.4 for response examples for S commands. 	

6.2.32 SVIR – Send stable net weight value immediately and repeat

Command	SVIR	Send the current stable net value irrespective of stability
Response	SV_Weight value_Unit_ HR value SVD_Weight value_Unit_D_ HR value SV_I SV_+ SV_-	Stable weight Dynamic weight D D if weight dynamic, blank if stable Weight value Net weight value HR value High resolution net weight value Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SVIR	Send current net weight value
Response	SVD_0.826_kg_D_0.8263 SV_0.876_kg_0.8764 ...	Dynamic and stable net weight value and high resolution net weight value
Comments	<ul style="list-style-type: none"> SVIR is overwritten by all send commands and hardware break and hence cancelled. See section 2.2.4 for response examples for S commands. 	

6.2.33 SWU – Switch display unit

Command	SWU	Switch to next display unit
Response	SWU_A SWU_I	Command executed successfully Command understood but not executable
Comments	The available units depend on <ul style="list-style-type: none"> the setting of Unit 1, Unit 2 and Unit roll (On/Off). the approval status of the scale. 	

6.2.34 SX – Send stable weighing data

Command	SX	Send current stable weighing data with the currently displayed unit
Response	SX_S_x1_x2_x3_x4_x5_x6 SX_I SX_+ SX_-	Current stable gross, net and tare weights x1 = gross (G_...) x2 = unit of gross weight x3 = net (N_...) x4 = unit of net weight x5 = tare (T_...) x6 = unit of tare weight Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SX	Inquiry of current stable weighing data
Response	SX_S_G_2.00030_kg_N_1.99970_kg_T_0.00060_kg Gross weight = 2.00030 kg, Net weight = 1.99970 kg, Tare weight = 0.00060 kg	
Comments	<ul style="list-style-type: none"> No response until weight is stable. The duration of the timeout depends on the scale type. See section 2.2.4 for response examples for S commands. 	

6.2.35 SXI – Send weighing data immediately

Command	SXI	Send current weighing data immediately with the currently displayed unit
Response	SX_S_x1_x2_x3_x4_x5_x6 SX_D_x1_x2_x3_x4_x5_x6 SX_I SX_+ SX_-	Current stable gross, net and tare weights Current unstable (dynamic) gross, net and tare weights x1 ... x6: see command SX Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SXI	Send the current weighing data immediately
Response	SX_D_G_2.00030_kg_N_1.99970_kg_T_0.00060_kg Dynamic weight values SX_S_G_2.00033_kg_N_1.99972_kg_T_0.00061_kg Stable weight values	
Comments	<ul style="list-style-type: none"> Like SX command, but response at any time (stable or unstable result). See section 2.2.4 for response examples for S commands. 	

6.2.36 SXIR – Send weighing data immediately and repeat

Command	SXIR	Send current weighing data immediately with the currently displayed unit and repeat
Response	SX_S_x1_x2_x3_x4_x5_x6 SX_D_x1_x2_x3_x4_x5_x6 SX_I SX_+ SX_-	Current stable gross, net and tare weights Current unstable (dynamic) gross, net and tare weights x1 ... x6: see command SX Command understood but not executable Scale in overload range Scale in underload range
Example		
Command	SXIR	Send weighing data immediately and repeat
Response	SX_D_G_2.00030_kg_N_1.99970_kg_T_0.00060_kg Dynamic weight values SX_S_G_2.00033_kg_N_1.99972_kg_T_0.00061_kg Stable weight values ...	
Comments	<ul style="list-style-type: none"> • Like SXI command, but response at any time (stable or unstable result). • SXIR is overwritten by all send commands and hardware break and hence cancelled. • The number of weight values per second depends on the scale type. • See section 2.2.4 for response examples for S commands. 	

6.2.37 TST2 – Initiate test function with external weights

Command	TST2	Start test function with external weight
1st response	TST2_B TST2_I TST2_L	Test procedure has been started Command understood but not executable Command understood but not executable; no second response will follow
2nd response	TST2_"text" TST2_A_"WeightValue_Unit" TST2_I	Prompt to unload or load the balance Test procedure completed successfully. The weight value with unit corresponds to the deviation from the specified value displayed in the top line after the test. Test procedure has been aborted

6.2.38 TST3 – Initiate test function with internal weights

Command	TST3	Start test function with internal weight
1st response	TST3_B	Test procedure has been started
	TST3_I	Command understood but not executable
	TST3_L	Command understood but not executable; no second response will follow
2nd response	TST3_A_ "WeightValue_Unit"	Test procedure completed successfully. The weight value with unit corresponds to the deviation from the specified value displayed in the top line after the test.
	TST3_I	Test procedure has been aborted

6.2.39 U – Change unit

Command	U_Unit	Change unit, unit = g, kg, t, lb, oz, lb-oz (analog scales only)
	U	Change back to Unit 1
Response	U_A	Command executed successfully
	U_I	Command understood but not executable
	U_L	Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> Not all units are allowed if the scale is approved. 	

6.2.40 XD12 – Change mode of the interface which receives this command temporarily

Command	XD12_x	Change mode of the interface which receives this command temporarily x = 0 Dialog mode x = 1 Print mode
Response	XD12_A	Command executed successfully
	XD12_I	Command understood but not executable
	XD12_L	Command understood but not executable; wrong or missing parameter
Example		
Command	XD12_0	Change the interface mode to dialog mode
Response	XD12_A	Interface mode successfully changed
Comments	<ul style="list-style-type: none"> The change will only be temporarily. I.e., after entering the menu or switching the device off and on again, the previous setting will be active again. 	

7 Level 3 commands

7.1 Overview

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7.2 Command description

7.2.1 AMD – Delete Alibi memory data

Command	AMD	Delete all Alibi data
Response	AMD_A	Command executed successfully
	AMD_I	Command understood but not executable, e.g., because of an approved scale
Comment	The AMD command is only executable when the device is not approved.	

7.2.2 AMR – Read out Alibi memory data

Inquiry		
Command	AMR_OPT	OPT stands for the following command options: OPT = ALL Send all Alibi data OPT = FIRST Send the first (oldest) Alibi record OPT = LAST Send the last (newest) Alibi record OPT = ID_x Send Alibi record number x OPT = ID_x_y Send Alibi records number x to number y OPT = DT_DD/MM/YYYY Send Alibi records from date DD/MM/YYYY OPT = DT_DD/MM/YYYY_DD/MM/YYYY Send Alibi records from date DD/MM/YYYY to date DD/MM/YYYY OPT = SEP_x Define data separator (factory setting: ";")
Response	AMR_A	Command executed successfully
	AMR_I	Command understood but not executable
Example		
Command	AMR_ID_1_100	Read out Alibi records 1 to 100
Response	AMR_A 000001;10/04/2012;11:45:17;N;0.728;kg;T;0.000;kg;G;0.728;kg;S;1 000002;10/04/2012;11:53:48;N;1.238;kg;T;0.127;kg;G;1.365;kg;S;1 ... 000100;13/04/2010;09:17:32;N;0.138;kg;T;0.000;kg;G;0.138;kg;S;1 AMR_B	
Comments	<ul style="list-style-type: none"> It is not possible to combine several options. The separator is stored persistently The send order is as follows: Record no. – Date – Time – Net –Tare – Gross – Scale no. – Item 7 – Item 8 – Item 9 – Item 10 Items 7 to 10 are send inside of quotation marks ". For empty items, "" will be sent. 	

7.2.3 CLR – Execute the clear key / clear the scale

Command	CLR	Execute the clear key
Response	CLR_A	Command executed successfully
	CLR_I	Command understood but not executable

7.2.4 CLS – Inquiry/setting of class definition values

Inquiry of class definition values		
Command	CLS	Inquiry of the current class definition values
Response	CLS_B_1_"Class Name"_Start Value_Unit CLS_B_2_"Class Name"_Start Value_Unit ... CLS_B_n_"Class Name"_Start Value_Unit CLS_C_ART_"Article Name"_Article Number_"Description Field" CLS_E_End Value <div style="text-align: right;">class number n = 1 ... 12 for each defined class the class name and the start value are sent.</div>	
	CLS_I	Command understood but not executable
Example		
Command	CLS	Inquiry of the current class definition values
Response	CLS_B_1_"Class AA"_0.000_kg CLS_B_2_"Class A"_0.500_kg ... CLS_B_8_"Class F"_2.500_kg CLS_C_ART_"Lobster"_0123456_"Item" CLS_E_6.009_kg	
Comments	<ul style="list-style-type: none"> • If no class names are set, the standard setting Class 1 ... Class 12 is sent. • If no end value is set, max. capacity + 9 d is used. • Article name, article number and description field are sent regardless if these fields were activated/deactivated in the setup menu. 	

Setting start values		
Command	CLS_NO_1_"Class Name"_"Start Value"_"Unit" CLS_NO_2_"Class Name"_"Start Value"_"Unit" ... CLS_NO_n_"Class Name"_"Start Value"_"Unit"	
Response	CLS_A CLS_I CLS_L	Start values have been set Command understood but not executable Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none">• All classes must be entered using the same unit.• The order 1, 2, ... 12 must be followed.• If there are some classes defined but no end value and class 1 is defined again, all the other classes defined earlier will be deleted.	
Setting article name, article number and description field		
Command	CLS_ART_"Article Name"_"Article Number"_"Description Field"	
Response	CLS_A CLS_I CLS_L	Article name, article number and/or description field have been set Command understood but not executable Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none">• Empty strings are allowed, so it is possible to use a single field, two fields or all fields.	
Setting end value		
Command	CLS_E_Value_"Usage"	Usage = A activate class definition Usage = 1 ... 100 save class definition in the data storage
Response	CLS_A CLS_I CLS_L	Start values have been set Command understood but not executable Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none">• If no end value is set, max. capacity + 9 d is used.• The end value uses the same unit as the start values of the classes.	

7.2.5 DAT – Inquiry/setting of the date

Inquiry		
Command	DAT	Inquiry of the current date of the device
Response	DAT_A_dd_mm_yyyy	Represents the date in the format day_month_year if the Date & Time format is EU
	DAT_A_mm_dd_yyyy	Represents the date in the format day_month_year if the Date & Time format is US
	DAT_I	Command understood but not executable
Example		
Command	DAT	Inquiry of the current date of the device
Response	DAT_A_25_05_2011	Current date of the device is May 25th 2011 with Date & Time format = EU
Setting		
Command	DAT_dd_mm_yyyy	Set the date in the format day_month_year if the Date & Time format is EU
	DAT_mm_dd_yyyy	Set the date in the format day_month_year if the Date & Time format is US
Response	DAT_A	Date has been set
	DAT_I	Command understood but not executable
	DAT_L	Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> The set date is retained even after the reset command @. 	

7.2.6 DDR – Delete data record from data storage

Command	DDR_x	Delete record number x from data storage x = 1 ... 500
Response	DDR_A	Command executed successfully
	DDR_I	Command understood but not executable
	DDR_L	Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> Empty records are also deleted, DDR_A is sent. 	

7.2.7 DS – Perform short beep

Command	DS	Perform short beep
Response	DS_A	Command executed successfully
	DS_I	Command understood but not executable

7.2.8

I6 – Inquiry of the scale build parameters

Command	I6	Inquiry of the scale build parameters
Response	I6_IB_P I6_MAX_Max value_Unit I6_MIN_Min value_Unit I6_TH_pt value_Unit I6_Ri_resolu_Unit/maxval_Unit I6_IE_nd IE	ICS scale family Max value = maximum capacity Min value = minimum capacity pt value = maximum preset tare Ri: Range information Ri = 0 Single Range Ri = 1, 2, 3 Partial Range, Interval info resolu: resolution of Range/Interval Ri maxval: max value of Range/Interval Ri: nd: approved resolution nd = 0 d non approved scale nd = 1 d display value equals verification interval nd = 10 d class II scale with extended resolution End of parameters

Example

Command	I6	Inquiry of scale build parameters
Response	I6_IB_P I6_MAX_15.000_kg I6_MIN_0.002_kg I6_TH_15.000_kg I6_R1_0.002_kg/6.000_kg I6_R2_0.005_kg/15.000_kg I6_E_0d IE	ICS scale family Max. capacity 15.000 kg Min. load 0.002 kg Max. preset tare 15.000 kg Range 1 resolution 0.002 kg / Max. value 6.000 kg Range 2 resolution 0.005 kg / Max. value 15.000 kg Non approved scale End of parameters

7.2.9 I10 – Inquiry/setting of device identification

Inquiry		
Command	I10	Inquiry of the device identification
Response	I10_A_ "text" I10_I	text represents the device identification Command understood but not executable
Example		
Command	I10	Inquiry of the device identification
Response	I10_A_ "My scale"	Device identification is My scale
Setting		
Command	I10_ "text"	Set the text for device identification
Response	I10_A I10_I I10_L	Device identification has been set Command understood but not executable Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> Up to 40 characters can be entered as text. The set device identification is retained even after the reset command @. The scale can display, transfer and print the device identification. 	

7.2.10 I11 – Inquiry of the model designation

Command	I11	Inquiry of model designation of the weighing terminal
Response	I11_A_ "text" I11_I	text represents the model designation The model designation cannot be transferred at present as another operation is taking place
Example		
Command	I11	Inquiry of model designation
Response	I11_A_ "ICS429a-BB30/c"	The scale is an ICS429a-BB30/c
Comments	<ul style="list-style-type: none"> The scale can display the device name. The device name has a max. length of 40 characters. The device name cannot be changed. 	

7.2.11

I12 / I13 / I14 – Inquiry/setting of identification 1 / 2 / 3 (ID1 / ID2 / ID3)

Inquiry		
Command	I12 I13 I14	Inquiry of identification 1 (ID1) Inquiry of identification 2 (ID2) Inquiry of identification 3 (ID3)
Response	I12_A_"text" I13_A_"text" I14_A_"text" I12_I I13_I I14_I	text represents the current identification 1 text represents the current identification 2 text represents the current identification 2 Identification 1 cannot be transferred at present Identification 2 cannot be transferred at present Identification 3 cannot be transferred at present
Example		
Command	I12	Inquiry of identification 1 (ID1)
Response	I12_A_"123456"	Identification 1 is 123456
Setting		
Command	I12_"text" I13_"text" I14_"text"	Set the text for ID1 Set the text for ID2 Set the text for ID3
Response	I12_A I13_A I14_A	Identification 1 has been set Identification 2 has been set Identification 3 has been set
	I12_I I13_I I14_I	Identification 1 cannot be set at present Identification 2 cannot be set at present Identification 3 cannot be set at present
	I12_L I13_L I14_L	Identification 1 is too long or wrong parameter Identification 2 is too long or wrong parameter Identification 3 is too long or wrong parameter
Comments	<ul style="list-style-type: none"> The scale can display, transfer and print the identifications. Up to 40 characters can be entered. 	

7.2.12 LDR – Load database record

Command	LDR_x	Load database record x (x = 1 ... max. number of database records)
Response	LDR_A LDR_I LDR_L	Command executed successfully, database record loaded Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	LDR_38	Load database record 38
Response	LDR_A	Command executed successfully, database record 38 loaded (if it contains parameters)
Comments	<ul style="list-style-type: none"> Command LDR loads and activates stored checkweighing parameters including tare values. 	

7.2.13 M08 – Inquiry/setting of display brightness

Inquiry		
Command	M08	Inquiry of display brightness
Response	M08_A_x M08_I M08_L	Display brightness, x = 10 ... 100, in steps of 10 Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	M08	Inquiry of display brightness
Response	M08_A_50	Display brightness is 50%
Setting		
Command	M08_x	Setting display brightness, x = 10 ... 100, in steps of 10
Response	M08_A M08_I M08_L	Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> % values are only approximate values. 	

7.2.14

M09 – Inquiry/setting of display contrast

Inquiry		
Command	M09	Inquiry of display contrast
Response	M09_A_x	Display contrast, x = 10 ... 100, in steps of 10
	M09_I	Command understood but not executable
	M09_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M09	Inquiry of display contrast
Response	M09_A_50	Display contrast is 50%
Setting		
Command	M09_x	Setting display contrast, x = 10 ... 100, in steps of 10
Response	M09_A	Command executed successfully
	M09_I	Command understood but not executable
	M09_L	Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> % values are only approximate values. 	

7.2.15

M10 – Inquiry/setting of main display layout

Inquiry		
Command	M10	Inquiry of main display layout
Response	M10_A_x	<div>ICS4__</div> <div>ICS6__</div> <div>x = 0</div> <div>Default</div> <div>Default</div> <div>x = 1</div> <div>Big font mode</div> <div>3-line mode</div> <div>x = 2</div> <div>3-line mode</div> <div>Color mode</div> <div>x = 3</div> <div>Color mode</div> <div>–</div>
	M10_I	Command understood but not executable
	M10_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M10	Inquiry of main display layout
Response	M10_A_1	ICS4__: Big font mode is the currently set main display layout ICS6__: 3-line mode is the currently set main display layout

Setting		
Command	M10_x	Setting the main display layout For parameter x see inquiry
Response	M10_A	Command executed successfully
	M10_I	Command understood but not executable
	M10_L	Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> Equivalent setting in the menu: Terminal → Device → Display → Layout. 	

7.2.16 M11 – Inquiry/setting of beeper

Inquiry		
Command	M11	Inquiry of beeper status
Response	M11_A_x	x = 0 beeper off x = 1 beeper on
	M11_I	Command understood but not executable
	M11_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M11	Inquiry of beeper status
Response	M11_0	Beeper status is off
Setting		
Command	M11_x	Setting beeper x = 0 beeper off x = 1 beeper on
Response	M11_A	Command executed successfully
	M11_I	Command understood but not executable
	M11_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M11_1	Setting beeper to on
Response	M11_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Equivalent setting in the menu: Terminal → Device → Beeper. 	

7.2.17 M12 – Creating beeper tone

Command	M12_x	Creating beeper tone x = 1 short beep x = 2 medium beep x = 3 long beep
Response	M12_A M12_L M12_I	Command executed successfully Wrong or missing parameter Command understood but not executable
Example		
Command	M12_1	Creating a short beep
Response	M12_A	Short beep performed

7.2.18 M15 – Inquiry/setting of the language

Inquiry		
Command	M15	Inquiry of the language
Response	M15_A_x M15_I M15_L	x = 0 English x = 1 German x = 2 French x = 3 Spanish x = 4 Italian x = 5 Portuguese x = 6 Japanese x = 7 US English x = 8 Chinese Command understood but not executable Command understood but not executable; wrong or missing parameter
Setting		
Command	M15_x	Setting of the language, for parameter x see inquiry
Response	M15_A M15_I M15_L	Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	M15_1	Setting the language to German
Response	M15_A	Setting performed

7.2.19 MER – Inquiry of meridian

Command	MER	Inquiry of meridian
Response	MER_A_xM MER_I	x = A Ante Meridian x = P Post Meridian Command understood but not executable
Example		
Command	MER	Inquiry of meridian
Response	MER_A_PM	Post meridian
Comments	<ul style="list-style-type: none"> To use the MER command, the US date format has to be active. 	

7.2.20 PCS – Send number of pieces immediately

Command	PCS	Send number of pieces immediately
Response	PCS_S_Pieces PCS_D_Pieces PCS_I	Number of pieces with stable weight Number of pieces with dynamic weight Command understood but not executable
Example		
Command	PCS	Inquiry of number of pieces
Response	PCS_S_100	Number of pieces is 100, stable weight value
	PCS_D_101	Number of pieces is 101, dynamic weight value
Comments	<ul style="list-style-type: none"> This command is available for ICS449-check and ICS469-check. 	

7.2.21

PMx – Inquiry/setting of Over/Under Checkweighing parameters

There are three different PM commands available to define or inquire the Over/Under Checkweighing parameters.

PMC	Define Over/Under Checkweighing parameters in counting mode
PMI	Inquiry of Over/Under Checkweighing parameters
PMW	Define Over/Under Checkweighing parameters in weighing mode

- Both the default tolerances and the default tolerance mode will not be considered.
- The PMW/PMC command works regardless if an Over/Under Checkweighing soft key is activated or not.
- The command will automatically switch the application mode into the desired mode. E.g., if PMC is sent, the application will switch to Over/Under Checkweighing in counting mode after successfully performing the command.
- The command will not work if the setup menu is entered.
- If the parameter Tare is passed, an existing tare/pretare value will be overwritten considering legal pretare restrictions.
- The parameter APW is optional. If no APW is sent, the active APW is used. If no APW is sent and no APW is active, "PMC_L" is sent as response.
- If the average piece weight is passed, the parameter Unit is used as unit of the APW and (if passed) the pretare value.
- The parameter Unit is taken for all kinds of weight values (Target, Tolerances, APW, Tare). For the PMC command, the parameter Unit is optional. It is needed if the parameter APW and/or Tare is passed.

Possible units are: kg, g, lb, oz, t

- To directly store the data set within the record storage, the optional parameter RecordNo is sent as last parameter. Existing records will be overwritten without questioning. When the data set is stored within the record storage, it is not directly set as active data set!
- Optional parameters:

To detect optional value parameters securely it is necessary to send a parameter identifier. For the unit this is not necessary because the unit can be identified by itself. For the value parameters the following identifiers are used:

Tare	T
RecordNo	R
AveragePW	A
DescriptionField	D
Unit	U (optional only for PMC command)

The identifier is written in front of the value itself, separated by a blank.

Example: PMW_..._T_0.500_...

- The optional parameter "DescriptionField" can be printed, transferred and displayed.

Units of the individual parameters

Mode	W (Weighing)			C (Counting)	
Tolerance type	ABS	REL	PER	ABS	REL
Value 1	Unit	Unit	Unit	Pieces	Pieces
Value 2	Unit	Unit	%	Pieces	Pieces
Value 3	–	Unit	%	–	Pieces
Tare	Unit			Unit	
APW	–			Unit	

PMC – Setting of Over/Under Checkweighing parameters in counting mode

Setting		
Command	PMC_ABS_Low_High[_U_Unit][_A_APW][_T_Tare][_D_"Descr.Field"][_R_RecordNo.] [_NA_"ArticleName"][_NO_"ArticleNumber"] Setting of Over/Under Checkweighing parameters with tolerance type Absolute PMC_REL_Target_TolMinus_TolPlus[_U_Unit][_A_APW][_T_Tare][_D_"Descr.Field"][_R_RecordNo.] [_NA_"ArticleName"][_NO_"ArticleNumber"] Setting of Over/Under Checkweighing parameters with tolerance type Relative	
Response	PMC_A PMC_I PMC_L	Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	PMC_ABS_78_81_U_g_A_3.45 PMC_REL_100_1_2_U_kg_A_0.00225_R_25	Setting of absolute Over/Under Checkweighing parameters Low value 78 pieces High value 81 pieces APW 3.45 g Setting of relative Over/Under Checkweighing parameters and storing in record 25 Target 100 pieces Tolerance – 1 piece Tolerance + 2 pieces APW 0.00225 kg
Response	PMC_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Items in brackets [] are optional. 	

PMI – Inquiry of Over/Under Checkweighing parameters

Inquiry		
Command	PMI	
Response	PMI_Mode_TolType_Unit_Value1_Value2[_Value3][_T_Tare][_A_APW][_D_"Descr.Field"] [_NA_"ArticleName"][_NO_"ArticleNumber"]	<div> <div>Mode</div> <div>TolType</div> <div>Unit</div> <div>Value 1</div> <div>Value 2</div> <div>Value 3</div> <div>APW</div> <div>Descr.Field</div> </div> <div> <div>W (Weighing) or C (Counting)</div> <div>ABS (Absolute), REL (relative) or PER (Percent)</div> <div>Unit used for weight values like target values, tolerances, Tare, APW etc.</div> <div>Low or Target value</div> <div>High or TolMinus value</div> <div>TolPlus value (not in Absolute mode)</div> <div>Average Piece Weight</div> <div>Description field</div> </div>
	PMI_I	Command understood but not executable
Example		
Command	PMI	Inquiry of the Over/Under Checkweighing parameters
Response	PMI_W_ABS_kg_1.050_1.090	<div> <div>Mode</div> <div>Tolerance type</div> <div>Low value</div> <div>High value</div> </div> <div> <div>Weighing</div> <div>Absolute</div> <div>1.05 kg</div> <div>1.09 kg</div> </div>
Command	PMI	Inquiry of the Over/Under Checkweighing parameters
Response	PMI_C_REL_kg_200_2_3 _A_0.00142_D_"Article B66"	<div> <div>Mode</div> <div>Tolerance type</div> <div>Target</div> <div>Tolerance –</div> <div>Tolerance +</div> <div>APW</div> <div>Description field</div> </div> <div> <div>Counting</div> <div>Relative</div> <div>200 pieces</div> <div>2 pieces</div> <div>3 pieces</div> <div>0.00142 kg</div> <div>"Article B66"</div> </div>
Comments	<ul style="list-style-type: none"> Items in brackets [] are optional. 	

PMW – Setting of Over/Under Checkweighing parameters in weighing mode

Setting		
Command	PMW_ABS_Low_High_Unit[_T_Tare][_D_"Descr.Field"][_R_RecordNo.][_NA_"ArticleName"] [_NO_"ArticleNumber"] Setting of Over/Under Checkweighing parameters with tolerance type Absolute PMW_REL_Target_TolMinus_TolPlus_Unit[_T_Tare][_D_"Descr.Field"][_R_RecordNo.] [_NA_"ArticleName"][_NO_"ArticleNumber"] Setting of Over/Under Checkweighing parameters with tolerance type Relative PMW_PER_Target_TolMinus_TolPlus_Unit[_T_Tare][_D_"Descr.Field"][_R_RecordNo.] [_NA_"ArticleName"][_NO_"ArticleNumber"] Setting of Over/Under Checkweighing parameters with tolerance type Percent	
Response	PMW_A PMW_I PMW_L	Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	PMW_ABS_2.45_2.66_kg	Setting of absolute Over/Under Checkweighing parameters Low value 2.45 kg High value 2.66 kg
	PMW_ABS_2.45_2.66_kg _T_0.67_R_10	Setting of absolute Over/Under Checkweighing parameters with tare weight, will be stored as record no. 10 Low value 2.45 kg High value 2.66 kg Tare 0.67 kg RecordNo. 10
	PMW_REL_2.3_0.03_0.04_kg _D_"Article 56"	Setting of relative Over/Under Checkweighing parameters Target 2.3 kg Tolerance – 0.03 kg Tolerance + 0.04 kg Description field "Article 56"
	PMW_PER_2.3_1.2_0.9_kg	Setting of percent Over/Under Checkweighing parameters Target 2.3 kg Tolerance – 1.2% Tolerance + 0.9%
Response	PMW_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Items in brackets [] are optional. 	

7.2.22**PW – Inquiry/setting of piece weight**

Inquiry		
Command	PW	Inquiry of piece weight
Response	PW_A_Value_Unit	Current piece weight value
	PW_L	Piece counting application not active or wrong parameter
	PW_I	Command understood but not executable
Setting		
Command	PW_Value_Unit	Setting piece weight in the available unit
Response	PW_A_Value_Unit	Piece weight value has been set
	PW_I	Command understood but not executable
	PW_L	Command understood but not executable; wrong or missing parameter
Example		
Command	PW_1.78_g	Setting the piece weight
Response	PW_A_1.780000_g	Command executed successfully
Comments	<ul style="list-style-type: none"> The unit of the response depends on the current active display unit. <ul style="list-style-type: none"> If display unit is kg, the response will be in g. If display unit is lb or oz, the response will be in the same unit. 	

7.2.23**REF – Build reference**

Command	REF_x	Build reference with reference number x
	REF	Build reference with the stored reference size
Response	REF_A	Reference was built successfully
	REF_–	Reference weight too small. No new reference was built.
	REF_I	Command understood but not executable
Example		
Command	REF_100	Build reference with reference size 100
Response	REF_A	Reference built

7.2.24**SDA – Activate article from the database**

Command	SDA_"text"	Activate article "text" from the database
Response	SDA_A	Article activated
	SMA_I	Command understood but not executable
	SMA_L	Command understood but not executable

7.2.25

SDL – Inquiry/setting of device location

Inquiry		
Command	SDL	Inquiry of device location
Response	SDL_A_"text"	Text represents the device location
	SDL_I	Command understood but not executable
Setting		
Command	SDL_"text"	Setting of device location
Response	SDL_A	Command executed successfully
	SDL_I	Command understood but not executable
	SDL_L	Command understood but not executable; wrong or missing parameter
Example		
Command	SDL_"2nd Floor, Room 316"	Setting the device identification to 2nd Floor, Room 316
Response	SDL_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Up to 40 characters can be entered. The scale can display, transfer and print the device location. 	

7.2.26

SM1 – Perform average weighing

Command	SM1	Perform average weighing
Response	SM1_A	Average weighing started
	SM1_*_Weight value_Unit	Average weighing result
	SM1_I	Command understood but not executable
	SM1_L	Command understood but not executable; remote scale active or average weighing inactive
Example		
Command	SM1	Perform average weighing
Response	SM1_*_1.034_kg	The result of the average weighing is 1.034 kg
Comments	<ul style="list-style-type: none"> Average weighing has to be active to run the SM1 command. 	

7.2.27

SNS – Inquiry/setting of the active scale

Inquiry		
Command	SNS	Inquiry of the active scale
Response	SNS_x	x = active scale
	SNS_I	Command understood but not executable
Setting		
Command	SNS_x	Setting of the active scale x, for x see inquiry
Response	SNS_A	Command executed successfully
	SNS_I	Command understood but not executable
	SNS_L	Command understood but not executable; wrong or missing parameter

7.2.28

STA – Presetting of tare weight value in the defined unit

Command	STA_Weight value_Unit	Presetting of tare value in the defined unit
Response	STA_A_Weight value_Unit	Current tare weight value in the unit currently set under Unit 1
	STA_L	Command understood but not executable; remote scale active or average weighing inactive
	STA_I	Command understood but not executable
Example		
Command	STA_100.00_g	Setting a tare value of 100.00 g
Response	STA_A_100.00_g	The scale has 100.00 g in the tare memory
Comments	<ul style="list-style-type: none"> • The tare memory will be overwritten by the preset tare weight value. • The input tare value will be automatically rounded by the scale to the current readability. • If no unit is entered, the currently displayed unit will be taken. • The taring range is specified to the scale type. 	

7.2.29

TAM – Inquiry/setting of Take Away mode

Inquiry		
Command	TAM	Inquiry of Take Away mode
Response	TAM_A_x	x = 0 Take Away mode inactive x = 1 Take Away mode active
Setting		
Command	TAM_x	Setting of Take Away mode, for parameter x see inquiry
Response	TAM_A TAM_I TAM_L	Command executed successfully Command understood but not executable Command understood but not executable; wrong or missing parameter
Example		
Command	TAM_1	Activate Take Away mode
Response	TAM_A	Take Away mode activated

7.2.30

TIM – Inquiry/setting of the time

Inquiry		
Command	TIM	Inquiry of the current time of the weighing terminal
Response	TIM_A_hh_mm_ss TIM_A_hh_mm_ss_mer TIM_I	For Date & Time format = EU For Date & Time format = US, mer = AM or PM Command understood but not executable
Example		
Command	TIM	Inquiry of time
Response	TIM_A_15_56_11	The current time is 15 hours, 56 minutes and 11 seconds in EU format
	TIM_A_03_56_11_PM	The current time is 3 hours PM, 56 minutes and 11 seconds in US format
Setting		
Command	TIM_hh_mm_ss TIM_hh_mm_ss_mer	Set time if Date & Time format = EU Set time if Date & Time format = US, mer = AM or PM
Response	TIM_A TIM_I TIM_L	Time has been set, clock running Command understood but not executable Command understood but not executable; wrong or missing parameter
Comments	<ul style="list-style-type: none"> The time setting is retained even after the reset command @. 	

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