

Temperature Controller Configuration Software Tempco-Set Pro User Manual

Warning Symbol

This document contains notices that you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are highlighted in the manual by a warning triangle and are marked as follows.



The danger symbol indicates that death or severe personal injury may result if proper precautions are not taken. Do not proceed beyond a warning symbol until the indicated conditions are fully understood and met.

Preface

Original equipment manufacturer reserves the right to change information available in this document without notice. The manufacturer is not liable for any damages incurred to equipment/personal during installation or use of equipment as explained in this document. User must acquire sufficient knowledge & skills prior to using equipment in the application and follow all the local standards & regulations to meet safety requirements.

Copyright

The documentation and the software included with this product are copyrighted 2019 by Tempco Electric Heater Corporation. All rights are reserved. Tempco Electric Heater Corporation reserves the right to make improvements in the products described in this manual at any time without notice.

No part of this manual may be reproduced/copied/translated or transmitted in any form or by any means without the prior written permission of Tempco Electric Heater Corporation. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

Contact Information

Tempco Electric Heater Corporation

607 N. Central Avenue

Wood Dale, IL 60191-1452 USA

Tel: 800-323-6859

Website: www.tempco.com

Email: sales@tempco.com; info@tempco.com

Table of Contents

1	Tempco-Set Software	4
1.1	Introduction	4
1.2	System Requirements	4
1.3	Software Installation	4
1.4	Supported Devices	5
1.5	Power Requirement	5
1.6	Network connection	5
1.7	Setup and Use	6
1.8	Configuration of Communication parameter	8
1.9	Guideline for Communication Failure	10
1.10	Profile Configuration	11
1.11	File Menu	13
1.11.1	Open-File (F2)	13
1.11.2	Save File As (F3)	13
1.11.3	Exit (F4)	13
1.12	System Menu	14
1.12.1	Rescan (F5)	14
1.12.2	Read Data (F6)	14
1.12.3	Write Data (F7)	14
1.12.4	Write Multiple data (F8)	14
1.12.5	Configuration (F9)	14
1.12.6	Profile Editor	14
1.13	Help Menu	14

1 Tempco-Set Software

1.1 Introduction

Tempco-Set Software is used to configure different types of temperature controllers. The software will connect with controllers via the programming port or serial communication port. It read and write the parameters from the controllers. The software can read and write parameters from more than one controller.

1.2 System Requirements

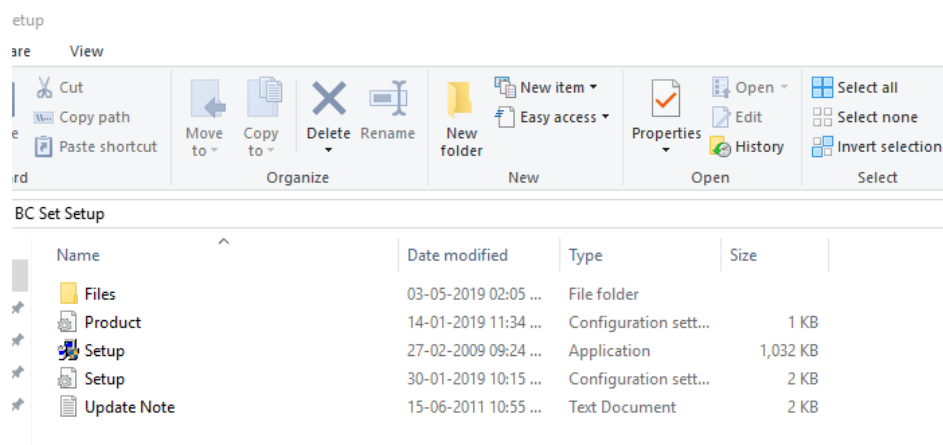
The PC must have at least the below configuration to install Tempco-Set software.

Item	Minimum Requirements
System	IBM PC compatible computer with Intel Pentium IV or above
Operating System	Windows XP or above
Memory	256MB
Hard Disk	50 GB Free Space on the hard disk
Communication Ports	RS232 or RS485 or USB Port

1.3 Software

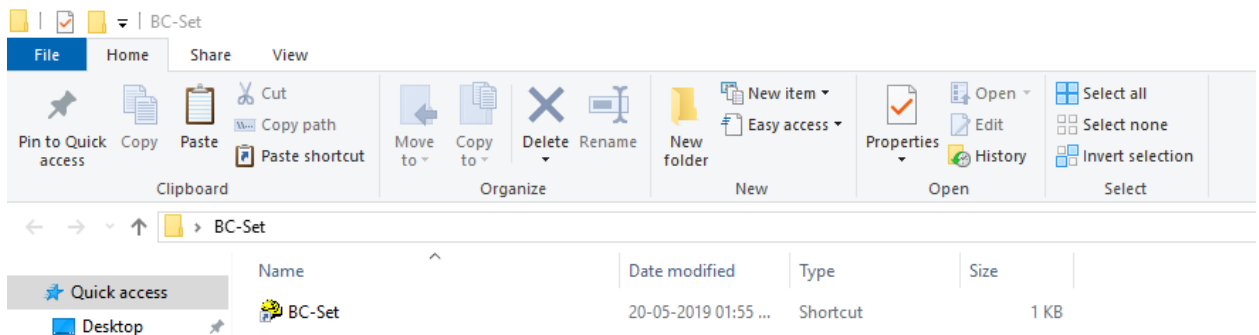
Tempco-Set software can be installed by following the below procedure.

1. Download Tempco-Set software from the manufacturer's website.
2. Install latest Dot Net software from Microsoft website
3. Install the software by double-clicking the setupwizard.exe from Tempco-Set Setup



4. Follow the on-screen instruction to complete the installation.

5. Now Tempco-Set Software can be started by using the selecting the Tempco-Set application shortcut in Tempco-Set folder on the desktop.



1.4 Supported Devices

The below controllers can be connected with Tempco-Set Software by using program port cable or serial port (RS232 or RS485) cable to PC.

Controller	Port	
TEC-2400, TEC-9400, TEC-7400, TEC-8400, TEC-8450, TEC-4400, TEC-6400	Programming port or RS485	Programming Port: TEC99016+TEC99015 RS485: RS485 Interface Cable
TBC-41	Programming port or RS485	Programming Port: TEC99016+TEC99015 RS485: RS485 Interface Cable
TEC-2500, TEC-4300, TEC-8300, TEC-9300	Programming port or RS232 or RS485	Programming Port: TEC99013 +SNA10A Serial Port: RS232 or RS485 Interface Cable
TEC-4100, TEC-7100, TEC-8100, TEC-9100, TEC-920, TEC-4500, TEC-9500	Programming port or RS232 or RS485	Programming Port: TEC99011 +SNA10A Serial Port: RS232 or RS485 Interface Cable
TEC-920, TEC-910	Programming port or RS485	Programming Port: TEC99012 +SNA10A RS485: RS485 Interface Cable

1.5 Power Requirement

The controller needs to be powered before connected with Tempco-Set Software.

1.6 Network connection

The Tempco-Set software uses RS232 or RS485 or Programming port to connect with the controllers. For Programming port connection the programming port adaptor SNA10A or TEC99016 is required. If the PC is not equipped with RS232 or RS485 port then USB to RS232/RS485 converters can be used.

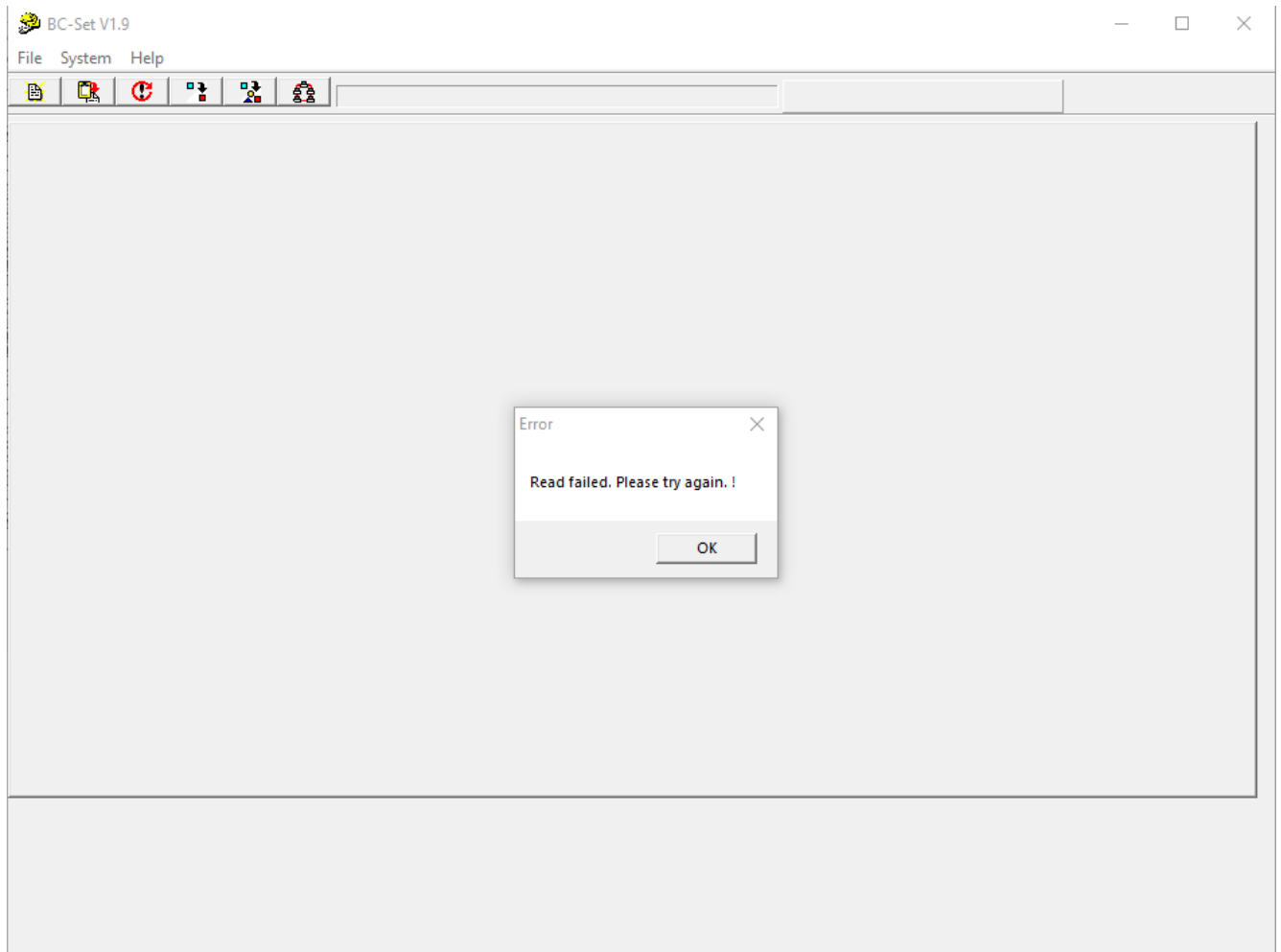
1.7 Setup and Use

Once the software is started, it will prompt the user to configure the starting and end node address needs to be connected. After the configuration of the starting and end node address, the software will try to connect with the controller with the default communication setup. If the communication is successful the software will display the parameters list of the connected controllers else the software will show an error message.

The screenshot displays the BC-Set V1.9 software window. The main area contains a table of parameters with columns for ADDRESS, NAME, and VALUE. A modal dialog box is open in the center, displaying the message "Read successfully !" with an "OK" button.

ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE
0	SP1	-17.71	27	RR	0.635	54	RESVD	0	81	CJLO	26.16	108	REHI	-16.6	135	OFTH	0
1	SP2	-16.6	28	OUT2	2	55	RESVD	0	82	CJHI	0	109	ADDR	2	136	CALO	0
2	SP3	-17.75	29	Q2TY	0	56	RESVD	0	83	V1L	-199.9	110	BAUD	2	137	CAHI	1
3	RESVD	0	30	Q2FT	0	57	RESVD	0	84	V1G	-199.9	111	DATA	1	138	RESVD	0
4	RESVD	0	31	CYC2	18	58	RESVD	0	85	MA1L	-199.9	112	PARI	0	139	RESVD	0
5	RESVD	0	32	CPB	100	59	RESVD	0	86	MA1G	-4.8	113	STOP	0	140	PROG	62.12
6	RESVD	0	33	DB	0	60	RESVD	0	87	RESVD	0	114	CT1R	0	141	E1FN	6
7	DTMR	0	34	A1FN	2	61	BPL1	0	88	RESVD	0	115	CT2R	0	142	E2FN	6
8	INPT	16	35	A1MD	0	62	BPL2	0	89	RESVD	0	116	HBEN	0	143	RESVD	0
9	UNIT	0	36	A1HY	0.001	63	CJCL	4862	90	RESVD	0	117	HBHY	0.1	144	RESVD	0
10	DP	3	37	A1FT	0	64	PV64	-17.778	91	RESVD	0	118	HB1T	0	145	RESVD	0
11	INLO	-17.778	38	A1SP	-17.764	65	SV65	-17.778	92	RESVD	0	119	HB2T	0	146	RESVD	0
12	INHI	-17.667	39	A1DV	0.001	66	MV166	100	93	RESVD	0	120	HSEN	0	147	A1DL	0
13	SP1L	-17.762	40	A2OT	0	67	MV267	0	94	RESVD	0	121	HSYH	0.1	148	A2DL	0
14	SP1H	-17.706	41	A2FN	2	68	TIMER	0	95	RESVD	0	122	HS1T	50	149	A3DL	0
15	FILT	2	42	A2MD	0	69	EROR	0	96	RESVD	0	123	HS2T	50	150	RESVD	0
16	RESVD	0	43	A2HY	0.001	70	MODE	0	97	RESVD	0	124	RESVD	0	151	SFT	0
17	PB	0.01	44	A2FT	0	71	PROG71	62	98	RESVD	0	125	RESVD	0	152	SFL1	0
18	TI	100	45	A2SP	-17.75	72	CMND	0	99	SEL5	0	126	RESVD	0	153	SFL2	0
19	TD	25	46	A2DV	0.001	73	JOB1	0	100	SEL6	0	127	FILE	0	154	SFTH	-16.6
20	OUT1	0	47	A3OT	0	74	JOB2	0	101	SEL7	0	128	PV	-17.778	155	SFTR	0
21	Q1TY	1	48	A3FN	12	75	JOB3	0	102	SEL8	0	129	SV	-17.71			
22	Q1FT	2	49	A3MD	0	76	CJCT	0	103	DFS1	1	130	MV1	100			
23	Q1HY	0.001	50	A3HY	0.001	77	ADLO	4.6	104	DFS2	0	131	MV2	0			
24	CYC1	18.1	51	A3FT	0	78	ADHI	8.2	105	DFS3	0	132	PASS	0			
25	QFST	25	52	A3SP	0.01	79	RTDL	-199.9	106	RETY	0	133	CODE	0			
26	RAMP	2	53	A3DV	0.001	80	RTDH	-199.9	107	RELO	-17.6	134	OFTL	0			

1-1 Successful communication Single Controller



1-2 Communication Failure

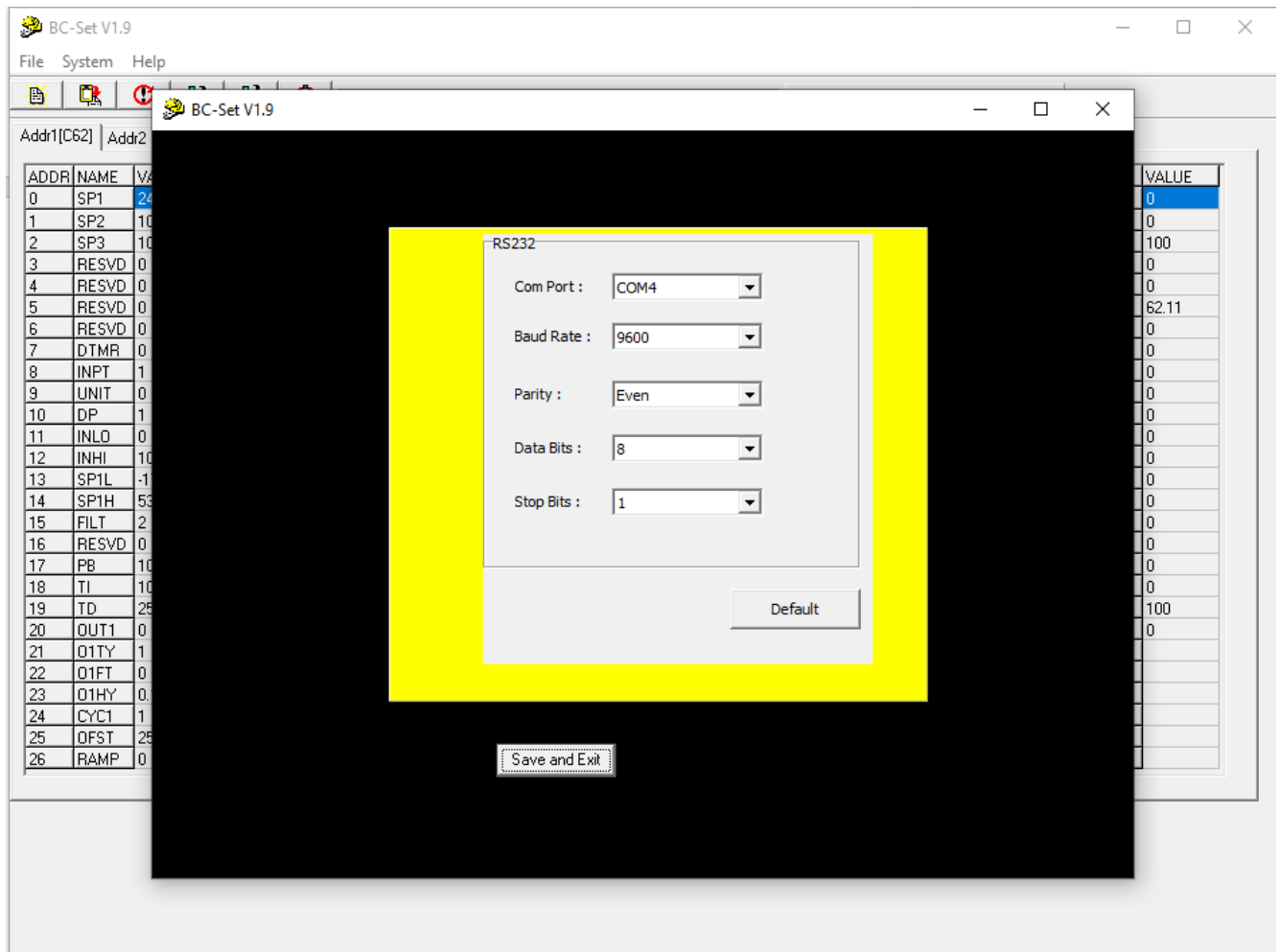
BC-Set V1.9

File System Help

Rescan F5
Read Data F6
Write Data F7
Write Multiple F8
Configuration F9
Profiler Editor

ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE
0	RR	0	54	RESVD	0	81	CJLO	25.63	108	REHI	100	135	OFTH	0
1	OUT2	2	55	RESVD	0	82	CJHI	0	109	ADDR	1	136	CALO	0
2	SP3	100	56	RESVD	0	83	V1L	25.1	110	BAUD	2	137	CAHI	100
3	RESVD	0	57	RESVD	0	84	V1G	-11.1	111	DATA	1	138	RESVD	0
4	RESVD	0	58	RESVD	0	85	MA1L	9.5	112	PARI	0	139	RESVD	0
5	RESVD	0	59	RESVD	0	86	MA1G	-51.8	113	STOP	0	140	PROG	62.11
6	RESVD	0	60	RESVD	0	87	RESVD	0	114	CT1R	0	141	E1FN	0
7	DTMR	0	61	BPL1	0	88	RESVD	0	115	CT2R	0	142	E2FN	0
8	INPT	1	62	BPL2	0	89	RESVD	0	116	HBEN	0	143	RESVD	0
9	UNIT	0	63	CJCL	5130	90	RESVD	0	117	HBHY	0.1	144	RESVD	0
10	DP	1	64	PV64	26.4	91	PL1L	0	118	HB1T	0	145	RESVD	0
11	INLO	0	65	SV65	24.7	92	PL1H	100	119	HB2T	0	146	RESVD	0
12	INH1	100	66	MV166	0	93	PL2L	0	120	HSEN	0	147	A1DL	0
13	SP1L	-17.8	67	MV267	0	94	PL2H	100	121	HSY	0.1	148	A2DL	0
14	SP1H	537.8	68	TIMER	0	95	SEL1	0	122	HS1T	50	149	A3DL	0
15	FILT	2	69	ERROR	0	96	SEL2	0	123	HS2T	50	150	RESVD	0
16	RESVD	0	70	MODE	0	97	SEL3	0	124	RESVD	0	151	SFT	0
17	PB	10	71	PROG71	62.11	98	SEL4	0	125	RESVD	0	152	SFL1	0
18	TI	100	72	CMND	0	99	SEL5	0	126	RESVD	0	153	SFL2	0
19	TD	25	73	JOB1	0	100	SEL6	0	127	FILE	0	154	SFTH	100
20	OUT1	0	74	JOB2	0	101	SEL7	0	128	PV	26.6	155	SFTR	0
21	O1TY	1	75	JOB3	0	102	SEL8	0	129	SV	24.7			
22	O1FT	0	76	CJCT	0	103	QFS1	1	130	MV1	0			
23	O1HY	0.1	77	ADLO	3.5	104	QFS2	0	131	MV2	0			
24	CYC1	1	78	ADHI	-7.1	105	QFS3	0	132	PASS	0			
25	QFST	25	79	RTDL	-7.2	106	RETY	0	133	CODE	0			
26	RAMP	0	80	RTDH	2.3	107	RELO	0	134	QFTL	0			

1-4 System Menu



1-5 Communication Configuration

1.9 Guideline for Communication Failure

If the software can't read the parameters from the controller then check the below guidelines.

1. Check the communication cable is connected properly or not.
2. Check the communication port configuration of the controller and the software are the same or not.
3. If RS485 or RS232 communication is used for communication then check the controller has proper communication module on it or not
4. If the programming port is used for communication then the programming port cable is connected properly or not.
5. If the problem still can't be resolved then there might be a problem on hardware. Contact the supplier for assistance.

1.10 Profile Configuration

If the connected controller has a profile function then the profile can be configured by using the profile configuration option in the system menu. The profile parameters can be read and write from the controller in this window.

BC-Set V1.9

File System Help

Rescan F5
Read Data F6
Write Data F7
Write Multiple F8
Configuration F9
Profiler Editor

ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE
0	RR	25.6	54	A4OT	0	81	CJLO	28.5	108	REHI	-6	135	OPTH	0
1	OUT2	2	55	A4FN	2	82	CJHI	0	109	ADDR	2	136	CALO	0
2	SP3	-6	56	A4MD	0	83	V1L	-83.1	110	BAUD	2	137	CAHI	10
3	SP4	-6	57	A4HY	0.01	84	V1G	6.3	111	DATA	1	138	RESVD	0
4	SP5	-6	58	A4FT	0	85	MA1L	-6	112	PARI	0	139	RESVD	0
5	SP6	-6	59	A4SP	-6	86	MA1G	-4	113	STOP	0	140	PROG	44.05
6	SP7	-6	60	A4DV	1	87	V2L	0	114	CT1R	0	141	E1FN	0
7	DTMR	0	61	BPL1	0	88	V2G	0	115	CT2R	0	142	E2FN	0
8	INPT	16	62	BPL2	0	89	MA2L	0	116	HBEN	0	143	E3FN	0
9	UNIT	0	63	CJCL	4518	90	MA2G	0	117	HBHY	0.1	144	E4FN	0
10	DP	2	64	PV64	-17.78	91	PL1L	0	118	HB1T	0	145	E5FN	0
11	INLO	-17.78	65	SV65	-13.5	92	PL1H	100	119	HB2T	0	146	E6FN	0
12	INHI	-6.67	66	MV166	100	93	PL2L	0	120	HSEN	0	147	A1DL	0
13	SP1L	-17.78	67	MV267	0	94	PL2H	100	121	HSY	0.1	148	A2DL	0
14	SP1H	37.78	68	TIMER	0	95	SEL1	0	122	HS1T	50	149	A3DL	0
15	FILT	2	69	ERDR	0	96	SEL2	0	123	HS2T	50	150	A4DL	0
16	DISP	1	70	MODE	0	97	SEL3	0	124	RMSP	0	151	SFT	0
17	PB	1	71	PROG71	44.05	98	SEL4	0	125	RINL	-17.78	152	SFL1	0
18	TI	100	72	CMND	0	99	SEL5	0	126	RINH	-6.67	153	SFL2	0
19	TD	25	73	JOB1	0	100	SEL6	0	127	FILE	0	154	SFTH	-6
20	OUT1	0	74	JOB2	0	101	SEL7	0	128	PV	-17.78	155	SFTR	0
21	Q1TY	0	75	JOB3	0	102	SEL8	0	129	SV	-13.5			
22	Q1FT	0	76	CJCT	0	103	QFS1	1	130	MV1	100			
23	Q1HY	0.01	77	ADLO	3.6	104	QFS2	0	131	MV2	0			
24	CYC1	18	78	ADHI	6.1	105	QFS3	0	132	PASS	0			
25	QFST	25	79	RTDL	-9.6	106	RETY	0	133	CODE	0			
26	RAMP	1	80	RTDH	-39.5	107	RELO	-16	134	OFTL	0			

1-6 Profile Editor

BC-Set V1.9

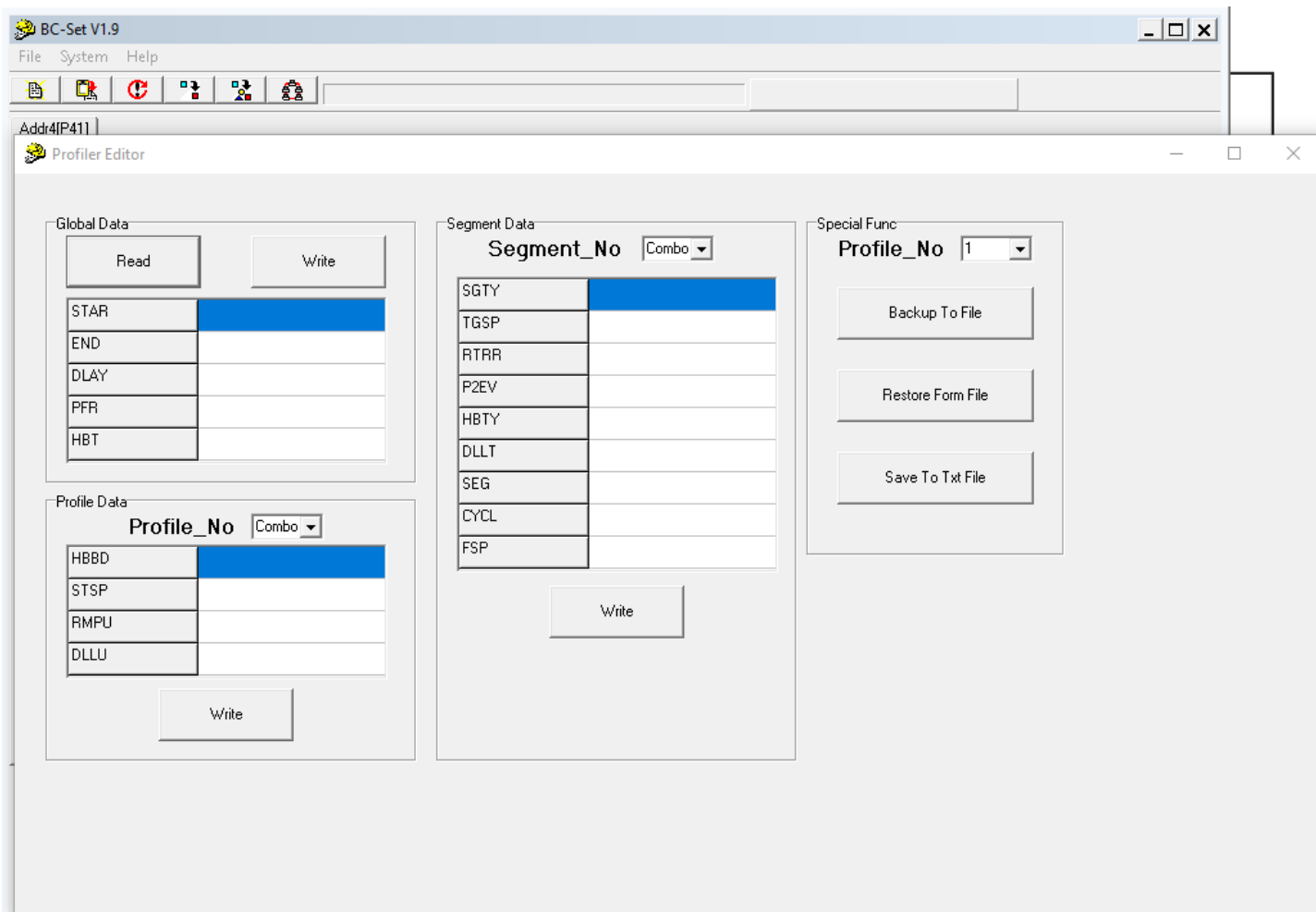
File System Help

Form8

Read Write

ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE	ADDR	NAME	VALUE
161	PROF	0 NONE	175	TSP1	-6	193	TSP7	-6	211	TSPD	-6
162	RUN	0 S&AR	176	RPT1	00.00	194	RPT7	00.00	212	RPTD	00.00
163	RMPU	0 HH.MM	177	SKT1	00.00	195	SKT7	00.00	213	SKTD	00.00
164	STAR	0 PV	178	TSP2	-6	196	TSP8	-6	214	TSPE	-6
165	END	0 SP1	179	RPT2	00.00	197	RPT8	00.00	215	RPTD	00.00
166	PFR	2 SP1	180	SKT2	00.00	198	SKT8	00.00	216	SKTE	00.00
167	HBLO	0	181	TSP3	-6	199	TSP9	-6	217	TSPF	-6
168	HBHI	0	182	RPT3	00.00	200	RPT9	00.00	218	RPTF	00.00
169	HB	00.00	183	SKT3	00.00	201	SKT9	00.00	219	SKTF	00.00
170	CYCL	1	184	TSP4	-6	202	TSPA	-6	220	TSPG	-6
171	CYCR	1	185	RPT4	00.00	203	RPTA	00.00	221	RPTG	00.00
172	STEP	1.RP	186	SKT4	00.00	204	SKTA	00.00	222	SKTG	00.00
173	TIMR	00.00	187	TSP5	-6	205	TSPB	-6			
174	STAT	1	188	RPT5	00.00	206	RPTB	00.00			
			189	SKT5	00.00	207	SKTB	00.00			
			190	TSP6	-6	208	TSPC	-6			
			191	RPT6	00.00	209	RPTC	00.00			
			192	SKT6	00.00	210	SKTC	00.00			

1-7 C Series Profile Configuration



1-8 Profile Editor for TEC-4500

1.11 File Menu

1.11.1 Open-File (F2)

Open the parameter list of the connected controller from the existing file. By pressing F2 on the keyboard also to open the file.

1.11.2 Save File As (F3)

Save the parameter list to the file. By pressing F3 on the keyboard also to save the file.

1.11.3 Exit (F4)

Close the application. By pressing F4 on the keyboard also to close the file.

1.12 System Menu

1.12.1 Rescan (F5)

Rescan will scan the connected controllers again for communication. By pressing the key F5 on the keyboard also will read the data.

1.12.2 Read Data (F6)

Read data will read the data again from the controller. By pressing the key F6 on the keyboard also will read the data.

1.12.3 Write Data (F7)

Write the data to the connected controller. By pressing the key F7 on the keyboard also write the data.

1.12.4 Write Multiple data (F8)

Write the data to multiple controllers connected. By pressing the key F8 on the keyboard also write the data to multiple controllers.

1.12.5 Configuration (F9)

Open the window to configure the communication settings of the software. By pressing F9 on the keyboard also to open the configuration window.

1.12.6 Profile Editor

Open the profile editor for the controllers with profile function.

1.13 Help Menu

Provide information about the software version.