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SCT-4X Series

Firmware version 01.21.01

Fieldbus Protocol



RICE LAKE WEIGHING SYSTEMS

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Contents

Connection 4

Operation Mode 5

Fieldbus and Data Format Configuration 6

Data Reading (Input Area) 8

Weight Data and Alibi Memory "**Page 1000"** (0x03E8) 10

Extimated Gross Weight Channels "**Page 2000"** (0x07D0) 11

Tares, Net and Gross Weights "**Page 2000 - 2001 - 2002"** (0x07D0 - 0x07D1 - 0x07D2) 12

Net Weights and Tares "**Page 2003"** (0x07D3) 13

Load Distribution Percentage. "**Page 2004"** (0x07D4) 14

Weight Data and ADC Points of Each Channel "**Page 3000"** (0x0BB8) 15

Weight Data and Microvolt of Each Channel **"Page 3001"** (0x0BB9) 16

Calibration 0 - Scale Parameters "**Page 5000"** (0x1388) 17

Calibration 1 - Calibration Points Weights **"Page 5001"** (0x1389) 18

Calibration 2 - Calibration Points ADC "**Page 5002"** (0x138A) 19

Calibration 3 - Operative Mode **"Page 5003"** (0x138B) 20

Calibration 4 - Filter and Metrical Parameters (1/2) "**Page 5004"** (0x138C) 21

Calibration 5 - Metrical Parameters (2/2) **"Page 5005"** (0x138D) 22

Calibration 6 - Condensed Calibration "**Page 5006"** (0x138E) 23

Advanced Filters **"Page 5007"** (0x138F) 24

Anti-Peak Filter "**Page 5008"** (0x139A) 25

Tare Type **"Page 5010"** (0x1392) 26

Transmitter SN and Firmware "**Page 5011"** (0x1393) 27

Stored Dependent Channel Load Distribution "**Page 5013"** (0x1359) 28

Unit 2 (Function CONU) "**Page 5015"** (0x1397) 29

Fieldbus Configuration **"Page 5030"** (0x13A6) 30

Profinet Name (only for SCT-1SX-PRONET) "**Page 5031"** (0x13A7) 31

Inputs Configuration **"Page 5100"** (0x13EC) 32

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Outputs Configuration "**Pages 5101 - 5106"** (0x13ED - 13F2) **33**

Setpoint Values (1/2) "Page 6100" (0x17D4) **34**

Table 1 - Input Status Register **35**

Table 2.1 - Output Status Register (multi-scale) **35**

Table 2.2 - Output Status Register (Single Scale) **36**

Table 3 - Command Status Register **36**

Table 4 - Alibi Status Register **37**

Table 5 - Channel Status Register **37**

Command Sending (Output Area) **38**

How to Send a Command **38**

List of Available Commands **39**

Transmitter Configuration via Fieldbus **41**

Operating Mode **41**

Calibration **42**

Calibration Linearization **43**

Theoretical Calibration **44**

Filter / Metric Parameters 1 **45**

Metric Parameters 2 **46**

Digital Inputs **47**

Digital Output 1 **48**

Digital Output 2 **49**

Profinet Name **50**

Scale Zeroing via Fieldbus **51**

Mechanical Tare Zeroing via Fieldbus **51**

Setup Backup and Restore via Fieldbus **52**

Backup **52**

Restore **52**

Diagnostic Messages **53**

Introduction

Thank you for purchasing this product.

This manual contains fieldbus information for the following SCT-4X digital weight transmitters:

- SCT-4X-PRONET
- SCT-4X-ETHIP
- SCT-4X-MODTCP

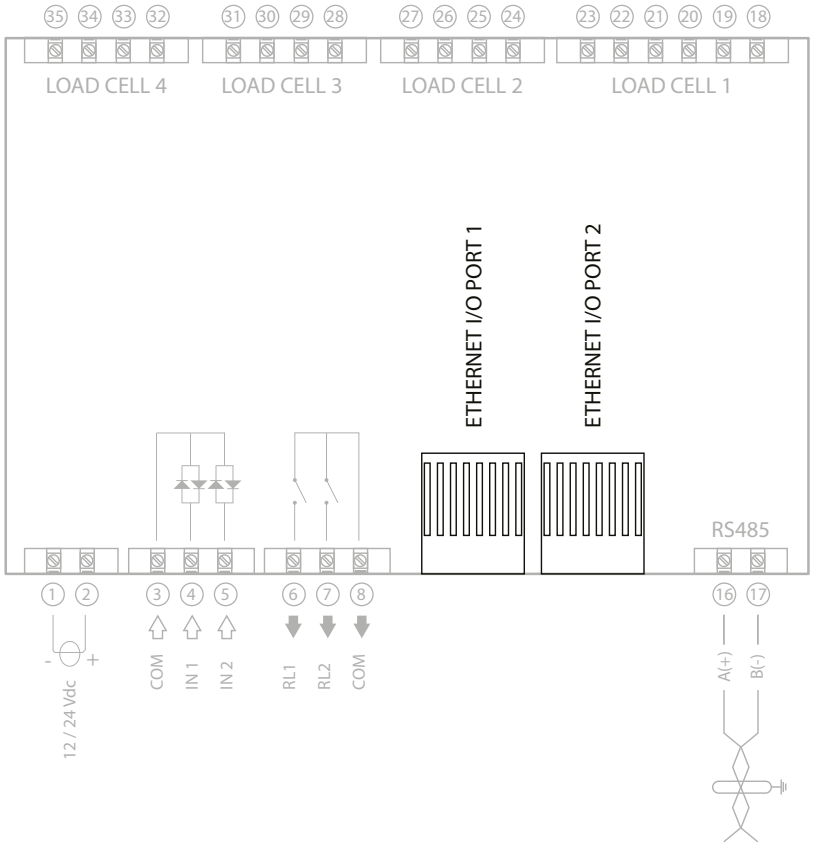
It is recommended that you carefully follow the instructions for programming the weight transmitter; performing actions not indicated in this manual could compromise the functionality of the scale.

Manuals are available from Rice Lake Weighing Systems at www.ricelake.com/manuals
Warranty information is available at www.ricelake.com/warranties

Any problem with the product must be reported to the manufacturer or to the retailer where it was purchased.
Always TURN OFF THE POWER SUPPLY prior to installation or repair action.

Connection

SCT-4X-ETHIP, SCT-4X-PRONET, SCT-4X-MODTCP

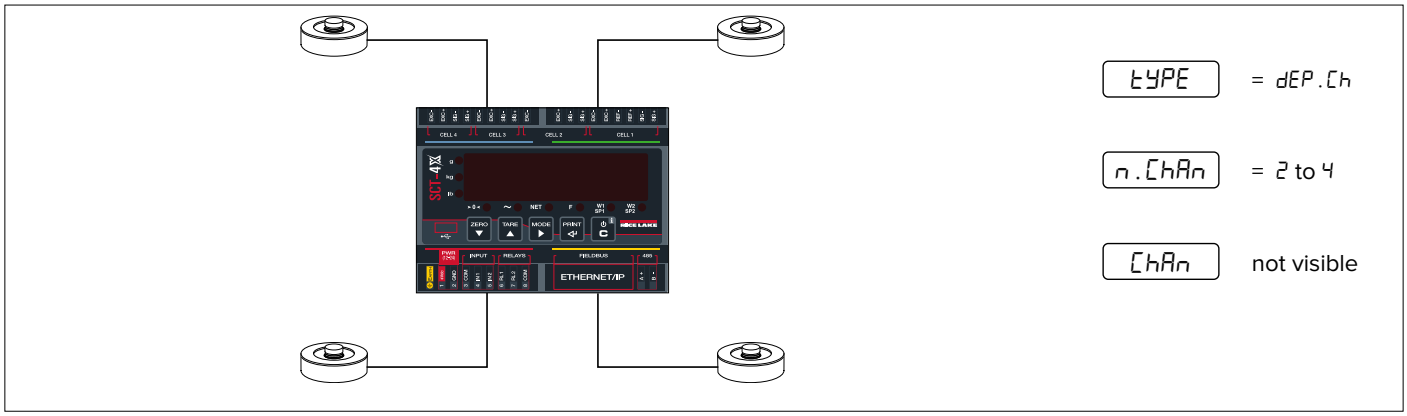


The connection to the Fieldbus goes through one of the two **ETHERNET** standard connectors of the device. Either port can be used to connect to the PLC or DCS system.

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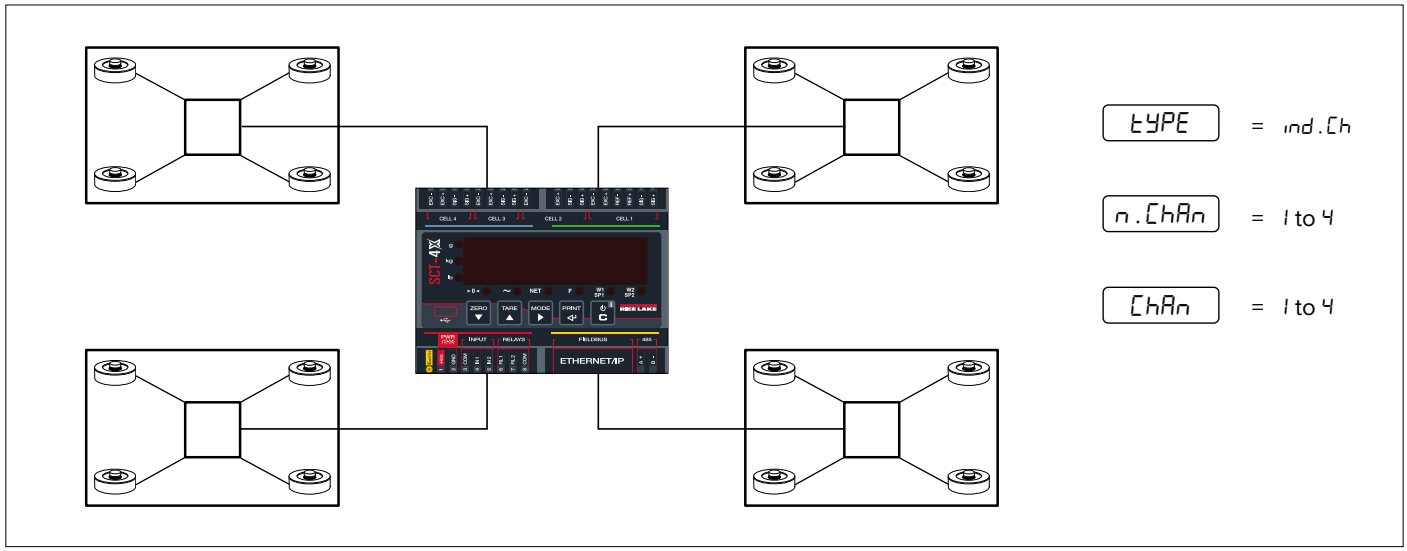
MODE 1 “DEP.CH”

Allows you to connect the load cells directly, equalize them (if necessary) and transmit the data of each cell and the total weight via Fieldbus.



MODE 2 “IND.CH”

Allows you to manage up to 4 independent scales and transmit all the data of each scale via Fieldbus.



The Fieldbus can be set through the configuration menu, following the procedure below:

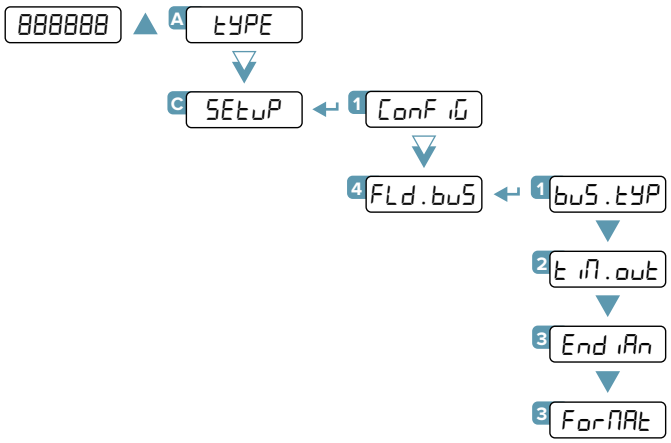
1. Access to the configuration menu:

- Restart the device.
- Press the key ▲ when 888888 is displayed.

2. Scroll the menu with the key ▼ until SEtuP is displayed and press ↵.

3. Scroll the menu with the key ▼ until FLd.buS is displayed and press ↵.

4. Selected the fieldbus type used and configure its parameters.



MENU OVERVIEW buS.tYP

Depending on the selected Fieldbus, set the appropriate configuration parameters:

For Profinet:

ProFin ↵	AUt.CFG	Dynamic IP configuration.
	iP.Add	Static IP address.
	nEt.MSK	Subnet mask.
	GAt.WAY	Gateway.

i

The name of the Profinet node to use in the project linked to the network master node is **dini <IP4>**, <IP4> being the last Byte of the IP address incorporated in the device configuration, also when dynamic IP is used.
Ex. IP - 192.168.1.10, the node name will be **dini-010**.

If AUT.CFG parameter = YES, the IP address and Profinet name can be assigned directly from the network.

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For Ethernet/IP:

Eth. IP ↵	Aut.CFG	Dynamic IP configuration.
	IP.Add	Static IP address.
	nEt.MSK	Subnet mask.
	GAt.WAY	Gateway.

For Modbus TCP:

Mb.tCP ↵	Aut.CFG	Dynamic IP configuration.
	IP.Add	Static IP address.
	nEt.MSK	Subnet mask.
	GAt.WAY	Gateway.

MENU OVERVIEW t iM.out | End iAn | ForMAt

t iM.out ↵	no	"Time out" error message displayed only once.
	YES	"Time out" error message repeated.

End iAn ↵	b iG	Big Endian.
	L ittLE	Little Endian.

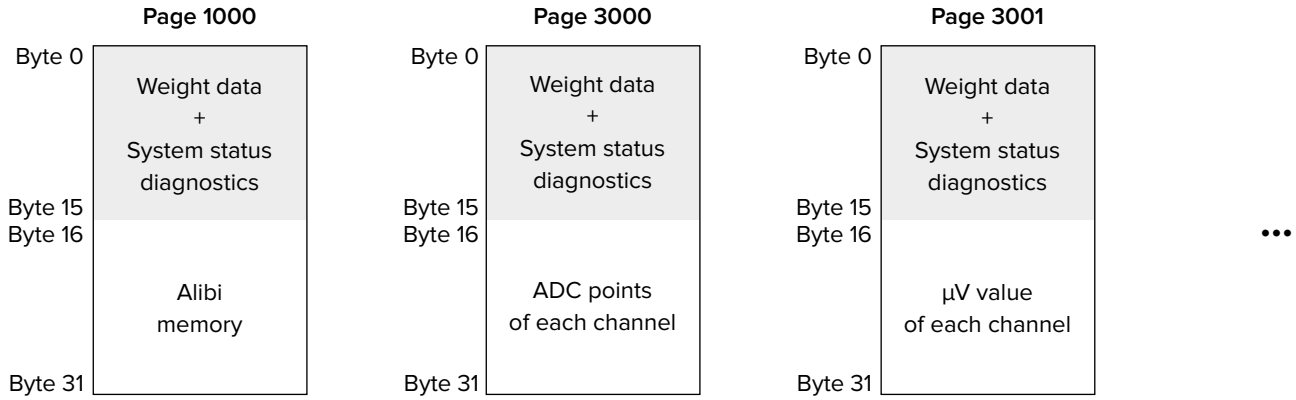
i This parameter changes the order of the data sent to and received from the PLC. If data is available but does not relate to data on the display, try changing this parameter.

ForMAt ↵	uns. int	Unsigned integer (read the sign from Input status register).
	FLoAt	Float.
	S iG. int	Signed integer.

Data Reading (Input Area)

- The available data depends on the selected operating mode (see page 5).
- The available data is divided into pages.
- Depending on the Fieldbus, the data area size can be up to 128 Bytes.
- The size of each SCT-4X page is 32 Bytes (even if the page size is 64 or 128 Bytes, only the first 32 available Bytes are used).
- The first 16 Bytes of each page always include the data concerning weight and weighing system status.
- Bytes 16 to 31 contain additional information, depending on the selected page (setup data, alibi memory etc.)
- The page selected by default is:
  - 3001 (0x0BB9) for MODE 1 "DEP.CH" and MODE 2 "IND.CH" (single scale).
  - 2000 (0x07D0) for MODE 2 "IND.CH" (multi-scale).
- In factory configuration the data format is Big Endian. To change the format, follow the procedure at page 7.
- Weight data are expressed with positive integers. (Ex. 12,345 ⟶ 0x3039).
- µV and ADC points are expressed with positive and negative integers. (Ex. -12,345 ⟶ 0xCFC7).

Model of the pages in the Input Area:



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Avaliable Pages

Page	Mode		Name	Description		Access
	dEP.Ch	ind.Ch				
1000 (0x03E8)	●	●	Alibi memory	See page 39		**R**
2000 (0x03E8)	●		Extimated gross weight channels	See page 11		**R**
2000 (0x07D0)		●	Gross weights	See page 12		**R**
2001 (0x07D1)		●	Net weights	See page 12		**R**
2002 (0x07D2)		●	Tare weights	See page 12		**R**
2003 (0x07D3)		●	Net + tare weights	See page 13		**R**
2004 (0x07D4)	●		Load distribution percentages	See page 14		**R**
2013 (0x07DD)	●		Channel status	See page 15		**R**
3000 (0x0BB8)	●	●	ADC values	See page 16		**R**
3001 (0x0BB9)	●	●	µV values (*)	See page 16		**R/W**
5000 (0x1388)	●	●	Calibration 0 - Scale parameters	See page 17		**R/W**
5001 (0x1389)	●	●	Calibration 1 - Calibration points weight	See page 18		**R/W**
5002 (0x138A)	●	●	Calibration 2 - Calibration points ADC value	See page 19		**R/W**
5003 (0x138B)	●	●	Calibration 3 - Operative mode	See page 20		**R/W**
5004 (0x138C)	●	●	Calibration 4 - Filter and metrical parameters (1/2)	See page 21		**R/W**
5005 (0x138D)	●	●	Calibration 5 - Metrical parameters (2/2)	See page 22		**R/W**
5006 (0x138E)	●	●	Calibration 6 - Quick calibration	See page 23		**R/W**
5007 (0x138F)	●	●	Advanced filters	See page 24		**R/W**
5008 (0x1390)	●	●	Anti-peak filter	See page 25		**R/W**
5010 (0x1392)	●	●	Tare type	See page 26		**R/W**
5011 (0x1393)	●	●	SN and firmware version	See page 27		**R**
5012 (0x1394)	●		Unbalancing parameters	See page 40		**R/W**
5013 (0x1395)	●		Stored unbalancing percentages	See page 28		**R**
5015 (0x1397)	●	●	Unit 2	See page 29		**R/W**
5030 (0x13A6)	●	●	Fieldbus configuration	See page 30		**R/W**
5031 (0x13A7)	●	●	Equalization coefficients	See page 31		**R/W**
5050 (0x13BA)	●		Profinet name (only for SCT-4X-PRONET)	See page 31		**R/W**
5100 (0x13EC)	●	●	Inputs configuration	See page 32		**R/W**
5101 (0x13ED) **5106** (0x13F2)	●	●	Outputs configuration	See page 33		**R/W**
6100 (0x17D4)	●	●	Setpoint values	See page 34		**R**

Page selected by default at power-up:

- *2000 for mode ind.Ch*
- *3001 for mode dEP.Ch*

Weight Data and Alibi Memory "Page 1000" (0x03E8)

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	H	Gross weight of the requested alibi ID with command **30** (0x1E) **"ALIBI MEMORY READING"**.			*B0*	*L*
17		B2					*B1*	
18	30010	B1	L				*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	Tare weight of the requested alibi ID.			*B0*	*L*
21		B2					*B1*	
22	30012	B1	L				*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	Alibi ID.			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B1	-	Alibi Status Register (see Table 4 page 19).			*B0*	-
29		B0					*B1*	
30	-	-	-	Not used.			-	-
31								

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Extimated Gross Weight Channels "Page 2000" (0x07D0)

dEP.Ch

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B1	-	Status Register Scale 1 (see Table 5 page 37).			*B0*	-
1		B0					*B1*	
2	30002	B1	-	Status Register Scale 2 (see Table 5 page 37).			*B0*	-
3		B0					*B1*	
4	30003	B1	-	Status Register Scale 3 (see Table 5 page 37).			*B0*	-
5		B0					*B1*	
6	30004	B1	-	Status Register Scale 4 (see Table 5 page 37).			*B0*	-
7		B0					*B1*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	H	Extimated gross weight value channel 1.			*B0*	*L*
17		B2					*B1*	
18	30010	B1	L				*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	Extimated gross weight value channel 2.			*B0*	*L*
21		B2					*B1*	
22	30012	B1	L				*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	Extimated gross weight value channel 3.			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	Extimated gross weight value channel 4.			*B0*	*L*
29		B2					*B1*	
30	30016	B1	L				*B2*	*H*
31		B0					*B3*	

Tares, Net and Gross Weights "Page 2000 - 2001 - 2002" (0x07D0 - 0x07D1 - 0x07D2)

ind.Ch

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B1	-	Status Register Scale 1 (see Table 5 page 37).			*B0*	-
1		B0					*B1*	
2	30002	B1	-	Status Register Scale 2 (see Table 5 page 37).			*B0*	-
3		B0					*B1*	
4	30003	B1	-	Status Register Scale 3 (see Table 5 page 37).			*B0*	-
5		B0					*B1*	
6	30004	B1	-	Status Register Scale 4 (see Table 5 page 37).			*B0*	-
7		B0					*B1*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	

				Page 2000 (0x07D0)	**Page 2001** (0x07D1)	**Page 2002** (0x07D2)		
16	30009	B3	H	Gross weight scale 1.	Net weight scale 1.	Tare scale 1.	*B0*	*L*
17		B2					*B1*	
18	30010	B1	L				*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	Gross weight scale 2.	Net weight scale 2.	Tare scale 2.	*B0*	*L*
21		B2					*B1*	
22	30012	B1	L				*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	Gross weight scale 3.	Net weight scale 3.	Tare scale 3.	*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	Gross weight scale 4.	Net weight scale 4.	Tare scale 4.	*B0*	*L*
29		B2					*B1*	
30	30016	B1	L				*B2*	*H*
31		B0					*B3*	

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Net Weights and Tares "Page 2003" (0x07D3)

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B1	-	Status Register Scale 1 (see Table 5 page 37).			*B0*	-
1		B0					*B1*	
2	30002	B1	-	Status Register Scale 2 (see Table 5 page 37).			*B0*	-
3		B0					*B1*	
4	30003	B1	-	Status Register Scale 3 (see Table 5 page 37).			*B0*	-
5		B0					*B1*	
6	30004	B1	-	Status Register Scale 4 (see Table 5 page 37).			*B0*	-
7		B0					*B1*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	H	Net weight scale 1.			*B0*	*L*
17		B2					*B1*	
18	30010	B1	L	Tare scale 1.			*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	Net weight scale 2.			*B0*	*L*
21		B2					*B1*	
22	30012	B1	L	Tare scale 2.			*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	Net weight scale 3.			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L	Tare scale 3.			*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	Net weight scale 4.			*B0*	*L*
29		B2					*B1*	
30	30016	B1	L	Tare scale 4.			*B2*	*H*
31		B0					*B3*	

Load Distribution Percentage. **"Page 2004"** (0x07D4)

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Channel 1 load percentage.			*B0*	*L*
17		B0					*B1*	
18	30010	B1	-	Channel 2 load percentage.			*B0*	*H*
19		B0					*B1*	
20	30011	B1	-	Channel 3 load percentage.			*B0*	*L*
21		B0					*B1*	
22	30012	B1	-	Channel 4 load percentage.			*B0*	*H*
23		B0					*B1*	
24	30013	-	.	Not used.			-	-
25		-					-	
26	30014	-	.				-	-
27		.					-	
28	30015	.	-				-	-
29		.					-	
30	30016	-	-				-	-
31								

In this page, data are expressed as integer values with 2 decimals (from -327.68% to +327.67%)
EXAMPLES:
The value -100.00% is visualized as 0xD8F0.
The value 50.00% is visualized as 0x1388.

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Weight Data and ADC Points of Each Channel "Page 3000" (0x0BB8)

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	H	ADC points of Channel 1.			*B0*	*L*
17		B2					*B1*	
18	30010	B1	L				*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	ADC points of Channel 2.			*B0*	*L*
21		B2					*B1*	
22	30012	B1	L				*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	ADC points of Channel 3.			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	ADC points of Channel 4.			*B0*	*L*
29		B2					*B1*	
30	30016	B1	L				*B2*	*H*
31		B0					*B3*	

Weight Data and Microvolt of Each Channel "Page 3001" (0x0BB9)

Byte	*Modbus TCP Register*	Big Endian		Data			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	µV Channel 1.			*B0*	-
17		B0					*B1*	
18	30010	B1	-	µV Channel 2.			*B0*	-
19		B0					*B1*	
20	30011	B1	-	µV Channel 3.			*B0*	-
21		B0					*B1*	
22	30012	B1	-	µV Channel 4.			*B0*	-
23		B0					*B1*	
24	30013	-	-	Not used.			-	-
25		-					-	
26	30014	-	-				-	-
27		-					-	
28	30015	-	-				-	-
29		-					-	
30	30016	-	-				-	-
31		-					-	

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Calibration 0 - Scale Parameters "Page 5000" (0x1388)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	-	Unit of measure	0 = g	1 = kg	*B0*	*L*
17		B2			2 = t	3 = lb	*B1*	
18	30010	B1	-	Range 1 division			*B2*	*H*
19		B0					*B3*	
20	30011	B3	-	Range 2 division			*B0*	*L*
21		B2					*B1*	
22	30012	B1	-	Decimals			*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	Range 1			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	Range 2			*B0*	*L*
29		B2					*B1*	
30	30016	B1	L				*B2*	*H*
31		B0					*B3*	

To set the data, write the same positions in the output area and use command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equals to 5000.

To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

Calibration 1 - Calibration Points Weights "Page 5001" (0x1389)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Number of calibration points.			*B0*	-
17		B0					*B1*	
18	30010	B1	-	Sample weight 1.			*B0*	*L*
19		B0					*B1*	
20	30011	B1	-				*B2*	*H*
21		B0					*B3*	
22	30012	B1	-	Sample weight 2.			*B0*	*L*
23		B0					*B1*	
24	30013	B1	-				*B2*	*H*
25		B0					*B3*	
26	30014	B1	-	Sample weight 3.			*B0*	*L*
27		B0					*B1*	
28	30015	B1	-				*B2*	*H*
29		B0					*B3*	
30	30016	B1	-	Calibration state (same as page 5006, only reading)			*B0*	-
31		B0					*B1*	

To set the data, write the same positions in the output area and use command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equals to 5001.
To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

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Calibration 2 - Calibration Points ADC "Page 5002" (0x138A)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	H	ADC value of the zero point.			*B0*	*L*
17		B2					*B1*	
18	30010	B1	L				*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	ADC value of the point 1.			*B0*	*L*
21		B2					*B1*	
22	30012	B1	L				*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	ADC value of the point 2.			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	ADC value of the point 3.			*B0*	*L*
29		B2					*B1*	
30	30016	B1	L				*B2*	*H*
31		B0					*B3*	

To set the data, write the same positions in the output area and use command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equals to 5002.
To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

Calibration 3 - Operative Mode "Page 5003" (0x138B)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Operative mode	1 = dependent channels 2 = independent channels		*B0*	-
17		B0					*B1*	
18	30010	B1		Number of channels			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Pre-calibration state	0 = no.		*B0*	-
21		B0			1 = yes.		*B1*	
22	30012	B1	-	Setup size			*B0*	-
23		B0					*B1*	
24	30013	B1	-	Legal for trade	0 = internal use.		*B0*	-
25		B0			1 = restricted.		*B1*	
26	30014	B1	-	Available channels.			*B0*	-
27		B0					*B1*	
28	30015	-	-	Not used.			-	-
29		-					-	
30	30016	-	-				-	-
21		-					-	

To set the data, write the same positions in the output area and use command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equals to 5003.
The instrument will permanently save the setting and reboot.

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Calibration 4 - Filter and Metrical Parameters (1/2) "Page 5004" (0x138C)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Filter index (see Table 6 a pag. 35)			*B0*	-
17		B0					*B1*	
18	30010	B1	-	Rate custom filter.			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Win custom filter.			*B0*	-
21		B0					*B1*	
22	30012	B1	-	Avg custom filter.			*B0*	-
23		B0					*B1*	
24	30013	B1	-	Pit custom filter.			*B0*	-
25		B0					*B1*	
26	30014	B1	-	Auto zero at start-up.			*B0*	-
27		B0					*B1*	
28	30015	B1	-	Auto zero percentage.			*B0*	-
29		B0					*B1*	
30	30016	B1	-	Zero percentage (by key / command)			*B0*	-
31		B0					*B1*	

To set the data, write the same positions in the output area and use command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equals to 5004.
To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

Calibration 5 - Metrical Parameters (2/2) "Page 5005" (0x138D)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Zero tracking.	(see Table 6 page 35)		*B0*	-
17		B0					*B1*	
18	30010	B1	-	Division for stability.	(number of divisions)		*B0*	-
19		B0					*B1*	
20	30011	B1	-	G value of the calibration zone.	Gvalue decimals – 9.7		*B0*	-
21		B0					*B1*	
22	30012	B1	-	G value of the use zone.	E.g. g=9.80390, the value displayed will be 10390.		*B0*	-
23		B0					*B1*	
24	30013	B1	-	Zero tracking speed	0 to 500 ms		*B0*	-
25		B0					*B1*	
26	30014	B1	-	Stability detection time	10 to 1000 ms		*B0*	-
27		B0					*B1*	
28	30015	B1	-	Stability filter time	0 to 2000 ms 0 = disabled		*B0*	-
29		B0					*B1*	
30	30016	B1	-	Stability filter divisions	1 to 100 divisions		*B0*	-
31		B3					*B1*	

To set the data, write the same positions in the output area and use command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equals to 5005.
To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

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Calibration 6 - Condensed Calibration "Page 5006" (0x138E)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Unit of measure.			*B0*	-
17		B0					*B1*	
18	30010	B1	-	Division.			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Number of decimals.			*B0*	-
21		B0					*B1*	
22	30012	B3	H	Capacity.			*B0*	*L*
23		B2					*B1*	
24	30013	B1	L				*B2*	*H*
25		B0					*B3*	
26	30014	B3	H	Sample weight for calibration.			*B0*	*L*
27		B2					*B1*	
28	30015	B1	L				*B2*	*H*
29		B0					*B3*	
30	30016	B1	-	Calibration state (reading only)	0 (0x00) = Calibration not started.		*B0*	-
					1 (0x01) = Acquisition in progress.			
					2 (0x02) = Acquistion OK.			
					3 (0x03) = Acquisition error.			
31		B0			4 (0x04) = Calibration OK.		*B1*	
					5 (0x05) = Calibration error.			
					6 (0x06) = Zero calibration in progress.			
					7 (0x07) = Unbalancing acquisition in prog.			

To set the data, write to the same position in the output area and use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equal to 5006.

To make the changes permanent, use command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

Automatically will be set:

Division 2 = 0, Range 2 = 0, Number of calibration points = 1, Sample weight 2 = 0, Sample weight 3 = 0, ADC value of the point 2 = 0, ADC value of the point 3 = 0.

Advanced Filters "Page 5007" (0x138F)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Filter 1 ID.			*B0*	-
17		B0					*B1*	
18	30010	B1	-	Filter 1 value.			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Filter 2 ID.			*B0*	-
21		B0					*B1*	
22	30012	B1	-	Filter 2 value.			*B0*	-
23		B0					*B1*	
24	30013	B1		Filter 3 ID.			*B0*	-
25		B0					*B1*	
26	30014	B1		Filter 3 value.			*B0*	-
27		B0					*B1*	
28	30015	-	-	Not used.			-	-
...								
31	30016							

ID	Filter type	Value
0	-	Filter disabled.
1	Coarse	Frequency, 1 decimal (the value 30 stands for 3,0 Hz)
4	Selective	Frequency, 1 decimal (the value 500 stands for 50,0 Hz)
5	Fine	Percentage, 2 decimal (the value 100 stands for 10%)

To set the data, write to the same position in the output area and use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equal to 5007.
To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

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Anti-Peak Filter "Page 5008" (0x139A)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Lock divisions (PA.LA.dU).			*B0*	-
17		B0					*B1*	
18	30010	B1	-	Unlocked to locked switch time (PA.LA.tM, 0,01 s).			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Unlock divisions (PA.d iU).			*B0*	-
21		B0					*B1*	
22	30012	B1	-	Locked band divisions (PA.bn.dU).			*B0*	-
23		B0					*B1*	
24	30013	B1	-	Locked peak time (PA.t iME, 0,01 s).			*B0*	-
25		B0					*B1*	
26	30014	-	-	Not used.			-	-
...								
31	30016							

To set the data, write to the same position in the output area and use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 equal to 5008.
To make the changes permanent, use the command **36** (0x24) **"DATA WRITING AND STORAGE"** with parameter 1 equal to 0.

Tare Type "Page 5010" (0x1392)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Tare type.	0 = disabled	1 = locked	*B0*	-
17		B0			2 = unlocked		*B1*	
18	30010	B1	-	Channel excluded in dependent channels mode.			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Use function			*B0*	-
21		B0					*B1*	
22	30012	B1	-	Restore zero			*B0*	-
23		B0					*B1*	
24	30013	B1	-	Restore tare			*B0*	-
25		B0					*B1*	
26	30014	-	-	Not used.			-	-
...								
31	30016							

To set the data, write to the same position in the output area and use the command **27** (0x1B) **"SETUP WRITING"** with PARAMETER 1 equal to 5010.
To make the changes permanent, send the command **28** (0x1C) **"SAVE SETUP"**.

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Transmitter SN and Firmware "Page 5011" (0x1393)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Hardware ID			*B0*	-
17		B0					*B1*	
18	30010	B3	H	Firmware version.	0		*B0*	*L*
19		B2			release		*B1*	
20	30011	B1	L		sub-release		*B2*	*H*
21		B0			bug-release		*B3*	
22	30012	B3	H	SN			*B0*	*L*
23		B2					*B1*	
24	30013	B1	L				*B2*	*H*
25		B0					*B3*	
26	30014	B1	-	Legal Hardawre ID			*B0*	*L*
27		B0		Legal ID			*B1*	
28	30015	-	-	Not used.			-	-
...								
31	30016							

Stored Dependent Channel Load Distribution "Page 5013" (0x1359)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Percentage Ch 1			*B1*	-
17		B0					*B0*	
18	30010	B1	-	Percentage Ch 2			*B0*	-
19		B0					*B1*	
20	30011	B1	-	Percentage Ch 3			*B0*	-
21		B0					*B1*	
22	30012	B1	-	Percentage Ch 4			*B0*	-
23		B0					*B1*	
24	30013	-	-	Not used.			-	-
...								
31	30016							

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Unit 2 (Function CONU) "Page 5015" (0x1397)

Byte	*Registro Modbus TCP*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Decimal unit	0 to 4		*B0*	-
17		B0					*B1*	
18	30010	B1	-	Unit 2	0 = Default 1 = Custom		*B0*	-
19		B0					*B1*	
20	30011	B1	-	Unit 2 division	1 , 2 ,5 ,10, 20, 50		*B0*	-
21		B0					*B1*	
22	30012	B3	H	Unit conversion factor 2 (fixed-point integer 5 decimal)			*B0*	*L*
23		B2					*B1*	
24	30013	B1	L				*B2*	*H*
25		B0					*B3*	
26	30014	-	-	Not used.			-	-
...								
31	30016							

To set the data, write to the same position in the output area and use the command 27 (0x1B) "WRITE SETUP" with parameter 1 equal to 5015.
To make the changes permanent use command 28 (0x1C) "SAVE SETUP."

Fieldbus Configuration "Page 5030" (0x13A6)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Baud rate index.			*B0*	-
17		B0					*B1*	
18	30010	B3	H	IP.			*B0*	*L*
19		B2					*B1*	
20	30011	B1	L				*B2*	*H*
21		B0					*B3*	
22	30012	B3	H	Subnet mask.			*B0*	*L*
23		B2					*B1*	
24	30013	B1	L				*B2*	*H*
25		B0					*B3*	
26	30014	B3	H	Gateway.			*B0*	*L*
27		B2					*B1*	
28	30015	B1	L				*B2*	*H*
29		B0					*B3*	
30	30016	B1	-	Dynamic IP (*) / ID.	(*)	0 = disabled	-	-
31		B0				1 = enabled	-	

	Profibus	Devicenet	Canopen	
ID	0 to 126	0 to 63	1 to 127	
Baud rate	-	0: 500kBaud 1: 250kBaud 2: 125kBaud	0: 1MBaud 1: 800kBaud 2: 500kBaud 3: 250kBaud 4: 125kBaud	5: 100kBaud 6: 50kBaud 7: 20kBaud 8: 10kBaud

To set the data, write to the same position in the output area and use the command **27** (0x1B) **"SETUP WRITING"** with PARAMETER 1 equal to 5030.
To activate the new parameters reboot the instrument with the command **34** (0x22) **"REBOOT DEVICE"**.

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Profinet Name (only for SCT-1SX-PRONET) "Page 5031" (0x13A7)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	-	-	1st Profinet name character (ASCII code)			-	-
17		-		2nd Profinet name character (ASCII code)			-	-
18	30010	-	-	3rd Profinet name character (ASCII code)			-	-
19		-		4th Profinet name character (ASCII code)			-	-
20	30011	-	-	5th Profinet name character (ASCII code)			-	-
21		-		6th Profinet name character (ASCII code)			-	-
22	30012	-	-	7th Profinet name character (ASCII code)			-	-
23		-		8th Profinet name character (ASCII code)			-	-
24	30013	-	-	9th Profinet name character (ASCII code)			-	-
25		-		10th Profinet name character (ASCII code)			-	-
26	30014	-	-	11th Profinet name character (ASCII code)			-	-
27		-		12th Profinet name character (ASCII code)			-	-
28	30015	-	-	13th Profinet name character (ASCII code)			-	-
29		-		14th Profinet name character (ASCII code)			-	-
30	30016	-	-	15th Profinet name character (ASCII code)			-	-
31		-		16th Profinet name character (ASCII code)			-	-

Allowed characters:

- a to z (lower case)
- 0 to 9
- symbol "-"

To set the data, write to the same position in the output area and use the command **56** (0x38) **"SAVE PAGE"** with PARAMETER 1 equal to 5031.
To make the changes permanent, send the command **28** (0x1C) **"SAVE SETUP"**.
To activate the new parameters reboot the instrument with the command **34** (0x22) **"REBOOT DEVICE"**.

Inputs Configuration "Page 5100" (0x13EC)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Input 1 function (page 48).			*B0*	-
17		B0					*B1*	
18	30010	B1	-	Input 2 function (page 48).			*B0*	-
19		B0					*B1*	
20	30011	-	-	Not used.			-	-
...								
31	30016							

To set the data, write the same positions in the output area and use command **56** (0x38) **"SAVE PAGE"** with PARAMETER 1 equals to 5100.
To make the changes permanent, send the command **28** (0x1C) **"SAVE SETUP"**.

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Outputs Configuration "Pages 5101 - 5106" (0x13ED - 13F2)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B1	-	Output function (see page 50). (*)			*B1*	-
17		B0					*B0*	
18	30010	B1	-	Contact type. (*)	0 = Normally open		*B0*	-
19		B0			1 = Normally close		*B1*	
20	30011	B1	-	Activation Mode. (*)	0 = Direct		*B0*	-
21		B0			1 = At stability		*B1*	
22	30012	B1	-	Hysteresis. (*)	0 = Disabled		*B0*	-
23		B0			1 = Enabled		*B1*	
24	30013	B1	-	Sign. (*)	0 = Positive		*B1*	-
25		B0			1 = Negative		*B0*	
26	30014	B1	-	Activation delay. (*)	value in 0,1 s (max. 1000)		*B0*	-
27		B0					*B1*	
28	30015	B1	-	Activation time. (*)	value in 0,1 s (max. 1000)		*B1*	-
29		B0					*B0*	
30	30016	-	-	Not used.			-	-
31								

(*)
Page 5101 - Output 1
Page 5102 - Output 2
Page 5103 - Output 3
Page 5104 - Output 4

To set the data, write the same positions in the output area and use command **56** (0x38) **"SAVE PAGE"** with PARAMETER 1 equals to 5101-5104.
To make the changes permanent, send the command **28** (0x1C) **"SAVE SETUP"**.

Setpoint Values (1/2) "Page 6100" (0x17D4)

Byte	*Modbus TCP Register*	Big Endian		Dato			Little Endian	
0	30001	B3	H	Gross weight.			*B0*	*L*
1		B2					*B1*	
2	30002	B1	L				*B2*	*H*
3		B0					*B3*	
4	30003	B3	H	Net weight.			*B0*	*L*
5		B2					*B1*	
6	30004	B1	L				*B2*	*H*
7		B0					*B3*	
8	30005	B1	-	Input Status Register (see Table 1 page 35).			*B1*	-
9		B0					*B0*	
10	30006	B1	-	Command Status Register (see Table 3 page 36).			*B0*	-
11		B0					*B1*	
12	30007	B1	-	Output Status Register (see Table 2 page 35).			*B0*	-
13		B0					*B1*	
14	30008	B1	-	Selected page - Data format (bit 0 to 13) (bit 14 to 15)	0 = uns. integer	01 = sig. integer	*B0*	-
15		B0			10 = float		*B1*	
16	30009	B3	H	ON value Setpoint 1.			*B0*	*L*
17		B2					*B1*	
18	30010	B1	L				*B2*	*H*
19		B0					*B3*	
20	30011	B3	H	OFF value Setpoint 1.			*B0*	*L*
21		B2					*B1*	
22	30012	B1	L				*B2*	*H*
23		B0					*B3*	
24	30013	B3	H	ON value Setpoint 2.			*B0*	*L*
25		B2					*B1*	
26	30014	B1	L				*B2*	*H*
27		B0					*B3*	
28	30015	B3	H	OFF value Setpoint 2.			*B0*	*L*
29		B2					*B1*	
30	30016	B1	L				*B2*	*H*
31		B0					*B3*	

Integers or float data depending on the indicator configuration.

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Table 1 - **Input Status Register**

Byte	Modbus TCP Register	Bit	Description	Bit meaning 0	Bit meaning 1
8	30005	0 (LSB)	Net weight polarity.	+	-
		1	Gross weight polarity.	+	-
		2	Weight stability.	No	Yes
		3	Underload condition.	No	Yes
		4	Overload condition.	No	Yes
		5	Tare condition entered.	No	Yes
		6	Manual Tare condition.	No	Yes
		7 (MSB)	Gross weight = 0.	No	Yes
9		8 (LSB)	Input 1.	Deactivated	Activated
		9	Input 2.	Deactivated	Activated
		10	Not used.		
		11			
		12	Endian.	Big Endian	Little Endian
		13	Multi-scale.	No	Yes
		14	Channel displayed (low bit).	00 = channel 1	01 = channel 2
		15 (MSB)	Channel displayed (high bit).	10 = channel 3	11 = channel 4

Table 2.1 - **Output Status Register** (multi-scale)

Byte	Modbus TCP Register	Bit	Description	Bit meaning 0	Bit meaning 1
12	30007	0 (LSB)	Relay 1.	Not energized	Energized
		1	Relay 2.	Not energized	Energized
		2	Not used.		
		3			
		4			
		5			
		6			
		7 (MSB)			
13		8 (LSB)	Error channel 1.	No	Yes
		9	Error channel 2.	No	Yes
		10	Error channel 3.	No	Yes
		11	Error channel 4.	No	Yes
		12	Channels global error / Unbalancing	No	Yes
		13	Selected scale for calibration / parameters sending	00 = scale 1	01 = scale 2
		14		10 = scale 3	11 = scale 4
		15 (MSB)	Not used		

Table 2.2 - **Output Status Register** (Single Scale)

Byte	Modbus TCP Register	Bit	Description	Bit meaning 0	Bit meaning 1
12	30007	0 (LSB)	Relay 1.	Not energized	Energized
		1	Relay 2.	Not energized	Energized
		2	Not used.		
		3			
		4			
		5			
		6	Unit of measure.	00 = g	01 = kg
		7 (MSB)		10 = t	11 = lb
13		8 (LSB)	Error channel 1.	No	Yes
		9	Error channel 2.	No	Yes
		10	Error channel 3.	No	Yes
		11	Error channel 4.	No	Yes
		12	Channels global error / Unbalancing	No	Yes
		13	Decimals.	00 = 0	01 = 1
		14		10 = 2	11 = 3
		15 (MSB)	Not used.		

Table 3 - **Command Status Register**

Byte	Modbus TCP Register	Bit	Description	Significato bit
10	30006	0 (LSB)	Processed command count.	Value in module 16.
		1		
		2		
		3		
		4	Result of last command received:	0 = Command correct and executed. 1 = Incorrect command. 2 = Incorrect command data. 3 = Command not allowed. 4 = Command non-existent.
		5		
		6		
		7 (MSB)		
11		8 (LSB)	Last command received.	
		9		
		10		
		11		
		12		
		13		
		14		
		15 (MSB)		

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Table 4 - **Alibi Status Register**

Byte	Modbus TCP Register	Bit	Description	Bit meaning 0	Bit meaning 1
28	30015	0 (LSB)	Number of rewrites.	From 0 to 255 rewrites.	
		1			
		2			
		3			
		4			
		5			
		6			
		7 (MSB)			
29		8 (LSB)	Scale number.	From 1 to 4.	
		9			
		10			
		11	Type of tare.	Semi-automatic	Manual
		12	Not used.		
		13			
		14			
		15 (MSB)			

Table 5 - **Channel Status Register**

Bit	Description	Bit meaning 0	Bit meaning 1
0 (LSB)	Gross weight polarity.	+	-
1	Weight stability.	No	Yes
2	Underload condition.	No	Yes
3	Overload condition.	No	Yes
4	Gross weight = 0.	No	Yes
5	Net weight polarity.	+	-
6	Tare condition entered.	No	Yes
7 (MSB)	Manual tare condition.	No	Yes
8 (LSB)	Unit of measure.	00 = g	01 = kg
9		10 = t	11 = lb
10	Decimals.	00 = 0	01 = 1
11		10 = 2	11 = 3
12	Scale active.	No	Yes
13	Not used.		
14			
15 (MSB)			

- Commands are sent in the first 10 Bytes of the Output Area.
- Some commands need specific parameters.
- In the first 2 Bytes the command is specified, in Bytes 2 to 5 PARAMETER 1 is specified, in Bytes 6 to 9 PARAMETER 2 is specified.
- Depending on the Fieldbus, the page size can reach 128 Bytes.
- Each SCT-4X page size is 32 Bytes (therefore, even if the page size is 128 Bytes, only the first 32 avalaible Bytes are used).
- Only the first 10 Bytes of each page are used to send commands.
- Data are expressed by default in Big Endian format. To modify the format follow the procedure at page 7.

How to Send a Command

1. If required by the command, insert the required parameters in Bytes 2 to 9.
2. Write the command in Byte 1. The execution of the command occurs when the content in Byte 1 changes.

WARNING: Byte 0 value must equal 0 (0x00).

Byte	*Modbus TCP Register*	Big Endian		Data	Little Endian	
0	**40001**	B1	-	0 (0x00) always zero.	*B0*	-
1		B0		Command (see command list on page 39).	*B1*	
2	**40002**	B3	H	Parameter 1.	*B0*	*L*
3		B2			*B1*	
4	**40003**	B1	L		*B2*	*H*
5		B0			*B3*	
6	**40004**	B3	H	Parameter 2.	*B0*	*L*
7		B2			*B1*	
8	**40005**	B1	L		*B2*	*H*
9		B0			*B3*	
...						
14	**40008**	B1	-	Command counter.	*B0*	-
15		B0			*B1*	

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List of Available Commands

COMMAND	DESCRIPTION	PARAMETER 1	PARAMETER 2
0 (0x00)	No commands.	-	-
1 (0x01)	Zero.	Only for MODE 2 "IND.CH": specify the scale for zeroing.	0 (0x00) = check stability. 1 (0x01) = immediate zero.
2 (0x02)	Tare.	Only for MODE 2 "IND.CH": specify the scale for tare execution.	0 (0x00) = check stability. 1 (0x01) = immediate tare.
3 (0x03)	Manual tare.	Tare value.	Only for MODE 2 "IND.CH": specify the scale for tare execution.
10 (0x0A)	Setpoint 1 writing.	"Threshold" weight for output activation.	"Threshold" weight for output deactivation.
11 (0x0B)	Setpoint 2 writing.	"Threshold" weight for output activation.	"Threshold" weight for output deactivation.
25 (0x19)	Set relay status. (relays must not have a setpoint function)	Bitmask of relays status to be enabled *(bit 0 = relay 1, bit 1 = relay 2).*	Always 0 (0x00).
26 (0x1A)	Setup reading.	Setup page to read 0 to 63 (0x00 to 0x3F).	-
27 (0x1B)	Setup writing.	Setup page to write 0 to 63 (0x00 to 0x3F).	-
28 (0x1C)	Save setup.	-	-
29 (0x1D)	Change page.	Destination page.	-
30 (0x1E)	Alibi memory reading.	Rewriting number.	Weight alibi ID.
31 (0x1F)	Weight storage in alibi memory.	-	-
34 (0x22)	Reboot device.	-	-
35 (0x23)	Data reading.	MODE 1 "DEP.CH" = 0 (0x00). MODE 2 "IND.CH": 0 (0x00) = Scale 1 1 (0x01) = Scale 2 2 (0x02) = Scale 3 3 (0x03) = Scale 4.	-
36 (0x24)	Data writing and storage.	Parameter 1 = 0 (0x00) to store data. Parameter 1 = 500X (0x138x) for page writing.	Scale on which write data
37 (0x25)	Calibration point acquisition.	0 (0x00) = Zero point 1 (0x01) = First point 2 (0x02) = Second point 3 (0x03) = Third point.	Scale on which to acquire the calibration point
38 (0x26)	Cancel ongoing calibration.	-	-
39 (0x27)	Zero calibration.	-	MODE 1 "DEP.CH" = 0 (0x00). MODE 2 "IND.CH": 0 (0x00) = Scale 1 1 (0x01) = Scale 2 2 (0x02) = Scale 3 3 (0x03) = Scale 4.

COMMAND	DESCRIPTION	PARAMETER 1	PARAMETER 2
40 (0x28)	Enable / disable keypad.	1 (0x01): Enable keypad. 0 (0x00): Disable keypad.	-
45 (0x2D)	Zero scale 1 (only for MODE 2 "IND.CH").	-	0 (0x00) = check stability. 1 (0x01) = immediate zero.
46 (0x2E)	Zero scale 2 (only for MODE 2 "IND.CH").	-	
47 (0x2F)	Zero scale 3 (only for MODE 2 "IND.CH").	-	
48 (0x30)	Zero scale 4 (only for MODE 2 "IND.CH").	-	
49 (0x31)	Tare scale 1 (only for MODE 2 "IND.CH").	-	0 (0x00) = check stability. 1 (0x01) = immediate tare.
50 (0x32)	Tare scale 2 (only for MODE 2 "IND.CH").	-	
51 (0x33)	Tare scale 3 (only for MODE 2 "IND.CH").	-	
52 (0x34)	Tare scale 4 (only for MODE 2 "IND.CH").	-	
53 (0x35)	Multi-scale zeroing (only for MODE 2 "IND.CH").	Bitmask indicating the scales for zeroing *(bit 0 = scale 1,* *bit 1 = scale 2,* *bit 2 = scale 3,* *bit 3 = scale 4).*	0 (0x00) = check stability. 1 (0x01) = immediate zero.
54 (0x36)	Multi-scale tare (only for MODE 2 "IND.CH").	Bitmask indicating the scales for tare execution *(bit 0 = scale 1,* *bit 1 = scale 2,* *bit 2 = scale 3,* *bit 3 = scale 4).*	0 (0x00) = check stability. 1 (0x01) = immediate tare.
55 (0x37)	Disable a peripheral device.	Always 0 (0x00).	Bit 0 = 1 disables relay 1. Bit 1 = 1 disables relay 2.
56 (0x38)	Save page.	Page to save.	-
59 (0x3B)	Data format setting.	0 (0x00) = Big Endian. 1 (0x01) = Little Endian.	-
63 (0x3F)	Data type setting.	0 (0x00) = Unsigned integer 1 (0x01) = Signed integer 2 (0x02) = Float	-
64 (0x40)	Unbalancing acquisition.	-	-
66 (0x42)	Theoretical calibration for MODE 1 "DEP.CH". Theoretical calibration scale 1.	See "Theoretical calibration" on page 43	
67 (0x43)	Theoretical calibration scale 2.	See "Theoretical calibration" on page 43	
68 (0x44)	Theoretical calibration scale 3.	See "Theoretical calibration" on page 43	
69 (0x45)	Theoretical calibration scale 4.	See "Theoretical calibration" on page 43	
77 (0x4D)	Beginning equalization (zero acquisition)	-	
78 (0x4E)	Next channel equalization	-	

Note: To run many consecutive times the same command follow this precedure:
- Send the command.
- Delete the content in command Byte (Byte 1).
- Send again the command.

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- Main setup parameters can be configurated via Fieldbus.
- Depending on the Fieldbus, the page size can reach 128 Bytes.
- Each SCT-4X page size is 32 Bytes (therefore, even if the page size is 128 Bytes, only the first 32 avalaible Bytes are used).
- The first 16 Bytes of each page are used to send writing and setup saving commands.
- In Bytes 16 to 31 the value of each parameter must be specified.
- Before modifying the parameters the command **35** (0x23) "**DATA READING**" must be sent.
- Data are expressed by default in Big Endian format. To modify the format, follow the procedure on page 7.
- Data must be expressed with positive integers. Ex. 12,345 ⟶ **12345** (0x3039).

Operating Mode

1. Send the command **35** (0x23) "**DATA READING**".

2. Modify required parameters.

Parameter		Page	*Byte*	*Modbus TCP Register*	*Big Endian*		*Little Endian*	
Description	Possible values							
Operating mode.	0 (0x00) = Independent channels.	**5003** (0x138B)	*16*	*40009*	*B1*	-	*B0*	-
	1 (0x01) = Dependent channels.		*17*		*B0*		*B1*	
Channel number.	0 (0x00) = 1 Channel.		*18*	*40010*	*B1*	-	*B0*	-
	1 (0x01) = 2 Channels.							
	2 (0x02)x = 3 Channels.		*19*		*B0*		*B1*	
	3 (0x03) = 4 Channels.							

3. Save the parameters:
• Write in Bytes 2 to 5 (PARAMETER 1) the value **5003** (0x138B) and send the command **36** (0x24) "**DATA WRITING AND STORAGE**".
The device will restart automatically.

Calibration

1. Write in Bytes 2 to 5 (PARAMETER 1) the value indicating the scale to calibrate and send command **35** (0x23) "**DATA READING**".

2. Modify required parameters.

Parameter			Page	Byte	Modbus TCP Register	Big Endian		Little Endian	
Description	Possible values								
Unit of measure.	0 = kg 1 = g	2 = t 3 = lb	**5006** (0x138E)	16 17	40009	B1 B0	-	B0 B1	-
Resolution.	1, 2, 5.			18 19	40010	B1 B0	-	B0 B1	-
Decimal places.	0, 1, 2, 3, 4, 5.			20 21	40011	B1 B0	-	B0 B1	-
Capacity.	From 1 to 999999.			22 23	40012	B3 B2	H	B0 B1	L
				24 25	40013	B1 B0	L	B2 B3	H
Calibration weight.	From 1 to 999999.			26 27	40014	B3 B2	H	B0 B1	L
				28 29	40015	B1 B0	L	B2 B3	H

3. Save the parameters:
• Write in Bytes 2 to 5 (PARAMETER 1) the value **5006** (0x138E) and send command **36** (0x24) **"DATA WRITING AND STORAGE"**.

4. Acquire calibration points:
• Unload the scale. Write in Bytes 2 to 5 (PARAMETER 1) the value 0 (0x00) and send command **37** (0x25) **"CALIBRATION POINT ACQUISITION"**.
• Check that in Byte 30 and 31 the value is equal to 2 (Acquisition OK).
• Load the scale with the sample weight. Write in Bytes 2 to 5 (PARAMETER 1) the value 1 (0x01) and increase the command counter value (Byte 15).
• Check that in Byte 30 and 31 the value is equal to 4 (Calibration OK).

5. Send the command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 = 0 (0x00) to save the calibration.

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Calibration Linearization

1. Write in Bytes 2 to 5 (PARAMETER 1) the value indicating the scale to calibrate and send command **35** (0x23) "**DATA READING**"

2. Modify required parameters.

Parameter		Page	Byte	Modbus TCP Register	Big Endian		Little Endian	
Description	Possible values $_{10}$							
Calibration point number.	1, 2, 3.	**5001** (0x1389)	16	40009	B1	-	B0	-
			17		B0		B1	
Calibration weight 1.	From 1 to 999999.		18	40010	B3	H	B0	L
			19		B2		B1	
			20	40011	B1	L	B2	H
			21		B0		B3	
Calibration weight 2.	From weight calibration value 1 to 999999.		22	40012	B3	H	B0	L
			23		B2		B1	
			24	40013	B1	L	B2	H
			25		B0		B3	
Calibration weight 3.	From calibration weight 2 to 999999.		26	40014	B3	H	B0	L
			27		B2		B1	
			28	40015	B1	L	B2	H
			29		B0		B3	

3. Save the parameters:
• Write in Bytes 2 to 5 (PARAMETER 1) the value **5006** (0x138E) and send command **36** (0x24) **"DATA WRITING AND STORAGE"**.

4. Acquire calibration points:
• Unload the scale. Write in Bytes 2 to 5 (PARAMETER 1) the value 0 (0x00) and send command **37** (0x25) **"CALIBRATION POINT ACQUISITION"**.
• Check that in Byte 30 and 31 the value is equal to 2 (Acquisition OK).
• Load the scale with the first sample weight. Write in Bytes 2 to 5 (PARAMETER 1) the value 1 (0x01) and increase the command counter value (Byte 15).
• Check that in Byte 30 and 31 the value is equal to 4 (Acquisition OK).
• Load the scale with the second sample weight. Write in Bytes 2 to 5 (PARAMETER 1) the value 1 (0x01) and increase the command counter value (Byte 15).
• Check that in Byte 30 and 31 the value is equal to 4 (Acquisition OK).
• Load the scale with the third sample weight. Write in Bytes 2 to 5 (PARAMETER 1) the value 1 (0x01) and increase the command counter value (Byte 15).
• Check that in Byte 30 and 31 the value is equal to 4 (Calibration OK).

5. Send the command **36** (0x24) **"DATA WRITING AND STORAGE"** with PARAMETER 1 = 0 (0x00) to save the calibration.

Theoretical Calibration

1. Write parameters Bytes:

Byte 2 to 5 (PARAMETER 1) the load cells capacity.
Byte 6 to 9 (PARAMETER 2) the load cells sensitivity.
Byte 10 to 13 (PARAMETER 3) the mechanical tare value (if not known, insert the value 0).

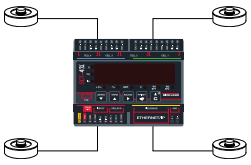
2. Send the command **66** (0x42) "**THEORETICAL CALIBRATION SCALE 1**" (same procedure for the other scales).

Parameter		Page	Byte	Modbus TCP Register	Big Endian		Little Endian	
Description	Possible values $_{10}$							
Theoretical calibration command.	**66** (0x42) / **67** (0x43) **68** (0x44) / **69** (0x45)		*0*	*40001*	*B1*	-	*B0*	-
			1		*B0*		*B1*	
Load cell capacity.	Total load cells capacity (consider the scale decimals).		*2*	*40002*	*B3*	*H*	*B0*	*L*
			3		*B2*		*B1*	
			4	*40003*	*B1*	*L*	*B2*	*H*
			5		*B0*		*B3*	
Load cell sensitivity (*).	Value with 5 decimals (E.g. 2 mV/V ➜ 200000).		*6*	*40004*	*B3*	*H*	*B0*	*L*
			7		*B2*		*B1*	
			8	*40005*	*B1*	*L*	*B2*	*H*
			9		*B0*		*B3*	
Mechanical tare value.	Scale decimals + 1.		*10*	*40006*	*B3*	*H*	*B0*	*L*
			11		*B2*		*B1*	
			12	*40007*	*B1*	*L*	*B2*	*H*
			13		*B0*		*B3*	

3. Save the parameters by sending the command **28** (0x1C) **"SAVE SETUP"**.

(*)

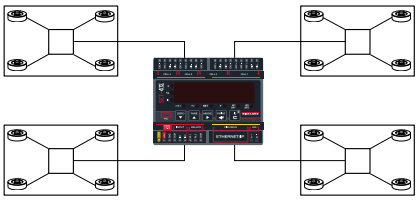
MODE 1 "DEP.CH"



Load cells sensitivity sum value:

(mV/V cell1) + (mV/V cell2) + (mV/V cell3) + (mV/V cell4)

MODE 2 "IND.CH"



For each scale to calibrate, insert the average sensitivity value of the load cells:

$$\frac{(\text{mV/V cell1}) + (\text{mV/V cell2}) + \ldots + (\text{mV/V cell}n)}{n}$$

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Filter / Metric Parameters 1

1. Write in Bytes 2 to 5 (PARAMETER 1) the value indicating the scale to modify and send command **35** (0x23) "**DATA READING**"

2. Modify required parameters.

Parameter		Page	Byte	Modbus TCP Register	Big Endian		Little Endian	
Description	Possible values $_{10}$							
Filter index.	From 0 to 26 (see page 35).	**5004** (0x138C)	16	40009	B1	-	B0	-
			17		B0		B1	
Custom filter.	For manufacturer's use only.		18	40010	B1	-	B0	-
			19		B0		B1	
			20	40011	B1	-	B0	-
			21		B0		B1	
			22	40012	B1	-	B0	-
			23		B0		B1	
			24	40013	B1	-	B0	-
			25		B0		B1	
Auto-zeroing at power-up.	0 = Disabled. 1 = Enabled.		26	40014	B1	-	B0	-
			27		B0		B1	
Auto-zeroing percentage at power-up.	From 0 to 50. From 0 to 10 *(approved version).*		28	40015	B1	-	B0	-
			29		B0		B1	
Zero percentage by key / command.	From 0 to 10. From 0 to 2 *(approved version).*		30	40016	B1	-	B0	-
			31		B0		B1	

3. To save the parameters:

- Write in Bytes 2 to 5 (PARAMETER 1) the value **5004** (0x138C) and send command **36** (0x24) "**DATA WRITING AND STORAGE**".
- Write in Bytes 2 to 5 (PARAMETER 1) the value **0** (0x00) and increase the command counter value (Byte 15).

Metric Parameters 2

1. Write in Bytes 2 to 5 (PARAMETER 1) the value indicating the scale to modify and send command **35** (0x23) "**DATA READING**"

2. Modify required parameters.

Parameter		Page	*Byte*	*Modbus TCP Register*	*Big Endian*		*Little Endian*	
Description	Possible values $_{10}$							
Zero tracking divisions.	See table below.	**5005** (0x138D)	*16*	*40009*	*B1*	-	*B0*	-
			17		*B0*		*B1*	
Divisions for stability.	0 to 99. 0 to 2 *(approved version).*		*18*	*40010*	*B1*	-	*B0*	-
			19		*B0*		*B1*	
"g" calibration zone.	See note below.		*20*	*40011*	*B1*	-	*B0*	-
			21		*B0*		*B1*	
"g" area of use.	See note below.		*22*	*40012*	*B1*	-	*B0*	-
			23		*B0*		*B1*	

VALUE	MEANING
0 (0x00)	Disabled.
1 (0x01)	1 / 4 Division.
2 (0x02)	1 / 2 Division.
4 (0x04)	1 Division.
8 (0x08)	2 Divisions.
16 (0x10)	4 Divisions.
24 (0x18)	6 Divisions.
32 (0x20)	8 Divisions.
40 (0x28)	10 Divisions.

i

The value to insert is calculated by subtracting 9.7 from the gravity value and considering only decimal places.

Ex. for the gravity value 9.80390, insert **10390** / (0x2896).
9.80390 - 9.7 = 0.**10390**.

3. To save the parameters:
- Write in Bytes 2 to 5 (PARAMETER 1) the value **5005** (0x138D) and send the command **36** (0x24) "**DATA WRITING AND STORAGE**".
- Write Bytes 2 to 5 (PARAMETER 1) the value **0** (0x00) and increase the command counter value (Byte 15).

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Digital Inputs

1. Modify the desired parameters.

Parameter		Page	*Byte*	*Modbus TCP Register*	*Big Endian*		*Little Endian*	
Description	Possible values							
Input 1 function.	See Table below.	**5100** (0x13EC)	*16*	*40009*	*B1*	-	*B0*	-
			17		*B0*		*B1*	
Input 2 function.	See Table below.		*18*	*40010*	*B1*	-	*B0*	-
			19		*B0*		*B1*	

VALUE	MEANING
0 (0x00)	No function.
1 (0x01)	Pressing Zero key.
2 (0x02)	Pressing Tare key.
3 (0x03)	Pressing Mode key.
4 (0x04)	Pressing Print key.
5 (0x05)	Pressing C key.
6 (0x06)	Off.
7 (0x07)	Keyboard disabling.

2. To save parameters:

- Write in Bytes 2 to 5 (PARAMETER 1) the value **5100** (0x13EC) and send the command **56** (0x38) "**SAVE PAGE**".
- Send command **28** (0x1C) "**SAVE SETUP**".

Digital Output 1

1. Modify the desired parameters.

Parameter		Page	Byte	Modbus TCP Register	Big Endian		Little Endian	
Description	Possible values							
Output function.	See table below.	**5101** (0x13ED)	16	40009	B1	-	B0	-
			17		B0		B1	
Contact type (NO/NC).	0 (0x00) = Normally open. 1 (0x01) = Normally closed.		18	40010	B1	-	B0	-
			19		B0		B1	
Switching condition.	0 (0x00) = Direct. 1 (0x01) = At stability.		20	40011	B1	-	B0	-
			21		B0		B1	
Hysteresis.	0 (0x00) = Disabled. 1 (0x01) = Enabled.		22	40012	B1	-	B0	-
			23		B0		B1	
Sign.	0 (0x00) = Positive. 1 (0x01) = Negative.		24	40013	B1	-	B0	-
			25		B0		B1	
Delayed switching.	0 to 1000 (0x00 to 0x03E8) *(in tenths of seconds).*		26	40014	B1	-	B0	-
			27		B0		B1	
Activation time.	0 to 1000 (0x00 to 0x03E8) *(in tenths of seconds).*		28	40015	B1	-	B0	-
			29		B0		B1	

VALUE	MEANING
0 (0x00)	No function.
1 (0x01)	Setpoint on gross weight.
2 (0x02)	Setpoint on net weight.
4 (0x04)	Gross weight at zero.
5 (0x05)	Net weight at zero.
6 (0x06)	Moving weight.
23 (0x17)	Print key pressed.
25 (0x19)	Mode key pressed.
26 (0x1A)	C key pressed.
27 (0x1B)	Zero key pressed.
28 (0x1C)	Tare key pressed.
29 (0x1D)	Error.
30 (0x1E)	Setpoint in net weight if a tare was set.

2. To save the parameters:

- Write in Bytes 2 to 5 (PARAMETER 1) the value **5101** (0x13ED) and send the command **56** (0x38) "**SAVE PAGE**".
- Send the command **28** (0x1C) "**SAVE SETUP**".

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Digital Output 2

1. Modify required parameters.

Parameter		Page	Byte	Modbus TCP Register	Big Endian		Little Endian	
Description	Possible values							
Output function.	See table below.	**5102** (0x13EE)	16	40009	B1	-	B0	-
			17		B0		B1	
Contact type (NO/NC).	0 (0x00) = Normally open. 1 (0x01) = Normally closed.		18	40010	B1	-	B0	-
			19		B0		B1	
Switching condition.	0 (0x00) = Direct. 1 (0x01) = At stability.		20	40011	B1	-	B0	-
			21		B0		B1	
Hysteresis.	0 (0x00) = Disabled. 1 (0x01) = Enabled.		22	40012	B1	-	B0	-
			23		B0		B1	
Sign.	0 (0x00) = Positive. 1 (0x01) = Negative.		24	40013	B1	-	B0	-
			25		B0		B1	
Delayed switching.	0 to 1000 (0x00 to 0x03E8) *(in tenths of seconds).*		26	40014	B1	-	B0	-
			27		B0		B1	
Activation time.	0 to 1000 (0x00 to 0x03E8) *(in tenths of seconds).*		28	40015	B1	-	B0	-
			29		B0		B1	

VALUE	MEANING
0 (0x00)	No function.
1 (0x01)	Setpoint on gross weight.
2 (0x02)	Setpoint on net weight.
4 (0x04)	Gross weight at zero.
5 (0x05)	Net weight at zero.
6 (0x06)	Moving weight.
23 (0x17)	Print key pressed.
25 (0x19)	Mode key pressed.
26 (0x1A)	C key pressed.
27 (0x1B)	Zero key pressed.
28 (0x1C)	Tare key pressed.
29 (0x1D)	Error.
30 (0x1E)	Setpoint in net weight if a tare was set.

2. To save the parameters:

- Write in Bytes 2 to 5 (PARAMETER 1) the value **5102** (0x13EE) and send the command **56** (0x38) "**SAVE PAGE**".
- Send the command **28** (0x1C) "**SAVE SETUP**".

Profinet Name

1. Write in Bytes 16 to 31 of the Output Area the new Profinet name of the transmitter.
2. Write in Bytes 2 to 5 (PARAMETER 1) the value **5031** (0x13A7) and send the command **56** (0x38) **"SAVE PAGE"**.

Parameter		Page	Byte
Description	Possible values		
Command SAVE PAGE	0x00		*0*
	0x38		*1*
Page 5031 (0x13A7)	0x00		*2*
	0x00		*3*
	0x13		*4*
	0xA7		*5*
			...
Profinet name to be assigned to the transmitter, insert up to 16 ASCII characters in hex format. Allowed characters: • a to z (lowercase) • 0 to 9 • "-" If the length of the Profinet name is less than 16 characters, fill the remaining Bytes with the value 0. In the example: **ricelake-0123456**	r (0x72)	**5031** (0x13A7)	*16*
	i (0x69)		*17*
	c (0x63)		*18*
	e (0x65)		*19*
	l (0x6C)		*20*
	a (0x61)		*21*
	k (0x6B)		*22*
	e (0x65)		*23*
	- (0x2D)		*24*
	0 (0x30)		*25*
	1 (0x31)		*26*
	2 (0x32)		*27*
	3 (0x33)		*28*
	4 (0x34)		*29*
	5 (0x35)		*30*
	6 (0x36)		*31*

3. Save the parameters:
• Send the command **28** (0x1C) **"SALVA SETUP"**.
• Reboot the transmitter (command **34** (0x22)).

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Scale Zeroing via Fieldbus

MODE 1 "DEP.CH"

Send the command **1** (0x01) **"ZERO"**.

MODE 2 "IND.CH"

To zero a single scale send the following commands:
45 (0x2D) **"ZERO SCALE 1"**
46 (0x2E) **"ZERO SCALE 2"**
47 (0x2F) **"ZERO SCALE 3"**
48 (0x30) **"ZERO SCALE 4"**

or alternatively, send the command **53** (0x35) **"MULTI-SCALE ZEROING"** inserting in PARAMETER 1 the bitmask that indicates the scale/s to zero *(bit 0 = scale 1, bit 1 = scale 2, bit 2 = scale 3, bit 3 = scale 4).*

Note: This command does not affect calibration. Once the device is turned off, the performed zeroing gets lost.

Mechanical Tare Zeroing via Fieldbus

MODE 1 "DEP.CH"

- Send command **35** (0x23) **"DATA READING"**.
- Send command **39** (0x27) **"ZERO CALIBRATION"**.
- Verify that, in page **5001** (0x1389) in the Input Area, the value in Bytes 30 - 31 turns from 6 (0x06) "Ongoing zero calibration" into 4 (0x04) "Calibration OK".
- Send command **36** (0x24) **"DATA WRITING AND STORAGE"** inserting in PARAMETER 1 the value 0 (0x00).

MODE 2 "IND.CH"

- Send command **35** (0x23) **"DATA READING"** specifying in PARAMETER 1 the scale on which zero calibration is to be performed.
- Send command **39** (0x27) **"ZERO CALIBRATION"**.
- Verify that, in page **5001** (0x1389) in the Input Area, the value in Bytes 30 - 31 turns from 6 (0x06) "Ongoing zero calibration" into 4 (0x04) "Calibration OK".
- Send command **36** (0x24) **"DATA WRITING AND STORAGE"** inserting in PARAMETER 1 the value 0 (0x00).

Note: Unlike ZERO command, the ZERO CALIBRATION command affects the scale calibration and finalises the modification of the zero point.

Backup

It is possible to **copy the device setup** by reading in sequence all setup pages from 0 to 63 (0x00 to 0x3F).

1. Send the command **26** (0x1A) **"SETUP READING"** inserting in PARAMETER 1 the value 0 (0x00) "first setup page".

2. Copy data in Bytes 16 to 31 of page 0 (0x00) "Input Area".

3. Send the command **26** (0x1A) **"SETUP READING"** inserting in PARAMETER 1 the value 1 (0x01) "second setup page".

4. Copy data in Bytes 16 to 31 of page 1 (0x01) "Input Area".

5. Repeat this procedure for all the other pages.

Restore

To restore the backup, write in sequence all setup pages:

1. Copy in Bytes 16 to 31 of the Output Area previously saved data in page 0 (0x00).

2. Send the command **27** (0x1B) **"SETUP WRITING"** inserting in PARAMETER 1 the value 0 (0x00).

3. Copy in Bytes 16 to 31 of the Output Area previously saved data in page 1 (0x01).

4. Send the command **27** (0x1B) **"SETUP WRITING"** inserting in PARAMETER 1 the value 1 (0x01).

5. Repeat this procedure for all the other pages.

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OPERATING MESSAGES

Message	Description
F.b.Conn	Fieldbus in operation.
F.b.oH	Communication with active network.
F.buS. in	Module initialisation.

ERROR MESSAGES

Message	Description
F.buS.Er	Fielbus not in operation.
F.b.Err + code	Error status, see error codes.

Code	Decription
1000	Module fatal error. Restart the device.
1001	Selected protocol differs from the one managed by the module. Check step FLd.buS.
1005	Internal communication error between fieldbus module and CPU board. Reboot the device. If the error persists, contact service.
000 140	General network error. Check network connections.
000 141	Closed connection.
000 142	Connection in timeout.
000 143	Isolated network.
000 144	Duplicated node.
000 145	Network cable unplugged.

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