

Standard Interface Command Set



METTLER TOLEDO Service

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 - ➔ **Periodic Calibration Maintenance:** A Calibration Service Agreement provides on-going confidence in your weighing process and documentation of compliance with requirements. We offer a variety of service plans that are scheduled to meet your needs and designed to fit your budget.

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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 utilize their capabilities to the fullest, most scale functions are also available as appropriate commands via the data interface.

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1.1 Standardization 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. a 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 recognize 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 levels 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 device
- Reset the scale
- Control the display
- Control the keys for operation of the scale.

1.2.2 MT-SICS levels 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.

2.2.2 Response format without weight value

ID	Space	Status	Space	Parameters	Framing
Response identification 1...4 characters	_	1 char.	_	Command dependent response code	C _r L _f

Example

Tare specification command	TA_13.295_kg
Command to write Hello in the display	D_"Hello"
Response to D_"Hello"	D_A

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_____15.31_kg
SU	2	S_S_____540.0_oz
SU	2	S_S_____33.76_lb
SU	2	S_S_____54.23_t
SX	2	SX_S_G_____15.15_kg___N_____15.15_kg___T_____0.00_kg
SX	2	SX_S_G_____15015_g___N_____15015_g___T_____0_g
SM	2	SM_____0.178_kg_____0.1772
SMI	2	SMD_____0.528_kg___D_____0.5278
SV	2	SV_____10.178_kg_____10.1776
SVI	2	SVD_____0.528_kg___D_____0.5278

Note

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 restart 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.
- 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?
 - Do the interface parameters match for both devices?

3 IND400 Command overview

Command	Level	Reference
CLR	3	[CLR - Execute the clear key / clear the scale ▶ Page 30]
D	1	[D - Scale display ▶ Page 14]
DW	1	[DW - Weight display ▶ Page 14]
DAT	3	[DAT - Inquire/set system date ▶ Page 30]
DIO	3	[DIO - Inquire input states / set output states ▶ Page 30]
DY	3	[DY - Target parameters ▶ Page 14]
GEO	2	[GEO - Inquire Geo value ▶ Page 19]
I0	0	[I0 - Inquire all implemented MT-SICS commands ▶ Page 9]
I1	0	[I1 - Inquire MT-SICS level and level version ▶ Page 9]
I2	0	[I2 - Inquire device data ▶ Page 9]
I3	0	[I3 - Inquire terminal software version ▶ Page 10]
I4	0	[I4 - Inquire serial number ▶ Page 10]
I6	0	[I6 - Inquiry of scale build parameters ▶ Page 10]
I10	3	[I10 - Inquire/set device identification ▶ Page 31]
I11	3	[I11 - Inquire model designation ▶ Page 32]
I12	3	[I12 / I13 / I14 - Query/set identifications ID1 / ID2 / ID3 ▶ Page 32]
I13		
I14		
I51	2	[I51 - Power-on time, including short interruption ▶ Page 32]
K	1	[K - Keyboard monitoring ▶ Page 15]
LDR	3	[LDR - Load material ▶ Page 33]
MO8	3	[MO8 - Inquire/set display brightness ▶ Page 33]
M15	3	[M15 – Language ▶ Page 34]
M21	2	[M21 - Inquire/set weight unit ▶ Page 19]
MER	3	[MER - Inquire meridian ▶ Page 33]
PCS	3	[PCS - Send number of pieces immediately ▶ Page 34]
PMC	3	[PMC - Set Over/under checkweighing parameters in counting mode ▶ Page 35]
PMI	3	[PMI - Inquire Over/under checkweighing parameters in weighing mode ▶ Page 36]
PMW	3	[PMW - Set Over/under checkweighing parameters in weighing mode ▶ Page 37]
PRN	2	[PRN - Initiate printout ▶ Page 19]
PW	3	[PW - Inquire/set the piece weight ▶ Page 37]
PWR	2	[PWR - Switch off ▶ Page 20]
REF	3	[REF - Counting: build reference ▶ Page 38]
RST	2	[RST - Restart ▶ Page 20]
RO	2	[RO - Enable user input ▶ Page 20]
R1	2	[R1 - Disable user input ▶ Page 20]
S	0	[S - Send stable weight value ▶ Page 11]
SI	0	[SI - Send weight value immediately ▶ Page 11]
SIH	2	[SIH - Send net value in high resolution immediately ▶ Page 20]
SIR	0	[SIR - Send weight value immediately and repeat ▶ Page 12]
SIRU	2	[SIRU - Send weight value with currently displayed unit immediately and repeat ▶ Page 21]
SIS	2	[SIS - Send current net information ▶ Page 21]
SIU	2	[SIU - Send weight value with currently displayed unit immediately ▶ Page 22]
SIX1	2	[SIX1 - Current gross, net, tare values ▶ Page 22]

Command	Level	Reference
SIX2	2	[SIX2 - Current gross, net, tare, HighResNet values ▶ Page 23]
SIX3	2	[SIX3 - Current gross, net, tare, HighResNet, MaxResNet values ▶ Page 23]
SM1	3	[SM1 - Perform animal weighing ▶ Page 38]
SM	2	[SM - Send stable net value with range information ▶ Page 24]
SMI	2	[SMI - Send net value with range information immediately ▶ Page 24]
SMIR	2	[SMIR - Send stable net value with range information immediately and repeat ▶ Page 24]
SNS	3	[SNS - Inquire/set the active scale ▶ Page 38]
SR	1	[SR - Send weight value on weight change (send and repeat) ▶ Page 16]
SRU	2	[SRU - Send weight value in display unit on weight change (send and repeat) ▶ Page 25]
ST	2	[ST - Send stable weight value after pressing transfer key ▶ Page 25]
STA	3	[STA - Preset tare value in the defined unit ▶ Page 39]
SU	2	[SU - Send stable weight value in display unit ▶ Page 26]
SV	2	[SV - Send stable net value ▶ Page 26]
SVI	2	[SVI - Send net value immediately ▶ Page 26]
SVIR	2	[SVIR - Send net value immediately and repeat ▶ Page 26]
SWU	2	[SWU - Switch display unit ▶ Page 27]
SX	2	[SX - Send stable weighing data ▶ Page 27]
SXI	2	[SXI - Send weighing data immediately ▶ Page 27]
SXIR	2	[SXIR - Send weighing data immediately and repeat ▶ Page 28]
T	1	[T - Tare ▶ Page 17]
TA	1	[TA - Query/set tare value ▶ Page 17]
TAC	1	[TAC - Clear tare value ▶ Page 18]
TI	1	[TI - Tare immediately ▶ Page 18]
TIM	3	[TIM - Inquire/set system time ▶ Page 39]
U	2	[U - Unit change ▶ Page 28]
Z	0	[Z - Zero ▶ Page 12]
ZI	0	[ZI - Zero immediately ▶ Page 12]
@	0	[@ - Reset ▶ Page 13]

See also

 16 - Inquire/set scale build parameters ▶ Page 31

4 Level 0 commands

4.1 IO - Inquire all implemented MT-SICS commands

Command	IO	Send a list of all implemented MT-SICS commands
Response	IO_B_x_ "1. command" IO_B_x_ "2. command" ... IO_B_x_ "last command"	x = number of the MT-SICS level the command belongs to
Example		
Command	IO	Send a list of all implemented MT-SICS commands
Response	IO_B_0_ "IO" ... IO_B_2_ "GEO" ... IO_B_3_ "CLR" ..." IO_A	Level 0 command IO implemented Level 2 command GEO 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 I1 - Inquire MT-SICS level and level version

Description

Command	I1	Send list of all implemented MT-SICS levels and level versions
Response	I1_A_ "x1" _ "x2" _ "x3" _ "x4" _ "x5" IO_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 x2: Version of the SICS0 commands x3: Version of the SICS1 commands x4: Version of the SICS2 commands x5: Version of the SICS3 commands
Example		
Command	I1	Send list of all implemented MT-SICS levels and level versions
Response	I1_A_ "0123" _ "2.30" _ "2.22" _ "2.33" _ "2.20"	0123: Level 0, 1, 2 and 3 implemented 2.30: Level 0, version V2.30 2.22: Level 1, version V2.22 2.33: Level 2, version V2.33 2.20: Level 3, version V2.20

4.3 I2 - Inquire device data

Command	I2	Inquiry of device data
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Response	I2_A_"text"	Device data as text
	I2_I	Command understood but not executable at present
Example		
Command	I2	Inquiry of device data
Response	I2_A_"IND400 60.00 kg"	The device is an IND400 with a max. capacity of 60 kg
Comments	<ul style="list-style-type: none"> The number of characters of text depends on the scale type. 	

4.4 I3 - Inquire terminal software version

Command	I3	Inquiry of terminal software version
Response	I3_A_"text"	text = software version
	I3_I	Command understood but not executable at present
Example		
Command	I3	Inquiry of terminal software version
Response	I3_A_"1.00.0006"	The software version is 1.00.0006
Comments	<ul style="list-style-type: none"> For more information on the software version refer to the corresponding Service manual. 	

4.5 I4 - Inquire serial number

Command	I4	Inquiry of serial number
Response	I4_A_"text"	Serial number as text
	I4_I	Command understood but not executable
Example		
Command	I4	Reset
Response	I4_A_"1234567"	Serial number 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 [@ ▶ Page 13]. 	

4.6 I6 - Inquiry of scale build parameters

Command	I6	Inquiry of scale build parameters
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Response	I6_IB x	x = Scale Application: I - Industrial L - Retail P – Precision
	I6_MAX_maxvalue_unit	<ul style="list-style-type: none"> unit = Primary Unit maxvalue = Maximum capacity in Primary Unit
	I6_MIN_minvalue_unit	minvalue = Minimum capacity in Primary Unit
	I6_TH_ptvalue_unit	ptvalue = Max. pre-set tare in Primary Unit
	I6_Ri_resolu_unit_maxval_unit	<ul style="list-style-type: none"> Ri = Range Information: 0 – Single Range 1,2,3 – Partial Range / Interval info resolu = resolution of range/Interval Ri in Primary Unit maxval = Max value of range/Interval Ri in Primary Unit
	I6_E_nd	nd = Approved resolution: 0d - non approved scale 1d - display value equals verification interval 10d – class II scale with extended resolution
Example		
Command	I6	Inquiry of scale build parameters
Response	I6_IB I	Industrial Scale
	I6 MAX 15.000 kg	Max. Capacity 15.000 kg
	I6 MIN 0.040 kg	Min. Capacity 0.040 kg
	I6 TH 15.000 kg	Max. pre-set tare 15.000 kg
	I6 R1 0.002 kg/6.000 kg	Range 1: resolution 0.002 kg / Max. value 6.000 kg
	I6 R2 0.005 kg/15.000 kg	Range 2: resolution 0.005 kg / Max. value 15.000 kg
	I6 E 0d	non approved scale
Comments	Ptvalue: for multi intervals, the ptvalue is the first interval capacity, but the real max pre-set tare maybe smaller than the first interval capacity. Minvalue: for multi Range, it is the minimum capacity of the first Range in primary unit.	

4.7 S - Send stable weight value

Command	S	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 at present
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	S	Send a stable weight value
Response	S_S_100.00_kg	The current stable weight value is 100.00 kg
Comments	<ul style="list-style-type: none"> The duration of the timeout depends on the scale type. 	

4.8 SI - Send weight value immediately

Command	SI	Send the weight value immediately with the currently displayed unit
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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 at present
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	SI	Reset
Response	S_D_129.07_kg	The current dynamic weight value is 129.07 kg
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. 	

4.9 SIR - Send weight value immediately and repeat

Command	SIR	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 at present
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	SIR	Send the weight value immediately with the currently displayed unit and repeat
Response	S_D_129.07_kg S_D_129.78_kg S_S_129.11_kg S_D_128.95_kg	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. The number of weight values per second depends on the scale type. 	

4.10 Z - Zero

Command	Z	Zero the scale when stable
Response	Z_A	Command executed successfully
	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	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. 	

4.11 ZI - Zero immediately

Command	ZI	Zero the scale irrespective of stability
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Response	ZI_D	Zero setting performed under dynamic conditions
	ZI_S	Zero setting performed under stable conditions
	ZI_I	Command understood but not executable
	ZI_+	Upper limit of zero setting range exceeded
	ZI_-	Lower limit of zero setting range exceeded
Example		
Command	ZI	Zero the scale irrespective of stability
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. • This command is not allowed with approved scales. 	

4.12 @ – Reset

Command	@	Reset the scale to the conditions found after switching on
Response	I4_A_"text"	Serial number of the scale, the scale is ready for operation
Example		
Command	@	Reset
Response	I4_A_"1234567"	Scale is reset, its serial number is 1234567
Comments	<ul style="list-style-type: none"> • All commands awaiting responses are cancelled. • The tare memory is reset to zero. • The reset command is always executed. • Key control is set to default setting K_1. 	

5 Level 1 commands

5.1 D - Scale display

Command	D_"text"	Write text into the display
Response	D_A	"text" appears in the display and is marked with remote display
	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 maximum number of characters displayed on the screen is 50. If it exceeds, it will display "...". Use the DW command to clear the text. 	

5.2 DW - Weight display

Command	DW	Resets the display after using the D command
Response	DW_A	Command executed successfully
	DW_I	Command understood but not executable at present

5.3 DY - Target parameters

Command	DY_Target_Unit_Tolerance_TolUnit	Set the target parameters for Over/Under Checkweighing, Manual Filling/Dosing
	DY_Target_Unit_TolMinus_TolUnit_TolPlus_TolUnit	
Response	DY_A	Target values accepted
	DY_I	Command understood, but not executable
	DY_L	Command understood but not executable; wrong or missing parameter
Example		
Command	DY_10_kg_1_kg	Target = 10 kg Unit = kg Tolerance = 1 kg TolUnit = kg
	DY_10_kg_10_%_20_%	Target = 10 kg Unit = kg TolMinus = 10 % TolUnit = % TolPlus = 20 %
	DY_30_pcs_10_pcs_20_pcs	Target = 30 pcs Unit = pcs TolMinus = 10 pcs TolUnit = pcs TolPlus = 20 pcs
Response	DY_A	Target set

Comments	<ul style="list-style-type: none"> • The use of DY command requires the operation screen of the Over/Under, Manual Filling/Dosing, Counting applications. • If lower and upper tolerances are sent with the target value, the tolerances can be asymmetric. • If only one tolerance is sent with the target value, upper and lower tolerances are the same. • The DY command supports a target whose tolerance type is Target Deviation or Percentage, but does not support Exact Limits. • The system accepts display unit, primary unit, %, pcs. • If the command was received without error, the bargraph corresponding to the application is displayed and loaded with the new values. • If the bargraph is currently loaded and active, the command overwrites the values and activates them with immediate effect.
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5.4 K - Keyboard monitoring



Key ID

Command	K_Parameter	<ul style="list-style-type: none"> Parameter: <p>K_1: When a key is pressed, execute the corresponding function but do not send the corresponding key code</p> <p>K_2: When a key is pressed, do not execute the corresponding function and do not send the corresponding key code</p> <p>K_3: When a key is pressed, do not execute the corresponding function but send the corresponding key code</p> <p>Response: K_Event ID_Key ID</p> <p>K_4: When a key is pressed, execute the corresponding function and send the corresponding function code</p> <p>Response: K_B_Function ID, K_A_Function ID</p> <p>or</p> <p>Response: K_I_Function ID</p> Event ID: <p>C: Key is released (after being pressed shortly or for 2 seconds)</p> <p>R: Key is pressed and held around 2 seconds</p> Function ID: <p>1: Tare</p> <p>2: Zero</p> <p>3: Clear</p> <p>4: Print</p>
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		
Command	K_3	Disable keyboard
Response	K_A	Command executed successfully
	K_C_25	Clear key pressed
	K_C_26	Tare key pressed
	K_C_27	Zero key pressed
Comments	<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_I_y for the end of the function are sent. This behaviour applies to taring, zeroing, calibrating, testing, printing etc. 	

5.5 SR - Send weight value on weight change (send and repeat)

Command	SR SR_Preset value_Unit	<p>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</p> <p>Range: 1 d to maximum load</p> <p>If no preset value is entered, the weight change must be at least 12.5% of the last stable value, minimum 30 d</p>
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Response	S_S_Weight value_Unit - weight change -	Current stable weight
	S_D_Weight value_Unit - stable -	Dynamic (unstable) weight
	S_S_Weight value_Unit	Current stable weight
	S_I	Command understood but not executable at present
	S_L	Command understood but not executable; wrong or missing parameter
	S_+	Scale in overload range
	S_-	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_kg	Scale stable, 100.00 kg loaded
	S_D_123.45_kg	Load change
	S_S_200.00_kg	Scale stable again, 200.00 kg loaded
Comments	<ul style="list-style-type: none"> • SR is overwritten by all send commands and hardware break and hence cancelled. • The number of weight values per second depends on the scale type. • The duration of the timeout depends on the scale type. 	

5.6 T - Tare

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 at present
	T_+	Upper limit of taring range exceeded
	T_-	Lower limit of taring range exceeded
Example		
Command	T	Tare
Response	T_S_103.05_kg	The scale is tared and has a value of 103.05 kg 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 ▶ Page 18]. • The weight value is always sent in display unit. 	

5.7 TA - Query/set tare value

Command	TA	Inquiry of a tare weight value
	TA_Weight value_Unit	Set 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	Set tare value 100.00 g
Response	TA_A_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 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 display unit. • The preset value can only be entered in display unit. • The taring range is specified to the scale type.
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5.8 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 at present

5.9 TI - Tare immediately

Command	TI	Tare immediately regardless of stability
Response	T_S_Weight value_Unit	Taring performed with a stable value, tare weight value in the unit currently set under Unit 1
	T_D_Weight value_Unit	Taring performed with a dynamic value, tare weight value in the unit currently set under Unit 1
	T_I	Command understood but not executable at present
	T_L	Command is not executable, e.g., approved scale version
	T_+	Upper limit of taring range exceeded
	T_-	Lower limit of taring range exceeded

Example		
Command	TI	Tare immediately regardless of stability
Response	T_D_103.05_kg	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 display unit. • 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 GEO - Inquire Geo value

Command	GEO	Inquiry of Geo value
Response	GEO_A_x	Command executed successfully, scale has Geo value x X = 0.0 ... 31.0
Example		
Command	GEO	Inquiry of Geo value
Response	GEO_A_19.0	Command executed successfully, scale has Geo value 19.0

6.2 M21 - Inquire/set weight unit

Inquiry

Command	M21	Inquiry of unit
	M21 Channel	
Response	M21_A_Channel_Unit	<ul style="list-style-type: none"> Channel: Output channel of the weight. Channel = 1: Currently displayed unit Unit: 0: g 1: kg 2: † 7: lb 8: oz 21: ton
	M21_l	Command understood, but not executable
Example		
Command	M21	Inquiry of unit
Response	M21_A_1_1	Channel = 1: Currently displayed unit Unit 1 = kg
Command	M21 1	Inquiry of unit
Response	M21_A_1_0	Channel = 1: Currently displayed unit Unit 0 = g

Setting

Command	M21_Channel_Unit	Setting of unit, for designation and parameter x see inquiry
Response	M21_A	Command executed successfully
	M21_l	Command understood, but not executable
	M21_L	Command understood but not executable; wrong or missing parameter
Example		
Command	M21_1_1	Set unit to kg
Response	M21_A	Command executed successfully
Comments	The M21 setting is allowed only for non-approved scales.	

6.3 PRN - Initiate printout

Command	PRN	Initiate printout on the printer channel
Response	PRN_A	Command executed successfully
	PRN_l	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. • The PRN command generates the same printout as the Transfer key. 	

6.4 PWR - Switch off

Command	PWR_0	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

6.5 RST - Restart

Command	RST	Restart the scale
Response	I4_A_"text"	Serial number of the scale, the scale is ready for operation
Example		
Command	RST	Restart
Response	IA_A_"1234567"	Scale is restarted, its serial number is 1234567
Comments	<ul style="list-style-type: none"> • The restart command responds with the serial number. 	

6.6 R0 - Enable user input

Command	R0	Enable user input
Response	R0_A	User input enabled
	R0_I	Command understood but not executable at present
Comments	<ul style="list-style-type: none"> • This includes the internal keypad, external keyboards as well as touch screen. • If external keyboards are disabled in the terminal settings, this command has no effect on external USB keyboards. 	

6.7 R1 - Disable user input

Command	R1	Disable user input
Response	R1_A	User input disabled
	R1_I	Command understood but not executable at present
Comments	<ul style="list-style-type: none"> • This includes the internal keypad, external keyboards as well as touch screen. 	

6.8 SIH - Send net 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 display unit
	H_D_Weight value_Unit	Dynamic net weight in high resolution and in display unit
	H_I	Command understood, but not executable
	H_+	Scale in overload range
	H_-	Scale in underload range
Example		
Command	SIH	Send net weight in high resolution irrespective of stability
Response	H_S_123.459_kg	Current net weight in high resolution is 123.459 kg and stable
Comments	<ul style="list-style-type: none"> • Like [SI ▶ Page 11] command. • High resolution data, i.e. highest possible precision of the connected scale. 	

6.9 SIRU - Send weight value with currently displayed unit immediately and repeat

Command	SIRU	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 the weight value immediately with the currently displayed unit and repeat
Response	S_D_112.45_lb S_S_112.98_lb	The scale sends stable or unstable weight values continuously in the currently displayed unit
Comments	<ul style="list-style-type: none"> This command is cancelled by the @, S, SI, SIR, SIU, SNR, SNRU, SR and SRU commands. The number of weight values per second depends on the scale type. 	

6.10 SIS - Send current net information

Command	SIS	Inquiry of the current net information with the currently displayed weight unit and with status information	
Response	SIS_A_Status_"Net weight"_ Unit_Readability_Step_ Approval_Info	Status	Status information 0 = stable weight value 1 = dynamic value 2 = stable value below MinWeigh 3 = dynamic value below MinWeigh 4 = overload 5 = underload 6 = error, invalid
		Unit	Currently displayed unit 0 = g 1 = kg 2 = t 7 = lb 8 = oz 21 = ton
		Readability	Number of decimal places
		Step	Display step 0, 2, 5, 10, 20, 50, 100
		Approval	Approval state -1 = unapproved with * in the display 0 = not approved 1 = approved, e=d 10 = approved, e=10d 100 = approved, e=100d
		Info	Weight info 0 = without tare 1 = net with weighed tare 2 = net with preset tare
	SIS_I	Command understood, but not executable	
Example			
Command	SIS	Send current weight value in the currently displayed unit	
Response	SIS_A_0_"0.007" _1_3_ 1_0_0	Stable weight value 0.007 kg, 3 decimal places, display step 1, not approved, without tare	

6.11 SIU - Send weight value with currently displayed unit immediately

Command	SIU	Send the weight value immediately with the currently displayed unit
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 at present
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	SIU	Send weight value with currently displayed unit immediately
Response	S_D_101.37_lb	The scale sends stable or unstable weight values in the currently displayed unit
	S_S_100.00_lb	
	...	

6.12 SIX1 - Current gross, net, tare values

Command	SIX1	Inquiry of the complete weighing information	
Response	SIX1_Sts_MinW_CoZ_Rep_Calc_PosE_StepE_MarkE_Range_TM_G_N_T_Unit	Sts	Status of the net value S = stable D = Dynamic + = Overload - = Underload I = Invalid value E = Error
		MinW	MinWeigh status 0 = Function inactive 1 = Below MinWeigh limit 2 = Above MinWeigh limit
		CoZ	Center of zero status Z = +/- 1/4 e around gross or net zero N = outside the limits of +/- 1/4 e
		Rep	Repeating indicator R = repeated value N = New weight update
		Calc	Calculation method indicator R = Net, tare and gross values are rounded separately C = Gross is calculated based on rounded net and rounded tare. N = Gross is calculated and needs to be marked in legally relevant printout.
		PosE	Position of the approved digit relative to the base resolution (smallest digit d) 0 = not approved 1 = approved, last digit is approved 2 = approved, second last digit is approved 3 = approved, third last digit is approved 4 = approved, fourth last digit is approved 5 = approved, fifth last digit is approved

Response (continued)	SIX1_Sts_MinW_CoZ_Rep_ Calc_PosE_StepE_MarkE_ Range_TM_G_N_T_Unit	StepE	Step of the approved digit 0 = not approved 1 = step of e is 1 2 = step of e is 2 5 = step of e is 5
		MarkE	This flag indicates whether the weight value has to be marked as "not approved" 0 = no special indication needed 1 = special indication, e.g. an asterisk * has to be displayed
		Range	Range/interval number of the net value 1 = Single range 1, 2, ..., n = Range Multi Range scales: range linked to gross value Multi Interval scales: range linked to net value
		TM	Tare mode N = no tare M = measured tare P = preset tare
		G	Gross value
		N	Net value
		T	Tare value
		Unit	Display unit
		SIX1_I	Command understood, but not executable
Example			
Command	SIX1	Send complete weighing information	
Response	SIX1_S_0_Z_N_R_0_0_0_1_ N_____0.00_____0.00_ _____0.00_g	Complete weighing information	

6.13 SIX2 - Current gross, net, tare, HighResNet values

Command	SIX2	Inquiry of the complete high resolution weighing information	
Response	SIX2_Sts_MinW_CoZ_Rep_ Calc_PosE_StepE_MarkE_ Range_TM_G_N_T_ HrSTs_HR_Unit	Complete weighing information	
		HrSts	Status of the high resolution net weight S = stable D = Dynamic
		HR	High resolution net value
		others	See [SIX1 ► Page 22] command
	SIX1_I	Command understood, but not executable	
Example			
Command	SIX2	Send the complete high resolution weighing information	
Response	SIX2_S_0_Z_N_R_0_0_0_1_ N_____0.00_ _____0.00_____0.00_ S_____0.000_kg	Complete weighing information	

6.14 SIX3 - Current gross, net, tare, HighResNet, MaxResNet values

Command	SIX3	Inquiry of the complete high resolution weighing information	
Response	SIX2_Sts_MinW_CoZ_Rep_ Calc_PosE_StepE_MarkE_ Range_TM_G_N_T_ HrSTs_HR_MR_Unit	Complete weighing information	
		MR	Maximum resolution net value
		others	See [SIX2 ► Page 23] command
	SIX1_I		

Example		
Command	SIX3	Send complete weighing information
Response	SIX3_S_0_Z_N_R_0_0_0_1_ N_____0.00_____0.00_ _____0.00_S_____0.000_ __0.000000_kg	Complete weighing information

6.15 SM - Send stable net value with range information

Command	SM	Send the current stable net value with range information
Response	Sr_Net value_Unit_ High resolution net value	Current stable net weight with range information r = M: Single or multi interval scale r = 1, 2, 3 = Current range of a Multi Range scale
	SM_I	Command understood but not executable at present
	SM_+	Scale in overload range
	SM_-	Scale in underload range
Example		
Command	SM	Send the current stable net value with range information
Response	S1_____0.025_kg_ _____0.0253	Range 1 active, the current stable net value is 0.025 kg, the high resolution value is 0.0253

6.16 SMI - Send net value with range information immediately

Command	SMI	Send the current net value with range information immediately
Response	Sr_Net value_Unit_ High resolution net value	Current stable net weight with range information r = M: Single or multi interval scale r = 1, 2, 3= Current range of a Multi Range scale
	SrD_Net value_Unit_ High resolution net value	Dynamic net weight with range information
	SMI_I	Command understood but not executable at present
	SMI_+	Scale in overload range
	SMI_-	Scale in underload range
Example		
Command	SMI	Send the current net value with range information
Response	S1D_____0.025_kg_ _____0.0253	Range 1 is active, the current dynamic net value is 0.025 kg, the high resolution value is 0.0253

6.17 SMIR- Send stable net value with range information immediately and repeat

Command	SMIR	Send the current net value with range information immediately and repeat sending until the command is stopped
Response	Sr_Net value_Unit_ High resolution net value	Current stable net weight with range information r = M: Single or multi interval scale r = 1, 2, 3= Current range of a Multi Range scale
	SrD_Net value_Unit_ High resolution net value	Dynamic net weight with range information
	SMI_I	Command understood but not executable at present
	SMI_+	Scale in overload range
	SMI_-	Scale in underload range
Example		
Command	SMIR	Send the current net value with range information and repeat

Response	S1D_0.025_kg_0.0253 S1_0.037_kg_0.0371	The scale sends stable or unstable net values with range information
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6.18 SRU - Send weight value in display unit on weight change (send and repeat)

Command	SRU SRU_Preset value_Unit	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 - weight change - 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 at present 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_D_100.00_g S_D_129.78_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. 	

6.19 ST - Send stable weight value after pressing transfer key

Inquiry

Command	ST	Read the parameters from the device.	
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
	ST_I	Command understood, but not executable	

Setting

Command	ST_x	Execute a function on the device. Activate/deactivate the transfer function.
Response	ST_A	Command executed successfully
Example		
Command	ST_1	Execute a function on the device. Activate transfer function.
Response	ST_A – transfer key pressed – S_S_123.45_kg	Enabled; weight value in display unit is sent each time when the transfer key is pressed. Current net weight is 123.45 kg.
Comments	<ul style="list-style-type: none"> ST function is not active after switching on and after reset command. 	

6.20 SU - Send stable weight value in display unit

Command	SU	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 at present
	S_+	Scale in overload range
	S_-	Scale in underload range
Example		
Command	SU	Send a stable weight value
Response	S_S_100.00_lb	The current stable weight value is 100.00 lb
Comments	<ul style="list-style-type: none"> The duration of the timeout depends on the scale type. 	

6.21 SV - Send stable net value

Command	SV	Send the current stable net value
Response	SV__Net value_Unit_HighResolution value	Current stable net value and HighRes net value
	SV_I	Command understood but not executable at present
	SV_+	Scale in overload range
	SV_-	Scale in underload range
Example		
Command	SV	Send the current stable net value
Response	SV_1.995_kg_1.9972	The stable net weight is 1.995 kg, The stable high resolution net weight is 1.9972 kg

6.22 SVI - Send net value immediately

Command	SVI	Send the current stable net value irrespective of stability
Response	SV__Net value_Unit_HighResolution value	Stable weight
	SVD_Net value_Unit_D_HighResolution value	Dynamic weight
	SV_I	Command understood but not executable
	SV_+	Scale in overload range
	SV_-	Scale in underload range
Example		
Command	SVI	Send the current stable net value
Response	SVD_1.995_kg_D_1.9972	The dynamic net weight is 1.995 kg The dynamic high resolution net weight is 1.9972 kg

6.23 SVIR - Send net value immediately and repeat

Command	SVIR	Send the current stable net value irrespective of stability
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Response	SV_ Net weight value_Unit_HighResolution value	Stable weight
	SVD_ Net weight value_Unit_D_HighResolution value	Dynamic weight
	SV_I	Command understood but not executable
	SV_+	Scale in overload range
	SV_-	Scale in underload range
Example		
Command	SVIR	Send the current stable net value
Response	SVD_1.995_kg_D_1.9972	Dynamic and stable net weight and high resolution net weight
	SV_2.795_kg_2.7948	

6.24 SWU - Switch display unit

Command	SWU	Switch to next display unit
Response	SWU_A	Command executed successfully
	SWU_I	Command understood but not executable
Comments	The available units depend on <ul style="list-style-type: none"> the setting of the primary unit, the second unit and the third unit, the approval status of the scale. 	

6.25 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	x1	gross
		x2	unit of gross weight
		x3	net
		x4	unit of net weight
		x5	tare
		x6	unit of tare weight
	SX_I	Command understood but not executable at present	
	SX_+	Scale in overload range	
	SX_-	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	Current stable weighing data	
Comments	<ul style="list-style-type: none"> The duration of the timeout depends on the scale type. 		

6.26 SXI - Send weighing data immediately

Command	SXI	Send current weighing data immediately with the currently displayed unit
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Response	SX_S_x1_x2_x3_x4_x5_x6	Stable weighing data x1 ... x6: see [SX ▶ Page 27] command
	SX_D_x1_x2_x3_x4_x5_x6	Unstable (dynamic) weighing data
	SX_I	Command understood but not executable at present
	SX_+	Scale in overload range
	SX_-	Scale in underload range
Example		
Command	SX	Send current weighing data immediately with the currently displayed unit
Response	SX_D_G_____2.00100_kg_N_____1.99850_kg_ T_____0.00061_kg	Dynamic weight values
	SX_S_G_____2.00030_kg_N_____1.99970_kg_ T_____0.00060_kg	Stable weight values
Comments	<ul style="list-style-type: none"> Like [SX ▶ Page 27] command, but response at any time (stable or unstable result). 	

6.27 SXIR - Send weighing data immediately and repeat

Command	SXIR	Send current weighing data immediately with the currently displayed unit
Response	SX_S_x1_x2_x3_x4_x5_x6	Stable weighing data x1 ... x6: see [SX ▶ Page 27] command
	SX_D_x1_x2_x3_x4_x5_x6	Unstable (dynamic) weighing data
	SX_I	Command understood but not executable at present
	SX_+	Scale in overload range
	SX_-	Scale in underload range
Example		
Command	SX	Inquiry of current stable weighing data
Response	SX_D_G_____2.00100_kg_N_____1.99850_kg_ T_____0.00061_kg	Dynamic weight values
	SX_S_G_____2.00030_kg_N_____1.99970_kg_ T_____0.00060_kg	Stable weight values
Comments	<ul style="list-style-type: none"> Like [SX ▶ Page 27] 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. 	

6.28 U - Unit change

Command	U_Unit	Change unit g kg t lb oz lb-oz (analog scales only)
	U	Change back to primary unit

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. 	

7 Level 3 commands

7.1 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 DAT - Inquire/set system date

Inquiry

Command	DAT	Inquiry of the current date of the device
Response	DAT_A_Day_Month_Year	Represents the date in the format day_month_year
	DAT_I	Command understood but not executable

Example

Command	DAT	Inquiry of the current date of the device
Response	DAT_A_25_11_2023	Current date is November 25 th , 2023

Setting

Command	DAT_Day_Month_Year	Set the date in the format day□month□year
Response	DAT_A	Command executed successfully
	DAT_I	Command understood but not executable
	DAT_L	Command understood but not executable; wrong or missing parameter

Example

Command	DAT_A_25_11_2023	Set the date to November 25 th , 2023
Response	DAT_A	Command executed successfully
Comments	The set date is retained even after the reset command [@ ▶ Page 13].	

7.3 DIO - Inquire input states / set output states

Inquiry

Command	DIO	Inquiry of the input status
	DIO_"Channel"	Inquiry of the output status Channel = 1, 2, 3, 4
Response	DIO_Binary display	Input status E.g. DIO 7, 7 = 0x111
	DIO_"Channel"_"Status"_A	Status = 0: closed Status = 1: open
	DIO_I	Command understood, but not executable; no DIO board installed

Setting

Command	DIO_"Channel"_"Status"	Set the output status of a digital output For parameters, see Inquiry.
Response	DIO_"Channel"_"Status"_A	Command executed successfully
	DIO_L	Command understood but not executable; no DIO board installed

Example

Command	DIO_2_0	Set output 2 to closed
Response	DIO_2_A	Command executed successfully

7.4 I6 - Inquire/set scale build parameters

Command	I6	Read the parameters from the device
Response	I6_IB_I I6_MAX_Max.value_Unit I6_MIN_Min.value_Unit I6_TH_Preset tare value_Unit I6_Ri_Resolution_Unit_ max. value_Unit I6_E_nd IE	Industrial scale Max. value = maximum capacity Min. value = minimum capacity Pt value = maximum preset tare Ri = Range information Resolution = Resolution of Range/interval nd = approved resolution nd = 0d: not approved nd = 1d: e = d nd = 10d: e = 10d IE = end of parameters
Example		
Command	I6	Reset
Response	I6_IB_I I6_MAX_____15.000_kg I6_MIN_____0.005_kg I6_TH_____15.000_kg I6_RO_____0.002_kg_ Max. value_____15.000_kg I6_E_0d IE	Industrial scale Max. capacity 15.000 kg Min. load 0.005 kg Max. preset tare 15.000 kg Single Range, Resolution 0.002 kg Max value 15.000 kg Not approved End of parameters

7.5 I10 - Inquire/set device identification

Inquiry

Command	I10	Inquiry of the device identification
Response	I10_A_"text"	text represents the device identification
	I10_I	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 text for the device identification
Response	I10_A	Command executed successfully
	I10_I	Command understood but not executable
	I10_L	Command understood but not executable; wrong or missing parameter
Example		
Command	I10_"Device123_1"	Set Device123 for the device identification
Response	I10_A	Command executed successfully
Comments	<ul style="list-style-type: none"> Up to 20 characters can be entered as text. The set device identification is retained even after the reset command [@ ▶ Page 13]. The scale can display, transfer and print the device identification. This command sets the terminal identification field: Terminal->Device->Identification->Terminal ID #1. 	

7.6 I11 - Inquire model designation

Command	I11	Inquiry of the model designation
Response	I11_A_"Model"	Model represents the model designation IND400 S S = IND400 stainless steel IND400 MK = IND400 metal keypad IND400 Ex = IND400 Explosion proof
	I11_I	The model designation cannot be transferred at present as another operation is taking place
Example		
Command	I11	Inquiry of model designation
Response	I11_A_"IND400 S S"	Device identification is an IND400 stainless steel
Comments	<ul style="list-style-type: none"> The model designation depends on the current system setup 	

7.7 I12 / I13 / I14 - Query/set identifications ID1 / ID2 / ID3

Inquiry

Command	I12	Inquiry of identification ID1
	I13	Inquiry of identification ID2
	I14	Inquiry of identification ID3
Response	I12_A_"text" I13_A_"text" I14_A_"text"	text represents the current identification
	I12_I I13_I I14_I	Command understood, but not executable
Example		
Command	I12	Inquiry of the identification ID1
Response	I12_A_"123456"	Identification ID1 is 123456

Setting

Command	I12_"text" I13_"text" I14_"text"	Set the text for the identification ID1 / ID2 / ID3	
	Response	I12_A I13_A I14_A	Command executed successfully
		I12_I I13_I I14_I	Command understood but not executable
I12_L I13_L I14_L		Command understood but not executable; identification ID1 / ID2 / ID3 too long or wrong parameter	
Comments	<ul style="list-style-type: none"> Up to 40 characters can be entered as text. The scale can display, transfer and print the identifications. 		

7.8 I51 - Power-on time, including short interruption

Command	I51	Inquiry of the power-on time
Response	I51_A_Days_ Hours_Minutes_Seconds	Power-on time in days-hours-minutes-seconds
	I51_I	Command understood but not executable at present

Example		
Command	I51	Inquiry of the power-on time
Response	I51_A_4_17_3_37	The power-on time is 4 days 17 hours 3 minutes and 37 seconds.
Comments	<ul style="list-style-type: none"> Immediately after the startup all parameters are zero. 	

7.9 LDR - Load material

Command	LDR_x	Load database record x (x = 1 ... max. number of database records)
Response	LDR_A	Command executed successfully, material loaded
	LDR_I	Command understood but not executable at present
	LDR_L	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 material parameters including tare values. 	

7.10 MER - Inquire meridian

Command	MER	Inquiry of meridian
Response	MER_A_xM	x = A: A n t e M eridian x = P: P ost M eridian
	MER_I	Command understood, but not executable
Example		
Command	MER	Inquiry of meridian
Response	MER_A_PM	Post meridian
Comments	<ul style="list-style-type: none"> If Hour >= 12, PM. Otherwise, AM. 	

7.11 M08 - Inquire/set display brightness

Inquiry

Command	M08	Inquiry of display brightness
Response	M08_A_x	Display brightness, x = 0~100, in steps of 1
	M08_I	Command understood, but not executable
	M08_L	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 = 0~100, in steps of 1
Response	M08_A	Command executed successfully
	M08_I	Command understood but not executable
	M08_L	Command understood but not executable
Comments	<ul style="list-style-type: none"> % values are only approximate values. 	

7.12 M15 – Language

Inquiry

Command	M15	Inquiry of the language
Response	M15_A_ID	<ul style="list-style-type: none"> ID = Language identification 0: English 1: German 2: French 3: Spanish 4: Italian 8: Polish 15: Portuguese 16: Chinese 17: Japanese
	M15_I	Command understood but not executable at present
	M15_L	Command understood but not executable; wrong or missing parameter

Example

Command	M15	Inquiry of the language
Response	M15_A_0	English is the current Language

Setting

Command	M15_ID	Set the language, for parameter x see inquiry
Response	M15_A	Command executed successfully
	M15_I	Command understood but not executable at present
	M15_L	Command understood but not executable; wrong or missing parameter

Example

Command	M15_3	Set language to Spanish
Response	M15_A	Setting performed

7.13 PCS - Send number of pieces immediately

Command	PCS	Send number of pieces immediately
Response	PCS_S_pieces	Number of pieces with stable weight
	PCS_D_pieces	Number of pieces with dynamic weight
	LDR_I	Command understood but not executable

Example

Command	PCS	Send number of pieces immediately
Response	PCS_S_100	Number of pieces is 100, stable weight value
	PCS_D_101	Number of pieces is 101, dynamic weight value

Comments

- This command is available for the Counting application.

7.14 PMC - Set Over/under checkweighing parameters in counting mode

Command	PMC_ABS_Low_High_[U_Unit]_[A_APW]_[T_Tare]_[NO "MaterialID"]_[NA "MaterialDesc"]_[D "TargetDesc"]	<p>Set Over/Under Checkweighing parameters with tolerance type "Exact limits"</p> <p>Low: Limit (Under) when the tolerance type is exact limits</p> <p>High: Limit (Over) when the tolerance type is exact limits</p> <p>U: APW/Tare Unit</p> <p>A: APW value</p> <p>T: Tare value</p> <p>NO: Material ID when the Material Table is created</p> <p>NA: Material Description when the Material Table is created</p> <p>D: Counting Target Description when the Counting Target Table is created</p>
	PMC_REL_Target_TolMinus_TolPlus_[U_Unit]_[A_APW]_[T_Tare]_[NO "MaterialID"]_[NA "MaterialDesc"]_[D "TargetDesc"]	<p>Set Over/Under Checkweighing parameters with tolerance type "Target deviation"</p> <p>Target: Target value when the tolerance type is deviation</p> <p>TolMinus: Lower tolerance value when the tolerance type is deviation</p> <p>TolPlus: Upper tolerance value when the tolerance type is deviation</p> <p>U: APW/Tare Unit</p> <p>A: APW value</p> <p>T: Tare value</p> <p>NO: Material ID when the Material Table is created</p> <p>NA: Material Description when the Material Table is created</p> <p>D: Counting Target Description when the Counting Target Table is created</p>
Response	PMC_A	Command executed successfully
	PMC_I	Command understood but not executable at present
	PMC_L	Logical error, wrong or missing parameter
Example		

Command	PMC_ABS_78_81_U_g_A_3.45	Limit (Under) = 78 pcs Limit (Over) = 81 pcs Unit = g APW value = 3.45 g
	PMC_REL_100_10_20_U_kg_A_0.00225_T_5	Target = 100 pcs TolMinus = 10 pcs TolPlus = 20 pcs Unit= kg APW value = 0.00225 kg Tare value = 5 kg
Response	PMC_A	Command executed successfully
Comments	• Items in brackets [] are optional	

7.15 PMI - Inquire Over/under checkweighing parameters in weighing mode

Command	PMI	Inquiry of Over/Under Checkweighing parameters
Response	PMI_Mode_TolType_Unit_Value1_Value2_[Value3]_[T_Tare]_[A_APW]_[D "TargetDesc"]_[NA "MaterialDesc"]_[NO "MaterialID"]	Command executed successfully Mode: W (Weighing) or C (Counting) TolType: ABS (Exact Limits), REL (Deviation), PER (Percentage)Limit (Under) when the tolerance type is exact limits Unit: Unit used for weight values like target values, tolerance, Tare, APW Value1 : Low tolerance or Target value Value2: High tolerance or TolMins value Value3: TolPlus value Upper tolerance value when the tolerance type is deviation A: APW value T: Tare value NO: Material ID when the Material Table is created NA: Material Description when the Material Table is created D: Counting Target Description when the Counting Target Table is created
	PMI_I	Command understood but not executable at present
Example		
Command	PMI	Inquiry of Over/Under Checkweighing parameters

Response	PMI_W_ABS_kg_1.050_1.090 _T_2.000	Mode = Weighing Tolerance Type = Exact Limits Limit (Under) = 1.05 kg Limit (Over) = 1.09 kg Unit = kg Tare value = 2 kg
	PMI_C_REL_kg_200_2 _3_A_0.00142_ D "TargetDesc" _ NA "MaterialDesc" _NO "MaterialID"	Mode = Counting Tolerance Type = Deviation Target = 200 pieces TolMinus = 2 pieces TolPlus = 3 pieces Unit = kg APW value = 0.00142 kg MaterialID MaterialDescription TargetDescription
Comments	• Items in brackets [] are optional	

7.16 PMW - Set Over/under checkweighing parameters in weighing mode

Command	PMW_ABS_Low_High_Unit_ [T_Tare]_[D "TargetDesc"]_ [NA "MaterialDesc"]_[NO "MaterialID"]	Set Over/Under Checkweighing parameters with tolerance type "Exact limits"
	PMW_REL_Target_TolMinus_TolPlus_Unit_ [T_Tare]_[D "TargetDesc"]_ [NA "MaterialDesc"]_[NO "MaterialID"]	Set Over/Under Checkweighing parameters with tolerance type "Target deviation"
	PMW_PER_Target_TolMinus_TolPlus_Unit_ [T_Tare]_[D "TargetDesc"]_ [NA "MaterialDesc"]_[NO "MaterialID"]	Set Over/Under Checkweighing parameters with tolerance type "Percentage"
Response	PMW_A	Command executed successfully
	PMW_I	Command understood but not executable at present
	PMW_L	Logical error, wrong or missing parameter
Example		
Command	PMW_ABS_10_20_kg	Limit (Under) = 10 kg Limit (Over) = 20 kg Unit = kg
	PMW_REL_100_10_20_kg_T_5	Target = 100 kg TolMinus = 10 kg TolPlus = 20 kg Unit = kg Tare value = 5 kg
	PMW_PER_16.3_10.2_10.9_U_lb	Target = 16.3 lb TolMinus = 10.2 % TolPlus = 10.9 % Unit = lb
Response	PMW_A	Command executed successfully
Comments	• Items in brackets [] are optional	

7.17 PW - Inquire/set the piece weight

Inquiry

Command	PW	Inquiry of piece weight
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Response	PW_A_SinglePiece_Unit	Current piece weight value
	PW_I	Command understood, but not executable
	PW_L	Piece counting application not active or wrong parameter
Example		
Command	PW	Inquiry of piece weight
Response	PW_A_1.78_g	The reference weight for a single piece is 1.78 grams

Setting

Command	PW_SinglePiece_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	Set the piece weight to 1.78 g
Response	PW_A	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. 	

7.18 REF - Counting: build reference

Command	REF	Build reference with the stored reference size
	REF_x	Build reference with reference number x
Response	REF_A	Reference built
	REF_I	Command understood but not executable (scale is not in counting application)
	REF_L	Command understood but not executable; wrong or missing parameter
Example		
Command	REF	Build reference with the stored reference size
	REF_12	Build reference with 12 pieces
Response	REF_A	Reference built

7.19 SM1 - Perform animal weighing

Command	SM1	Perform animal eighing
Response	SM1_A	Animal weighing started
	SM1*_Weight value_Unit	Animal weighing result
	SM1_I	Command understood but not executable at present
	SM1_+	Scale in overload range
	SM1_-	Scale in underload range
Example		
Command	SM1	Perform animal eighing
Response	SM1*_103.05_kg	The animal weighing result is 103.50 kg

7.20 SNS - Inquire/set the active scale

Inquiry

Command	SNS	Inquiry of the active scale
Response	SNS_x	x = active scale
	SNS_I	Command understood, but not executable

Example		
Command	SNS	Inquiry of the active scale
Response	SNS_1	Scale 1 is the active scale

Setting

Command	SNS_x	Set the active scale, 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

Example

Command	SNS_1	Set the active scale to scale 1
Response	SNS_A	Command executed successfully

7.21 STA - Preset tare value in the defined unit

Command	STA_Weight value_Unit	Entry of a tare preset value in the defined unit
Response	STA_A_Weight value_Unit	Taring performed with the preset tare value in the defined unit
	STA_I	Command understood but not executable (scale is currently executing another command, e.g., zero setting, or timeout as stability was not reached)
	STA_L	Command understood but not executable; wrong or missing parameter

Example

Command	STA_100.00_g	Set tare value 100.00 g
Response	STA_A_100.00_g	The scale is tared and has a value of 100.00 g in the tare memory

Comments

- 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.

7.22 TIM - Inquire/set system time

Inquiry

Command	TIM	Inquiry of the current time of the device
Response	TIM_A_hh_mm_ss	Represents the time in the format hh:mm:ss
	TIM_I	Command understood but not executable

Example

Command	TIM	Reset
Response	TIM_A_15_56_11	Current time is 15:56:11

Setting

Command	TIM_hh_mm_ss	Set the time in the format hh:mm:ss
Response	TIM_A	Command executed successfully
	TIM_I	Command understood but not executable
	TIM_L	Command understood but not executable; wrong or missing parameter

Comments

The time setting is retained even after the reset command [@ ▶ Page 13].

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