

DEP 300s - Q06905

USER MANUAL



Weld Control Communications

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REGARDING THIS DOCUMENTATION

This documentation is written to support the DEP 300s hand-held data entry panel with software Q06905-23

It has been designed for planning, programming, start-up personnel, operators, service technicians, plant operators, line builders and maintenance personnel to assist with procedures related to installing the weld control.

Screen shots of the software application are for illustrative purpose only and may appear different than your specific application.

REVISION HISTORY

REVISION	REL. DATE	COMMENTS
1.0	1/28/11	Initial release of manual M-035030, software Q06905-00-11.
2.0	6/20/16	Complete update of manual with software version Q96905-23
2.1	12/19/16	Added note for Back-up and Restore cycle and MS timing. Updated formats.

LANGUAGES AVAILABLE

This documentation was originally published in English. Translations are available in Chinese and Japanese.

SYMBOLS USED IN THIS DOCUMENTATION

In compliance with the CE standard, the following symbols are used to identify safety instructions. Their meaning is a s follows:



This symbol will be used wherever failure to observe safety measures may result in death, severe bodily injury o serious damage to property.



This symbol will be used wherever insufficient or lacking compliance with instructions may result in personal injury.



This symbol denotes when insufficient or lacking compliance with instructions may damage equipment or files.



This symbol informs the user about special features, or where to find more information.



This symbol draws attention to specific instructions or product features.



This symbol indicates that only WTC service personnel or WTC repair partners should service or open this device. Breaking a warranty seal will void the warranty of this device.

COMMON TECHNIQUES USED IN THIS MANUAL

The following conventions are used throughout this manual:

- Bulleted lists such as this one provide information, not procedural steps.
- ③ Numbered lists provide sequential steps or hierarchical information.

Italic type is used for emphasis.

WTC SUPPORT - INDUSTRIAL TECHNICAL SERVICES [ITS]

WTC tests all of our products to ensure that they are fully operational when shipped from the manufacturing facility. If you are experiencing installation or startup problems, please review the troubleshooting information contained in this publication. If you need assistance, please contact Customer Support (see the table below); our trained technical specialists are available to help. When emailing please provide a photograph of the serial tag and Hardware Status Screen on the DEP 300s if possible.

If the product is not functioning and needs to be returned, contact your distributor. You must provide a Customer Support case number to your distributor in order to complete the return process.

	United States/Canada	1.248.477.3900 Ext: 3020
Phone	Outside United States/ Canada	
Internet	Worldwide	Go to http://support.wtc.com

WORKING WITH STATIC-SENSITIVE DEVICES



ESD Costs!

Electrostatic discharge (ESD) can ignite flammable materials and damage electronic components. Static electricity can attract contaminants in clean environments or cause products to stick together. Other costs of ESD-damaged electronic devices are in their replacement and production down time. Associated costs of repair and rework, shipping, labor and overhead can be significant. Reducing losses to ESD and static electricity is an ABSOLUTE NECESSITY.



NEVER use the personnel grounding system described below when working with voltages above 220 VAC.

PERSONNEL GROUNDING

Before touching any Electrostatic Discharge Sensitive (ESDS) devices or circuit boards, put on and wear an Electrostatic Discharge (ESD) wrist strap. Ground this strap through a one megohm (1 M Ω) resistor.

HANDLING OR MOVING ESDS DEVICES

Handle all circuit boards by their edges ONLY. NEVER touch the traces or edge pad connectors.

NOTE:

Use ONLY static-shielding containers for transporting ESDS devices or circuit boards.

WORKSTATION REQUIREMENTS

If diagnostics are required, move the circuit board to an approved ESD workstation. A static-safe workstation must include a grounded ESD mat, wrist strap and cord. The measured static voltage at a workstation MUST NOT exceed 50 volts.

For detailed information about ESD contact: WTC Industrial Technical Services Phone: +1 248-477-3900 | Fax: +1 248-477-8897 Email: service@weldtechcorp.com Website: www.weldtechcorp.com

HOW TO GET HELP AND SUPPORT

For technical support, contact WTC's Industrial Technical Services department. Please have the following information available:

Your Contact Information:

- Company Name
- Phone Number
- Fax Number
- Email Address

Weld Control Part Number and Serial Number

• Located on the serial tag on the outside of the cabinet

Weld Timer and DEP-300 Firmware Revisions

- The weld timers firmware revision is located in the Display Mode menu.
- The DEP-300s firmware revision is located in the System Settings menu.

Description of Problem

- Faults and Alerts
- Mechanical and Electrical Issues
- Weld Quality Issues

NOTES:

Chapter 1: OVERVIEW

DEP 300s



The WTC DEP-300s Data Entry Panel is a portable, hand-held, programming device, used to communicate with WTC weld timers through an EtherNet IP network. It can communicate with up to 30 WTC weld controls through the network.

The DEP-300s allows the user to program weld schedules, set-up parameters and stepper profiles, then download the information to the weld control. It also receives weld data summary uploaded by the weld timer and displays weld results.

When power is applied to the DEP-300s, the Home Menu is displayed, which allows the user to connect to an active weld control via one of three methods:

- ① Global EtherNet IP Network
- Local EtherNet Network or
- ③ Serial (RS-485) Network

When connected via the Global EtherNet IP network, the DEP-300s polls the network for active devices. Each active device responds with information about itself, which includes IP address, welder ID and status. At this point, the user can select which device to connect to.

This manual provides instruction on the following topics:

- Menu Navigation
- Network Configuration and Connectivity
- Review and Edit Weld Schedules
- Review and Configure Fault and Setup Parameters
- Review and Configure Linear Current Stepper Profiles
- Fault and Stepper Reset
- I/O Mapping and Status

Each weld control functions independently. The data displayed by the DEP 300s for each device varies, based on the software and features.



NOTE: Example LCD display images are used in this manual to provide instruction in the use of the DEP-300s. Actual features and parameters viewed on the DEP-300s may vary depending on the customer's application requirements and the firmware loaded into the weld timer. If assistance is required in the use of this product, please contact WTC.

PHYSICAL CONNECTIONS

ON THE WELD TIMER



DEP PORT ON THE CONTROL DOOR



KEYPAD LAYOUT



THE FOLLOWING DESCRIBES THE KEY FUNCTIONS OF THE DEP-300S:

POWER KEY



This key turns the LCD display either ON or OFF. It does not reboot or recycle power to the DEP. The green LED is illuminated when the LCD display is on.



The five F-number keys located at the top of the keypad, are used to perform various functions depending upon which menu is currently displayed on the DEP.

EXAMPLE 1:



In the Home Menu above, there are five functions displayed at the bottom of the menu. The user can select any of these five functions by pressing the corresponding function key located on the top row of the keypad.

EXAMPLE 2:



In the Mode Selection Menu above there are also five functions displayed at the bottom of the menu. Although they are different from what was seen in the Home Menu, they are selected by pressing the same five corresponding function keys.

CURSOR MOVEMENT KEYS

The directional arrows keys are used to both move the cursor and scroll through displays

	UP, DOWN, LEFT, RIGHT: These keys move the cursor within data fields on the display.
7	UP-RIGHT, DOWN-RIGHT: These keys scroll up or down through pages on the display.
	UP-LEFT, DOWN-LEFT: These keys are unassigned and not used.

NUMERIC KEYS



ALPHA KEYS



ENTER KEY

SPACE ENTER	This key places a new parameter into the DEP300s memory. The parameter is not changed in the weld timer until it is downloaded.
	NOTE: Before pressing the enter key, ensure the
	key is OFF (indicated by the unlit green
	LED). Otherwise, a space will be put in the field.

ESC KEY

DELETE ESC	If a parameter has been changed in a particular field, pressing this key will change the value back to its original value. This is only applicable prior to pressing the Enter key.
	NOTE: Before pressing the ESC key, ensure the
	Key is OFF (indicated by the unlit green
	LED). Otherwise, the data in the field will be deleted.

DELETE KEY

DELETE ESC	This key is used to delete a parameter within a particular field.
	NOTE: To delete a parameter, press the
	first. Note the shift key will remain locked ON (indi- cated by the lit green LED) until the shift key is pressed again.

SPACE KEY

SPACE ENTER	This key is used to insert a space when assigning the Welder ID in the Program Mode menu.
	NOTE: To delete a parameter, press the SHIFT
	first. Note the Shift key will remain locked ON (indi- cated by the lit green LED) until the shift key is pressed again.

NEGATIVE KEY



This key is used when a negative number is required in a particular field.

HOT KEYS

The following Hot Keys allow the user one-touch, quick access to commonly viewed menus in the DEP-300s. Once the DEP is connected to a weld timer, the Hot Keys can be used from any menu:

NOTE: Do not press	the SHIFT key prior to pressing the Hot Keys.
F &	Weld Data Screen (In Status Mode menu)
G %	Display Mode menu
к (Heat Display Screen (In Display Mode menu)
	Status Mode menu
Q ?	Program Mode menu

UNASSIGNED KEYS AND LED INDICATORS

The following keys and LED indicators are unassigned and not used:

LED 1 LED 2 LED 3 LED 4 LED 5	LED 1 - LED 5
*	Positive Key
V *	Asterisk Key
Y ,	Comma Key
Z ·	Period Key
<u>N</u> @	At Key

LCD DISPLAY

During normal keypad input activity, the back-light to the LCD display is ON. During extended periods of inactivity, the display will go into one of the following three inactivity modes:

MODE	DISPLAY
BACK-LIGHT DIM	After 10 minutes of inactivity, the back-light will dim.
SCREEN SAVER MODE	After 20 minutes of inactivity, the display will "blank" and go into screen saver mode.
BACK-LIGHT OFF	After 40 minutes of inactivity, the back-light will turn off.



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NOTE: Pressing any key will bring the display back into the active mode.

Chapter 2: HOME MENU



Upon power-up of the DEP-300s, the Home Menu is displayed. The Home Menu allows the user to select the above three options by pressing the corresponding keys as depicted below.



1. SYSTEM SETTINGS

When the System Settings key is pressed in the Home Menu, the following screen is displayed:



SYSTEM SETTINGS:

This screen allows the user to view and edit the following:

MAC ADDRESS:	This address is a fixed value and cannot be changed.
IP ADDRESS:	This line shows the unique IP address of the DEP.
SUBNET ADDRESS:	This line displays the Subnet information the DEP is connected over.
GATEWAY ADDRESS:	Field for the Gateway Address.
DHCP:	Set to OFF by default. If DHCP is ON, and you plan to program an address, change the value to OFF.

NOTE: To change the settings of the IP Address, Subnet Address and Gateway Address refer to the procedures on page 22.

FUNCTIONS MENU:

Home:	A returns the user back to the Home Menu.
Download/Reboot:	^B F2 After editing the System Settings, this key allows the user to save the changes to DEP memory and then reboot the DEP for the changes to take effect.
Flash DEP:	F3 allows the user to flash the DEP. This is typically only used during special maintenance operations. (See procedure on page 131)
Backup/Restore:	^P F4 allows the user to back-up weld timer schedules, stepper settings, setup settings and other information to DEP flash memory. For more information, see "Backup / Restore" on page 23.

2. NETWORK CONNECTIONS

CHANGING THE IP ADDRESS, SUBNET ADDRESS OR GATEWAY ADDRESS:



CHANGING THE DHCP SETTINGS:

- ① Press the vertex key to navigate to the DHCP Field.
- Press ENTER to open the drop down menu with options OFF and ON.
- 3 Move the cursor using keys to select the ON or OFF position.
- (4) Press $\frac{SPACE}{ENTER}$ to save the changes or $\frac{SPACE}{ESC}$ to cancel the change.
- (5) After the changes have been made, press F_{2}^{b} Download/ Reboot, for the changes to take effect.

क्षेष्ट

BACKUP / RESTORE

The Backup / Restore feature allows the user to transfer data files between weld timers. The DEP-300s is capable of uploading and storing three weld timer programs in flash memory and then restoring (downloading) them into other weld timers.



NOTE: In order to transfer data from one weld timer to another, both weld timers must have the same firmware program and revision numbers.



NOTE: Always configure the weld timer to the desired timing (Cycle/ Ms) prior to performing a restore. For example, Msec data from a weld timer that is being restored to one that was previously configured for cycle timing will not convert to Msec. and the values displayed may be erroneous.

THE FOLLOWING LISTS WHAT WELD TIMER PARAMETERS ARE BACKED-UP AND RESTORED:

PARAMETER	BACKUP	RESTORE
Setups	•	•
Schedule	•	•
Steppers	•	•
Stepper Status	•	•
Welder ID	•	•
FieldBus Options	•	
FieldBus Inputs	•	
FieldBus Outputs	•	
Local Ethernet Address	•	
EIP Configuration	•	
EIP Configuration	•	
EIP Inputs	•	
EIP Outputs	•	
DIO Outputs	•	
Network Address	•	

CREATING A BACKUP:

To backup data from a weld timer, follow the procedure below.

① Connect the DEP-300s into the weld timer's RS-485 serial communications port. For instructions on how to connect the DEP-300s to a weld timer for Serial network communications, see "Physical Connections" on page 11.





	Choose a Memory location and select desired options then choose Backup, Restore, or Clear.
	Ienory 1: EHPTY 1enory 2: EHPTY 1enory 3: EHPTY 1enory 3: EHPTY Ienory 3: EHPTY Ienor
④ In the Backup	/ Restore Menu, press FRACE to display the drop-
down menu and	then using the 🚺 or 🚹 arrow keys, select the
desired Memory	location (1-3) then press



NOTE: If a memory location is selected, which already has a data file stored in it, the old data file will be permanently deleted when the backup process begins. Therefore, verify if the old data file is to be overwritten prior to pressing the BACKUP [F2].



PAGE 1 - STANDARD:

Menory 1 : EMPTY	Cho des	ose a Memory location and select sired options then choose Backup, Restore, or Clear.	
Page 1 - Standard	Menory 1	1 : EMPTY	⊘
· · · · · · · · · · · · · · · · · · ·	Page 1	- Standard	Ø
🖉 Name 😡 Schedule 😡 Stepper	<table-cell> Nai</table-cell>	me 🛛 🗹 Schedule 🖗 Step	per

By default all 4 standard parameters are selected. To deselect a field,

using the movement keys	M (+	•	s J		navigate to the
parameter not required for	back	up anc	l pres	S ENT	to uncheck the

field.

Press F2 to initiate the Backup.

Scaning for serial device
Menory 1 : EMPTY
Page 1 - Standard (7
🛛 Name 🗌 Schedule 🗌 Stepper
Setup Stepper Status
Back Backup Restore Clear

If the DEP successfully connects to the weld timer, the backup sequence will begin automatically. If the DEP does not detect the weld timer on the serial network, the message "No Serial Devices Found" will appear on the screen. If this occurs, ensure the DEP is properly connected to the weld timer and repeat the backup process.

When the restore sequence is complete, the DEP will return to the Backup / Restore Menu and display the software number and weld processor name in the Memory field.



NOTE: Prior to restoring a backed-up data file to another weld timer, the DEP cable must be plugged directly into the serial port of the weld timer that is to be restored.

PAGE 2 - FIELDBUS:

T		F
	Choose a Memory location and select desired options then choose Backup, Restore, or Clear.	
	Memory 1 : EMPTY 🛛 🕅	
	Page 2 - Fieldbus 💟	
	Fieldbus Input Fieldbus Output	
	☐ Fieldbus I/O Configuration	
	Back Backup Restore Clear	
-		

The FieldBus I/O and configuration parameters can be individually selected for back up. Using the movement keys \mathbf{x} \mathbf{x}

initiate the Backup.

If the DEP successfully connects to the weld timer, the backup sequence will begin automatically. If the DEP does not detect the weld timer on the serial network, the message "No Serial Devices Found" will appear on the screen. If this occurs, ensure the DEP is properly connected to the weld timer and repeat the backup process.

When the restore sequence is complete, the DEP will return to the Backup / Restore Menu.

PAGE 3 - EIP:

Choose a Memory location a desired options then choos Restore, or Clear.	nd select e Backup,
Memory 1 : EMPTY	\Box
Page 3 – EIP	\bigtriangledown
EIP Input	IP Output
EthernetIP Configura	ntion
Back Backup Restore Cle	ar

The EIP I/O and configuration parameters can be individually selected

for back up. Using the movement keys 🚺 🗲 芛 navigate to

the desired field and press $\begin{bmatrix} SPACE \\ ENTER \end{bmatrix}$ to select, the press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to initiate Backup.

CLEAR A DATA FILE FROM A MEMORY LOCATION:

From the Backup / Restore Menu, press the

keys to

navigate to the memory location to be cleared and press **ENTER**. Notice that the Memory field will now display "Empty" to indicate that the previous data has been erased.

ſ				
	Choo desi	ose a Memo ired optio Rest	ory locati ons then c ore, or C	on and select hoose Backup, lear.
	Menory 1	EMPTY)	⊘
ĺ	Page 1 -	Standard		$\overline{\heartsuit}$
	🛛 Nan	. (🛛 Schedul	e 🗹 Stepper
	Ø	Setup		Stepper Status
ſ	Back	Backup	Restore	Clear



NOTE: The DEP 300s does NOT Backup/Restore **RAFT**[™] data.

NETWORK COMMUNICATIONS



The DEP-300s can connect to a weld timer via three separate networks: Local EtherNet, Global EtherNet and Serial Network.

LOCAL ETHERNET (F2)

In the Local EtherNet mode, the DEP is programmed to communicate directly with the "local" weld timer that it is physically connected to. In this mode, the DEP will only communicate to a local timer with an IP Address of 89.89.200.250. For more information, see Changing the Local EtherNet IP Address via the Serial Network.

NOTE: For instructions on how to physically connect the DEP-300s to a weld timer using Local EtherNet communications, see "Physical Connections" on page 11



NOTE: When the LOCAL ETHERNET [F2] key is pressed, the DEP temporarily changes its IP Address to 89.89.200.250. This guarantees communication with the local timer on the network, which has its IP Address set to 89.89.200.250.



(2) Upon completion of the upload, the Mode Selection Menu will appear, indicating that a connection to the weld timer has been established.



③ When the HOME [F1] key is pressed from the Mode Selection Menu, the following message will appear: "Returning to Home Menu will close communications to the timer Please Confirm".



(1) When CONFIRM [F1] is pressed, the communication between the DEP and the weld timer is closed, the DEP changes its Local IP Address back to the previous setting and the DEP returns to the Home Menu.

GLOBAL ETHERNET (F3)

In the Global EtherNet mode, the DEP-300s is capable of communicating with multiple weld timers on an EtherNet IP network.

- **NOTE:** In order to communicate in Global EtherNet mode, the IP Address and Subnet Mask of the weld timers must be set correctly. This is determined by the plant network administrator.
- **NOTE:** For instructions on how to physically connect the DEP-300s to a weld timer for Global EtherNet IP communications, see "Physical Connections" on page 11
- **NOTE:** There are two methods for the DEP-300s to establish communications with a weld timer.
- **NOTE:** IP Address set on the Global network will change back to the default 89.89.200.250 when the Local EtherNet key is pressed to communicate with the timer.

METHOD 1:

The DEP 300s sends out a special command to all the devices within the Subnet Mask, which effectively is a request for all WTC weld timers to report to the DEP and confirm they are active and identify their IP Address. When the active timers respond, their IP Address and Welder ID will populate the field in the Timer Selection Menu.





I 19 19 193 193 193 193 19 19 19 19 19 19 19	P ADDRESS 2,168,0,8 2,169,0,27 2,169,0,130 1,168,0,131 1,168,2,141 2,168,10,1 2,168,10,1 2,168,10,3)	ER ID 7003 7047 01 1125 	STATUS NEH NEH NEH NEH NEH NEH NEH NEH NEH
Bac	k SCAN	Edit	Save	Clear

(2) When the scan is complete, a list of all the active weld timers will appear, identified by their IP Address and Welder ID. Press



control and press ENTER .

Connected to: 19	2.168.0.95	
Upload in Pr	ogress	
614611-10-09	INVALI	

③ The DEP-300s will attempt to connect to the selected weld timer and "Upload in Progress" appears to indicate the status.

192,168,	0,95	HY.	TIMER001		
	Connected	to: 192.	168.0.95		
	COMPLETE				
	614611	-10-09 I	NYALI		
Hone	Program	Status	Display Mode	Change	

④ Upon completion of the upload, the Mode Selection Menu will appear, indicating that a connection to the weld timer has been established.
METHOD 2:

The weld timer IP Address is manually added by the user. The DEP will then send a communication message to that IP Address on the network. If the gateway and routers on the network allow the DEP to communicate with that IP Address, then communication will be established. This method is recommended when trying to find a weld timer that is on the network, but located within a different Subnet Mask than the DEP.



NOTE: This feature is only available when the DEP-300s is connected to the Global EtherNet (See "Network Communications" on page 29). If the DEP-300s is connected via the Local EtherNet or the Serial Network, this feature is inaccessible.

	IP AI 192,10 192,16 192,16 192,16 192,16 192,16 192,16 192,16 192,16	DRESS 68.0.8 8.0.27 8.0.95 8.0.130 8.0.131 8.2.141 8.10.1 8.10.2 8.10.3	HELD 13247 15257 HY_TIHER00 08503 FCHP 81560 13247 13247 13247	ER ID 2003 2047 2047 21 21 25 , MH11A 200-23 2007 2016 2019	STATUS NEH NEH NEH NEH NEH NEH NEH NEH NEH NEH
	Back	SCAN	Edit	Save	Clear
① From t Screen p	he Time ress Edit	Status	C F3		

IP ADDRESS HELDER ID GIATUS 192.168.0.8 13247003 NEH 192.168.0.27 15257047 NEH 192.168.0.95 MY_TIMER001 NEH 192.168.0.130 048503125 NEH 192.168.0.131 FCMP_MH11A NEH 192.168.0.131 FCMP_MH11A NEH 192.168.10.1 13247007 NEH 192.168.10.2 13247016 NEH 192.168.10.3 13247019 NEH					
192,168,0.95 MY_TIMER001 NEH 192,168,0.130 08503125 NEH 192,168,0.131 FCMP_MH11A NEH 192,168,2.141 A15500-23 NEH 192,168,10,1 13247007 NEH 192,168,10,2 13247016 NEH 192,168,10,3 13247019 NEH	IP A 192,1 192,1	DRESS 68.0.8 58.0.27	HELD 13247 15257	ER_ID 7003 7047	STATUS Neh Neh
192,168,10,2 13247016 NEH 192,168,10,3 13247019 NEH	192,16 192,16 192,16 192,16 192,16	\$8.0.95 8.0.130 8.0.131 8.2.141 \$8.10.1	MY_TIMER0(08503 FCMP_ A156(13247	01 8125 .MH11A 00-23 7007	NEH NEH NEH NEH NEH
	192,10 192,10	8.10.2 8.10.3	13247 13247	7016 7019	NEH NEH ø
	/				
	4	F2	② Press	s Manua	Ι.

		ÉTOTIC
192.168.0.8	13247003	
192,168,0,27	15257047	NFH
192.168.0.95	MY_TIMER001	NEH
192.168.0.13	08503125	NEH
192,168,0,13	L FCMP_MH11A	NEH
192,168,2,14	L A15600-23	NEH
192,168,10,1	13247007	NEH
192,168,10,2	13247016	NEH
192.168.10.3	13247019	NEH
19	1. 0 . 0 . 0	
Back Add	Delete Clear	

③ Using the numeric keys enter the IP address of the weld control you want to connect. Press **SPACE** after entering the values in each field and press the **SPACE** key to move the cursor to the next field. When the complete IP Address has been added, press the Add



	IP ADDRESS	<u> Helder ID</u>	<u> </u>
	192,168,0,93	470.474.47	NEM
	192.168.0.8	1324/003	NEM
	192,168,0,27	15257047	NEM
	192,168,0,95	MY_TIMER001	NEH
1. C	192,168,0,130	08503125	NEH
	192,168,0,131	FCMP_MH11A	NEH
	192.168.2.141	A15600-23	NEH
	192.168.10.1	13247007	NEH
	192,168,10,2	13247016	NEH
	De els Mercuel	Delate Class	

(4) The new IP Address will appear in the Timer Selection Window. Then press the BACK $\begin{bmatrix} A \\ F1 \end{bmatrix}$ key to go back to the weld control status menu.

	IP ADDRESS	<u>) Helder ID</u>	STATUS	
	192,168,0,8	13247003	OFF	
	192,168,0,27	15257047	OFF	
	192,168,0,95	MY_IIMER001		
	192,168,0,130	U8303123		
	192 168 2 141	915600-23		
	192 168 10 1	13247007	OFF	
	192.168.10.2	13247016	OFF	
	192.168.10.3	13247019	OFF	
		<u> </u>	× 1	
	Back SCAN	Edit Save	Clear	
	5			
(5) Using the	and	kevs move	he curso	r over the new
Osing the		\mathbf{T} $\int \mathbf{K} \mathbf{C} \mathbf{y} \mathbf{s}$, mow		
	CDACE			
ID Addrocc an	d proce			
IF AUDIESS all	u piess ENTER	•		



(6) If the DEP 300s is able to connect successfully to the weld control, the status will be displayed.

132,168,0,3 13247003 0M 132,168,0,27 15257047 0M 132,168,0,35 MY_TIMER001 0N 132,168,0,130 08503125 0M 132,168,0,131 FCMP_MH11A 0N 132,168,2,141 R15600-23 0M 132,168,10,1 13247007 0N
132,168,0,95 M_TIMEROI 0N 132,168,0,95 M_TIMEROI 0N 132,168,0,130 08503125 0N 132,168,0,131 FCHP_HH11A 0N 132,168,10,1 152600-23 0N 132,168,10,1 13247007 0N
192,168,0,130 04503125 0N 192,168,0,131 FCHP_HH11A 0N 192,168,10,1 15600-23 0N 192,168,10,1 15247007 0N
192,168,0,131 FCNP_HH11A ON 192,168,2,141 A15600-23 ON 192,168,10,1 13247007 ON
192,168,2,141 R15600-23 ON 192,168,10,1 13247007 ON
192,168,10,1 13247007 ON
192,168,10,2 13247016 ON
<u>192.168.10.3</u> 13247019 ON
192.168.10.2 13247016 ON 192.168.10.3 13247019 ON

NOTE: Pressing Save $\begin{bmatrix} D \\ F4 \end{bmatrix}$ after the weld controls are added to the list either manually or by scanning the Global Ethernet, allows the user to quickly connect to or view the list of weld controls available on the network when the DEP 300s is reconnected.

3. SERIAL NETWORK

The DEP-300s is capable of communicating with multiple weld timers on an RS-485 serial network. To connect to a weld timer on the serial network, perform the following steps:



NOTE 1: For instructions on how to physically connect the DEP-300s to a weld timer for Serial network communications, see "Physical Connections" on page 11.



NOTE 2: The DEP-300s does not support Token Passing. Which means the DEP can "see" multiple timers on the serial network, but can communicate with only one at a time. Also, since the DEP-300s does not support Token Passing, only one can be connected to the network at a time. Devices that support Token Passing, such as the DEP-100s, DP-200 or the WebView Network Gateway, can not be used on the serial network with the DEP-300s.



(2) The DEP-300s will automatically begin to scan the network and look for active weld timers. If only one timer is found, the DEP will automatically attempt to connect to it.

NOTE: If multiple weld timers appear in the Timer Status Menu, proceed to step 4 below.



③ Upon completion of the upload, the Mode Selection Menu will appear, indicating that a connection to the weld timer has been established.

192,168,0,131	08503125	
100 400 0 470	VOUVOILU	NEM
132,100,0,1/2	RMMPRFINET	NEH
192,168,0,181	000000000	NEH
192.168.0.220	RHMGEN5	NEH
192,168,0,245	13147561	TX1
192,168,0,245	13147561	TX2
192.168.0.245	13147561	1X3
192.168.0.250	000000000	NEH
192,168,0,245 192,168,0,245 192,168,0,245 192,168,0,245 192,168,0,250	13147561 13147561 13147561 13147561 00000000000	

④ Multiple timers on a serial connection are only found if the specific weld control and firmware installed supports Cascade Mode. In this situation as highlighted above, the list of weld controls will appear with the same IP address and Welder ID differentiated as TX1, TX2 and TX3 in the Status column.

To connect to a specific weld control use the 🚺 or 👘 keys

to take the cursor over the desired weld control (TX) and press

ENTER. The DEP-300s will attempt to connect with the selected weld control (TX) and "Upload in Progress" will appear on the screen.

Upon completion of the upload, the Mode Selection Menu will appear, indicating that a connection to the weld timer has been established.

4. CHANGING LANGUAGE PREFERENCE

The DEP-300s is designed to interface with weld controls that support multiple languages. The DEP-300s has its own language preferences, which can be changed to match the language preferences of the weld timer the DEP is connected to. For example, if the language preference of the weld timer is set to German, the language preferences of the DEP can also be changed to German, and so on.

The DEP-300s currently supports the following languages:

- English
- German
- Spanish
- Portuguese
- French
- Chinese
- Korean
- Japanese
- Turkish

English is the default language of the DEP 300s.



NOTE: Language options other than English are application specific and may not be available in your weld timer. Furthermore, data uploaded from a weld control to the DEP is dependent on the language preference settings for that weld control.

PROCEDURE TO CHANGE THE LANGUAGE OF THE DEP 300s



Press **F**₅ key to scroll the cursor down until the desired language is selected. Notice as the cursor scrolls over a particular language, the language of the [F1– F5] tags changes accordingly.

When the cursor is over the desired language, the change is complete. Press [F1 - F4] to continue.

NOTE: WTC is continuously increasing the number of languages its weld controls support. Your DEP-300s and weld control may support additional languages, which are not listed above. If your DEP-300s and weld timer do not support your present language requirements contact your WTC Sales Representative.

Chapter 3: MODE SELECTION

Once the DEP has successfully connected to a weld timer, the Mode Selection Menu is displayed. This menu allows the user to access three options: Program Mode, Status Mode and Display Mode. In addition, by selecting the Change Timer option, the user can change which timer the DEP is connected to on the network.



HOME [F1]

When the HOME **F**¹ key is pressed from the Mode Selection Menu, the following message will appear: "Returning to Home Menu will close communications to the timer Please Confirm". When CONFIRM [F1] is pressed, the communication between the DEP and the weld timer is closed and the DEP will return to the Home Menu.



For details on each Mode refer to the following chapters:

Chapter 4: Program Mode

Chapter 5: Status Mode

Chapter 6: Display Mode

Chapter 7: Change Timer

NOTE: See page 16 for quick one-touch navigation using Hot Keys to view commonly accessed menus.

Chapter 4: PROGRAM MODE

Program Mode is used to review and edit weld schedules, current steppers and setup parameters for a weld control. It is also used to review and edit other parameters, including EtherNet/IP, Welder ID, Reload Timer Defaults, Local EtherNet, FieldBus Mapping and Network Address.

When the PROGRAM MODE F_2 key is pressed, the following menu is displayed:



PROGRAM MODE- NAVIGATION TREE

LEVEL 1:	•	1.1 Review Schedule
	•	1.2 Review Stepper
	•	1.3 Review Setups
	•	More
LEVEL 2:	•	2.1 Review HIC
	•	2.2 EIP Options
	•	2.3 Welder ID
	•	2.4 Reload Options
	•	More
LEVEL 3:	•	3.1 Local Ethernet
	•	3.2 FieldBus Mapping
	•	3.3 I/O Mapping
	•	3.4 Network Address
	•	More
LEVEL 4:	•	4.1 Servo Cal
	•	4.2 Spots
	•	More (Back to Level 1)



Carefully read the instructions below prior to editing parameters in the weld timer. When editing parameters that require a power recycle on the weld control cabinet for the changes to take effect, it is recommended making all the changes first prior to re-cycling power. Thus, only one re-cycle is required.

LEVEL 1:

The following options are available within the Program Mode Menu - Level 1 by pressing the corresponding keys:

A F1	Returns the user back to the Mode Selection Menu.
B F2	Allows the user to edit, insert or delete functions within the weld schedule. For more information, see Review Schedule Menu.
C F3	Allows the user to view and edit the stepper pro- grams within the weld timer. For more information, see Review Stepper Menu.
D F4	Allows the user to view and edit the programmable faults and setup parameters within the weld timer. For more information, see Review Setups Menu.
E F5	Displays additional Program Mode options (see below).

LEVEL 2:



The MORE [F5] key displays additional Program Mode options:

Review HIC	Allows the user to view the Review HIC Menu. This option is customer application specific and may be inaccessible. For more information, see Review HIC Menu.
EIP Options	Allows the user to view and configure the Global EtherNet/IP (EIP) Network settings and the EIP I/O bit map settings. For more information, see EIP Options Menu.
Helder ID	Allows the user to assign an alpha-numeric name to the weld timer. For more information, see Welder ID Menu
Reload Options	Allows the user to reload the factory-set default val- ues of the weld timer. For more information, see Reload Options Menu
HORE •	Displays additional Program Mode options (see below).

The MORE [F5] key displays additional Program Mode options:

LEVEL 3:



Local Ethernet	Allows the user to view and configure the Local Eth- erNet settings (IP Address, SubNet Mask and Gate- way) of the weld timer. For more information, see Local Ethernet Menu.
FieldBus Mapping	Allows the user to view and configure the FieldBus I/O bit map to support an optional DeviceNet or ProfiBus daughter board on the weld control. For more information, see FieldBus Mapping Menu.
I/O Mapping	Allows the user to view and configure the Discrete I/ O bit map of the weld timer. This option is customer application specific and may be inaccessible. For more information, see I/O Mapping Menu.
Network Address	Allows the user to view and edit the Serial Node Address of the weld timer. For more information, see Network Address Menu.
HORE	Displays additional Program Mode options (see below).

LEVEL 4:



The following options are available within this Menu by pressing the corresponding keys:

SERVO Cal	Customer application specific. Only available with certain software.
Spots	Allows the user to make Spot and Schedule assign- ments. For more information see Spots Menu.
HORE 4	Returns the user back to the top of the Program Mode Menu.

LEVEL 1.1: REVIEW SCHEDULE MENU

The Review Schedule menu allows the user to add or delete functions in a weld schedule or edit the parameters assigned to a function. In addition, it allows the user to change the weld scheduled to be viewed.

	.0.230	<u>.</u>	1207400	
Develo	Review	Review	Review	HORE

When the REVIEW SCHEDULE $\begin{bmatrix} B \\ F2 \end{bmatrix}$ key is pressed, the DEP will display schedule #1 by default (see below).

If the number of functions in the weld schedule exceeds the size of the viewable area on the display, a scroll bar will appear on the right side of the display. Press the scroll by line or key to scroll by page view for functions outside the current viewable area.

CHANGING THE SCHEDULE NUMBER

192,168,0,	,250	11	207466		
START OF ADAPTQ HI LINEAR S SEC. CURI TRANSFOR TURN ON I SQUEZE HELD 10 H HOLD 5 C' TURN ON I TURN ON I	SCHEDUL DDE=0 RA TEPPER # R LIMITS MER TURN ISOLATIO VELD IN 30 CYCLE CY. 1000 YCLES WELD COM	E # 1 TE=100% HSL 0 ASSIGNED : HI=00 LOH S RATIO 73 N CONTACTOR PROGRESS S 0 AMPS PLETE PROGRESS	IDE=100% (0 = OFF =99990 \$1)	
S	CHEDULE	# 1			
Back	Sch#	Download		MORE	
1					
4	B F2	① Press	Sch#		



The new weld schedule is now displayed.



NOTE: Schedule changes can only be made to the weld timer that the DEP-300s is presently connected to on the network. Make certain the correct weld timer IP Address and Welder ID is displayed at the top of the menu, in addition to the correct weld schedule for that weld timer, prior to making any programming changes.

PROGRAMMING A SCHEDULE

When a schedule is displayed, the user can insert or delete a function into the schedule, or change the programmable values of a function.

INSERT A FUNCTION IN A WELD SCHEDULE

SCHEDULE # 2 Back Sch# Download MORE

Confirm to make sure that the correct schedule # is displayed.

	192,168,0,95 HY_TIMER001
	START OF SCHEDULE # 2 ADAPTQ MODE=0 RATE=100% MSLIDE=100% LINEAR STEPPER #0 ASSIGNED (0 = OFF) SET PRESSURE = 0 TURN ON MELD IN PROGRESS TURN ON ISOLATION CONTACTOR SQUEEZE 100 MSEC MELD 160 MS. 500 AMPS EXTEND MELD IF LOW CURRENT/RAFT FAULT PROCESS MELD FAULTS HOLD 80 MSEC TUDN ON UELD COMPLETE
	SCHEDULE # 2 Insert Delete Copy Download MORE
2	Press the for s arrow keys to move the cursor to the line above where the new function is to be inserted.
	F1 3 Press INSERT





⑦ If the function requires the parameters to be entered/ edited, proceed to step 8. If not, proceed to step 17.



TIP 1: To find the desired weld function quicker, press the WELD [F2] key to scroll the function list down to the beginning of the weld functions, which typically starts at #20.

TIP 2: To find the desired I/O function quicker, press the I/O [F3] key to scroll the function list down to the beginning of the I/O functions, which typically starts at #50.





(1) For functions with two or more parameters, press the

RIGHT arrow key to move the cursor to the next parameter box, then repeat steps 8 & 9. When complete, proceed to step 11.

->





192.168.0.250 11207466 START OF SCHEDULE # 5 ADAPTQ HODE=0 RATE=100% KSLIDE=100% LINEAR STEPPER #0 ASSIGNED (0 = OFF) SEC. CURR LINITS: HI=00 LOH=99990 TRANSFORMER TURNS RATIO 73:1 TURN ON ISULATION CONTACTOR TURN ON HELD IN PROGRESS SQUEEZE 30 CYCLES	1
START OF SCHEDULE # 5 HOAPTQ HODE=0 RATE=100% KSLIDE=100% LINEAR STEPPER #0 ASSIGNED (0 = OFF) SEC, CURR LINTIS: HI=00 LOH=595950 TRANSFORMER TURNS RATIO 73:1 TURN ON JSOLATION CONTACTOR TURN ON HELD IN PROGRESS SQUEEZE 30 CYCLES	
HUMPIQ RUDE=0 RHIE=100% RSLIDE=100% LINERR STEPPER #0 RSJGNED (0 = OFF) SEC. CURR LINITS: HI=00 LOH=99990 TRANSFORMER TURNS RATIO 73:1 TURN ON ISOLATION CONTACTOR TURN ON HELD IN PROGRESS SOURCEZ 30 CYCLES	ň
SEC, CURR LIMITS; HI=00 LON=9990 TRANSFORMER TURNS RATIO 73:1 TURN ON ISOLATION CONTACTOR TURN ON HELD IN PROGRESS SOURCEZ 40 CYCLES	
TRANSFORMER TURNS RATIO 73:1 TURN ON ISOLATION CONTACTOR TURN ON HELD IN PROGRESS SQUEEZE 30 CYCLES	
TURN ON ISOLATION CONTACTOR TURN ON WELD IN PROGRESS SQUEEZE 30 CYCLES	11
SQUEEZE 30 CYCLES	
SNUEEZE SU LILLES	
UELD 10 CV 10000 DWDC	Μ.
HOLD 5 CYCLES	
TURN ON HELD COMPLETE	
THOM NEE HELD TH DONCDECC	\$
SCHEDULE # 5 Download Complete	5
Insert Delete Copy Download NORE	₹

When complete, a "Download Complete" message will appear.

DELETE A FUNCTION FROM A WELD SCHEDULE

Perform the following steps on the DEP-300s to delete a function from a weld schedule:

	0,250	1120746	6
	COH	PLETE	
	· [
	C007C0 00	49 THUOL "	<u> </u>
	608760-00	-12 INVHL	
Hone	Program St Mode 1	tatus Displ 1ode Mode	ay Change Timer







192.168.0.250 SCHEDULE #:2 Back Sch# Download		
SCHEDULE #32 Back Sch# Download to summer MORE	192,168,0,250	11207466
	SCHEDULI Back Sch#	E #;2 Download to recompare MORE
	(Press MORE

19: 8 8 1 5 1 1 5 1 1 5 1 1 1 5 1 1 1 1 5 1 1 9: 1 9:	2.168.0.250 TART OF SCHEDULE DAPTQ MODE=0 RATE INEAR STEPPER #0 1 EC. CURR LIMITS: 1 RANSFORMER TURNS I URN ON ISOLATION (URN ON HELD IN PRI QUEEZE 30 CYCLES ELD 10 CY. 10000 1 DLD 5 CYCLES URN ON HELD COMPLI URN ON HELD COMPLI	11207466 # 2 =100% HSLIDE=100% ASSIGNED (0 = OFF) HI=00 LOH=99990 RATIO 73:1 CONTACTOR DGRESS AMPS ETE POGGDESS	
Ī	SCHEDULE #	2 Copy Download	HORE
	Store and	and the second second	
Press th	e 🕇 or 💺	arrow keys to m	ove the cursc
the fund	tion line to be del	eted	



deleted from the DEP-300s.]



COPYING A WELD SCHEDULE

Perform the following steps on the DEP-300s to copy an entire weld schedule from one location and paste it into another:

52,100,	0,250	-	1207466	
		COMPLETE		
	608760	-00-12	INVAL	
Hone	Program Mode	Status Mode	Display Mode	Change Timer







192,168,0,250 SCHEDULE #:1 Васк Sch# Download HORE				-
SCHEDULE #31 Back Sch# Download MORE >	192,168,	0,250	11207466	
SCHEDULE #31 Back Sch# Download MORE >				
	Back	SCHEDULE #71	load	HORE
	Back	Sch# Down	load	HORE





In the copy is immediately downloaded to the weld processor. When complete, a "Download Complete" message will appear.



NOTE: When copying a weld schedule from one location to another, any existing data in the paste location will be completely overwritten and permanently lost.

LEVEL 1. 2: REVIEW STEPPER MENU



WTC weld control software is designed with stepper programs that keep track of the weld count and gradually increase heat after a programmed number of welds. The number of steppers available varies with different programs. (Refer to your software specific manual for more details on the stepper program). The Review Stepper menu provides information on the stepper profile, number of stepper programs available and allows editing of the stepper parameters.

Some weld controls provide multiple independent steppers. Each weld schedule can be assigned to a stepper and you can define a different profile for each stepper. The profile tells the control when and how compensation is provided.

192,168,0	• 95	HY_	TIMER001	
	Revie	ew Stepp	er	
STEP #0 STEP #02 STEP #03 STEP #05 STEP #05 STEP #05 STEPPER AUX. COL	1 3 % 100 H 2 6 % 110 H 3 9 % 120 H 4 12 % 130 5 15 % 140 GROUP 1 INTER MAX CO	1125 60 1425 18 1425 30 1425 30 1425 8 1425 18 1425 18 14 1425 18 14 14 14 14 14 14 14 14 14 14 14 14 14	HELUS) HELDS) HELDS)0 HELDS)0 HELDS)0 HELDS))	
	Stepper #	1		
D	Stepper# Dr	beolou		

CHANGING THE STEPPER NUMBER:

(1) To view and edit a Stepper profile, other than the one displayed, press $\begin{bmatrix} B \\ F2 \end{bmatrix}$.

JC+T00+4+JJ	MY_TIMER001
Rev	view Stepper
STEP #01 3 % 100	AMPS 60 HELDS
STEP #02 6 % 110	AMPS 180 HELDS
STEP #03 9 % 120	AMPS 300 HELDS
STEP #04 12 % 13	0 AMPS 600 HELDS
STEP #05 15 % 14	0 AMPS 800 HELDS
STEPPER GROUP 1	
AUX. COUNTER MAX	COUNTS = 0
Stepper	# :1 <u> </u>

② You will notice that the rest of the screen will gray out and the Stepper # field opens up an edit box. Using the numeric keys



3 Press ENTER.

EDITING A STEPPER PROFILE

You program the stepper settings for each weld control using the Review Stepper function $\frac{c}{F_3}$ on the Program Mode display, to:

- Review a stepper profile
- Review the current limits for the stepper
- Review the stepper parameter settings

The stepper settings determine when current is added and the amount of current to add. When you select REVIEW STEPPER, you'll see a menu to program the stepper settings.



Example of a stepper profile as accessed from the Review Stepper key from the previous screen. By default, Stepper #1 is displayed.

LJC+100+V.	,250	00000000	2
	Review S	Stepper	
STEP #01	<u>3 % 100 AMPS</u>	60 HELDS	
STEP #02	6 % 110 AMPS	180 WELDS	
STEP #03	9 % 120 HNPS 19 % 120 DMD	C COO HELDS	
STEP #04	15 % 130 MMP	S 800 MELDS	
STEPPER I	GROUP 1	o oco ALLOO	
L			
	Stepper # 1		

For example, the sample display shows that in step #1, the control will 3% heat to the base heat (programmed in the weld function) over the course of 60 welds.

If the weld function used the constant current firing mode (rather than automatic voltage compensation), the device would instead add 100 amps of secondary current to the base amps (programmed in the weld function) over the course of 60 welds.

This display shows the amount of energy to add to the weld function during each step of the stepper profile (either % heat or secondary current, based on the firing mode used by the weld function executed). Weld energy is added by the stepper over the 5 steps in the profile, in increments of 3%. The amount of weld energy added or subtracted is determined by the weld count and the values programmed in the stepper profile.

TO CHANGE THE STEPPER #:



① Press Stepper #

400 400 0	950 0000	
192,168,0	250 0000	
STEP #01 STEP #02 STEP #03 STEP #04 STEP #04 STEP #05 STEPPER	3 % 100 AHPS 60 HHPS 60 H 6 % 110 AHPS 180 9 % 120 AHPS 300 9 % 120 AHPS 300 HPS 300 12 % 130 AHPS 600 15 % 140 AHPS 800 GROUP 1 1 <th>ELDS HELDS HELDS HELDS HELDS HELDS</th>	ELDS HELDS HELDS HELDS HELDS HELDS
Back	Stepper # 31 Stepper# Download	
2) Enter S	tepper Number _┥	123 456 789 80
	SPACE ③ Press	ENTER

EDITING A PARAMETER ON THE REVIEW STEPPER MENU ON THE DEP 300s:

192,168,0,250	00000000	FAULT
Revie	w Stepper	
STEP #01 3 % 100 Ah	IPS 60 HELDS	
STEP #02 6 % 110 Ah	PS 180 WELDS	
SIEP #03 9 % 120 HD	IPS 300 WELDS	
STEP #05 15 % 140 P	INPS 800 MELDS	
STEPPER GROUP 3		
Stepper #	3	
Back Stepper# Dow	Inload	
S S		
 		- +

1



VIEN



5 For parameters with two or more data fields, press

the arrow key to move the cursor to the next

data field box, then repeat steps 3 & 4. When complete, proceed to step 6.



8 Press DOWNLOAD F3

[Downloads the changes to the weld processor. When complete, a **"Download Complete"** message will appear]

LEVEL 1. 3 REVIEW SETUPS MENU



WTC weld controls use a number of programmable settings, called set-up parameters, to enable you to customize a weld control to meet your application requirements.

The set-up parameters tell the control about its operating environment: how to react to certain conditions (as FAULT or ALERT conditions) and how to react when certain inputs become active.

Every device has a unique set of parameters. Refer to the Operator's Manual provided with the weld device for more information.



The weld control will ignore changes to certain set-up parameters (such as those controlling retract operation) until power to the device is cycled (turned off and then back on).

Because these settings control operation of the weld device, extreme care should be exercised before making changes to set-up parameters!

F4 from the Program Mode display menu, selects the Review Setup display, which is used to see or change the current settings for a weld control's set-up parameters.
LEVEL 2.1 REVIEW HIC MENU

The Review HIC Menu is customer application specific. Consult the weld timer firmware manual for more information.

LEVEL 2.2 EIP OPTIONS MENU

The EIP Options Menu allows the user to configure the Global EtherNet IP Network settings, such as IP Address, SubNet Mask, Gateway, DHCP, etc. In addition, it also allows the user to configure the EtherNet IP I/O Mapping.

192.168.0.95	MY_TIMER001
	EIP Options
IP Address = SUB NET MASK = 3 Cateway =	192, 168, 0, 95 255, 255, 0, 0
Name Server = Input Instance 1	0 . 0 . 0 . 0 0 . 0 . 0 . 0 50 Type 8bit (♡) Size (2 (♡
Output Instance 1	00 🛛 Type (8bit 🔍 Size (2 🛛 🛡
MAC Address = DHCP = 0	00:18:ec:01:53:2b n
DHCP MODE =[<u>r</u>	etry disabled 🕅
PORT MODE =@	uto 🛛
Back Input	Output Execute Reload

INPUT MAPPING

The following procedure explains how to reconfigure the EIP Input Map. In this example, Input 4 will be re-mapped from the NONE bit to the PRESSURE SWITCH bit:

				-
192,168,0	.3	Н	YTIMER01	
Review	EIP Options	Helder ID	Reload Options	MORE
	1			
	В	① Pr	ess EIP	Options
	F 2	-		•

-	1
	192,168,0,250 MYTIMER01
	EIP Options
	IP Address = <u>192</u> , 168, 0 , 250
	SUB NET MASK = 255. 255. 255. 0
	Gateway = 0.0.0.0.0
	Name Server = $0 \cdot 0 \cdot 0 \cdot 0$
	Input Instance 150 Type Bbit 🖉 Size 😣 [🖉
	Output Instance 100 Type (8bit (7) Size (8 (7)
	MAC Address = <u>00:18:ec:01:79:1</u> 9
	DHCP = On 🔿
	DHCP MODE =[retry disabled]]
	PORT MODE = auto (V)
	Back Input Output Execute Reload
and i	1
aler -	
	F_2 ② Press Input Mapping.

192,168,0	,95	HY.	TIMER001	
Input	Mapping	Inputs	: 1-8	0
Input 1	(HELD / NO I	HELD		ହ
Input 2	FAULT RESE	T		0
Input 3	ISOLATION I	CONTACT	or saver	(T
Input 4	NONE			0
Input 5	NUNE			0
Input 6	REQUEST PR	ESSURE		0
Input 7	(HELD INITI	ATE		0
Input 8	STEPPER RE	SET		0
Back	Input (Mapping M	output apping	Execute	

③ Press the version of the field.

192,168,	0.95 MY_TIMER001
Input	t Mapping Inputs 1-8 🛛 🛛
Input 1	(HELD / NO HELD 🛛
Input 2	(FAULT RESET 🛛 🛛
Input 3	ISOLATION CONTACTOR SAVER
Input 4	NONE
Input 5	NONE
Input 6	
Input 7	BINARY SELECT 4
Input 8	BINARY SELECT 8
	BINARY SELECT 16
	BINNET SELECT SZ
Back	Input Output Execute

(4) Press and a drop-down box will appear containing all the available input bits.

COMM LOSS		MY_TIMER001	l Fau
Input	Mapping	Inputs 1-8	(
Input 1	HELD / NO	HELD	(
Input 2	FAULT RESE	ET	(
Input 3	ISOLATION	CONTACTOR SAVER	(
Input 4	NONE		
Input 5	TIP DRESS		(
Input 6	TTP DRESS	GROUP 1 GROUP 2	
Input 7	STEPPER AU	IX WELD CNTR RESI	ET
Input 8	CONTROL ST	OP	
	PRESSURE S		
	REQUEST PR	ESSURE	C
Back	Input Mapping	Output Execute	

PRESSURE SWITCH bit.

192 168	95 MY TIMEPOOL
Toput	Manning Troute 1.9
Input 1	HELD / NU HELD
Input 2	FAULT RESET
Input 3	ISOLATION CONTACTOR SAVER
Input 4	PRESSURE SWITCH
Input 5	INONE (V
Input 6	REQUEST PRESSURE
Input 7	
Toput 8	STEPPER RESET
-	S
Back	Input Output Execute Mapping

(6) Press $\frac{SPACE}{ENTER}$ key. NONE will be replaced with PRESSURE SWITCH in the Input 4 field. Press EXECUTE $\frac{E}{F5}$. This begins the process to download the change to the weld timer.

192,168,0	95 MY_TIMER001	
Input	Mapping Inputs 1-8	ļ
Input 1	Held / No Held	
Input 2	FAULT RESET	
Input 3	ISOLATION CONTACTOR SAVER	
Input 4	PRESSURE SHITCH	
Input 5	NONE	
Input 6	REQUEST PRESSURE	
Input 7	HELD INITIATE	(
Input 8	STEPPER RESET	(
[Do you want to Change EIP Information?	
Back	Input Output Confirm	

Press state key. NONE will be replaced with PRESSURE

SWITCH in the Input 4 field. Press EXECUTE $\begin{bmatrix} E \\ F5 \end{bmatrix}$. This begins the process to download the change to the weld timer.



NOTE: Your timer screen may display different information depending on software installed. The screen shots used in the following procedures are for illustrative purpose only.

92,168,0,95	MY_TIMER001
Input Mapp	ing Inputs 1-8 🔽
Input 1 (HELD	Z NO HELD 🛛
Input 2 FAUL	T RESET 🛛 🔊
Input 3 ISOL	ATION CONTACTOR SAVER 🛛 🕅
Input 4 PRES	SURE SHITCH 🛛 🔊
Input 5 NONE	0
Input 6 REQU	est pressure 🛛 🔊
Input 7 (WELD	INITIATE 🛛 🔊
Input 8 STEP	PER RESET 🛛 🔊
Download C	omplete Power Cycle Required
Back UInp	ut Output Execute

(8) The message "Download complete power cycle required" will appear. Cycle power on the weld control to complete the process.

EIP OUTPUT MAPPING

The following procedure explains how to reconfigure the EIP Output Map. In this example, Output 18 will be re-mapped from the NONE bit to the PRESSURE SELECT 1 bit:

	0.95	HY	_TIMER001	
		IP Option	าร	
IP Ac	ldress = 1	168.	0.95	
SUB NET	MASK = 2	255. 255.	0.0	
Ga	iteway =	0.0.	0.0	
Name S	jerver =	0.0.		
Input I	Instance 1	50 Iype	8bit [♥] S.	Ize 2
Uutput J	Instance 10	00 Туре(8bit[∑]S.	ize 🛛 🛛 🖉
MAC Ac	idress = <u>(</u>	0:18:ec:0	01:53:2b	
	DHCP = Ur	1		
DHCF	, WODE = <u> r</u> e	stry disa	bled (♥)	
PORT	∫ MODE = <u>[aι</u>	ito	(▽)	
		Output	-	
	I Input			Reload
Back	Input Mapping	Mapping	Execute	
Back	Input Mapping	Mapping	Execute	
Back	Input Mapping	Mapping	Execute	[

-				
	COMM LOSS	MY_TIMER001		
	Output Mapping	Outputs 1-8		
	Output 1 NO ALERT	Outputs 1-8		
	Output 2 STEPPER AF	PPOutputs 9-16		
	Output 3 END OF STR	Plutputs 25-32		
	Output 4 PRESSURE S	GEOutputs 33-40		
	Output 5 PRESSURE S	EOutputs 41-48		
	Output 6 PRESSURE 9	EUutputs 49-56		
	Output 7 PRESSURE 9	SELECT 8	(⊽)	
	Output 8 READ PRESS	SURE		
L	Back Input Mapping	Output Happing Execute		
 Press th 	e ENTER key. A d	drop-down box	will appea	r. Using
the 📕	key move the	cursor to "Outp	outs 17-24"	and
press	CE TER .			

192,168,0	• . 95	<u> </u>	TIMER001	FAUL	Ι
Output	; Mapping	Output	s 17-24	0)
Jutput 17	NONE			(7	Ì
Jutput 18	NONE			0	
Jutput I:	NONE			0	Ĵ
Jutput 20	NONE			0	Ì
Jutput 21	. (NONE			0	Ì
Jutput 22	(NONE			Ø	Ì
Jutput 23	NONE			0	Ì
Jutput 24	INONE			0	Ì
Back	Input	Output	Execute		

③ Outputs 17-24 will now be displayed. Press the key to move the to the "Output 18" field.

-			-	
CC	IMM LOSS	MY_TIMER001	FAULT	
	Output Mapping	Outputs 17-24	Ø	
0.	itput 17(NONE			
0.	ıtput 18(NONE			
0.	tput 19HELD COMPL	ETE		
0.	tput 20 KEHUY IU W	ELU DE DECET		
0.	tput 21 END OF STE	PPER		
0.	tput 22 STEPPER AP	PROCHING MAX		
0.	itput 23 TIP DRESS	REQUEST ELECT 1		
0.	tput 24 PRESSURE S	ELECT 2	Ø	
	Back Input Mapping	Output Tapping Execute		
(4) Press the ENTE	key. A drop	-down box will	appear co	ontaining
all the available	output bits. L	Jsing the 🚺	key mov	e the
cursor to "PRES	SURE SELECT	1" and press 🕼	ACE ITER	



NOTE: The display accommodates only 8 input/output lines per view. If the desired input/output is not visible in the first view, press which will open up the extended list in a drop down menu. The using the the section of desired inputs/outputs and press **SACE**.

192,168,0,95	MY_TIMER001
Output Mapping	Outputs 17-24 🛛 🛛
Dutput 17 NONE	(7
Dutput 18 PRESSURE S	ELECT 1 🛛 🖉
Jutput 19 NUNE	(
Output 20(NONE	0
Output 21(NONE	0
Output 22(NONE	2
Output 23(NONE	0
Output 24(NONE	0
Back Input	Output Execute

(5) NONE will be replaced with PRESSURE SELECT 1 in the Input 18 field.

Press EXECUTE F_{4}^{D} This begins the process to download the change to the weld CONTROL.

D



Note: Once a schedule is edited the change is carried over to all spots with the same schedule.

192,168,0,95	MY_TIMER001	FI
Output Mapping	Outputs 17-24	
Output 17NONE		
Output 18 PRESSUR	E SELECT 1	
Output 19 NONE		
Output 20 NONE		
Output 21 NONE		
Output 22NONE		
Output 23 NONE		
Output 24 NONE		
Do you	want to Change EIP Information?	
Back Input	Output Confirm	

⑥ The message "Do you want to change EIP

information" will appear. Press CONFIRM F4

192,168,0,95	MY_TIMER001
Output Mapping	Outputs 17-24
Output 17[NONE	(
Output 18 PRESSURE	SELECT 1
Output 19 NONE	i i
Output 20(NONE	1
Output 21(NONE	l l
Output 22NONE	
Output 23NONE	
Output 24(NONE	(
Download Comple	te Power Cycle Required

① The message "Download complete power cycle required" will appear. Cycle power on the weld control to complete the process.

LEVEL 2.3 WELDER ID MENU

Returns the user back to the previous Program Mode menu. Allows the user back to the weld timer.

The Welder ID Menu allows the user to program an alpha-numeric name to the weld timer.

TO ENTER A WELDER ID NAME, PERFORM THE FOLLOWING STEPS:

Press the key. Ensure the green LED is ON. (1)(2)keys to enter an alpha-numeric name. Using the **456** While the Shift Key is still ON, press the **ENTER** key to add a space (3) or the *ESC* key to backspace. key. Ensure green LED is OFF Press the (4)(5) Press the **ENTER** key to save the changes to DEP memory. 6 The Download button will now change state from the previous default "ghosted-out" state. Press F2 to save changes to the weld control.

LEVEL 2.4 RELOAD OPTIONS MENU

The Reload Options Menu allows the user to configure many different weld control options. The control options available will vary depending upon the customers application requirements and the firmware loaded into the weld control.

Below is an example of a typical Reload Options Menu:



2. 4. 1 CHANGING THE CONTROL OPTIONS

The following explains how to change the control options, using Reload Defaults as an example. In this example, the weld timer will be changed from ROBOT MODE to MACHINE MODE:



HIDE or SHOW, for the non-configurable setup parameters.



③ The message, "Do you want to RELOAD CONTROL information?"

will appear. Press CONFIRM process to the weld timer.

F2 . This begins the download



When the download process is complete, the message, "Download Complete Power Cycle Required" will appear. Cycle power on the weld control to complete the process.

2. 4. 2 SETT	TING THE WEL	D CONTROL	LANGUAGE

192.168.0 RELOAD I LANGUAGE BREAKER SPOT TO DIAGNOSI NON USEF ARCHIVE ARCHIVE WEBPAGE	A.95 MY_TIMER001 Control Options Control Options (Cerglish) (*) <td cols<="" th=""></td>	
Back	Execute	
	192,168,0 RELOAD I LANGUAGE BREAKER SPOT TO DIAGNOST NON USEF ARCHIVE ARCHIVE HEBPAGE Back	

The Language Menu allows the user to select weld control language.

English is the default language of the weld control. To reload application in any of the available languages, follow the procedure below.

① Using the arrow key, move to the "Language" field on the screen and Press ENTER. The drop down list will display all available languages.

Using the arrow key, move to the desired language and press **SPACE** to select the language.

195*109*6*23	15347307	FAUL
Cor	trol Options	-
Reload Def <u>aul Ts:</u>		\underline{v}
LANGUAGE: (Espand		
FUNCTION TIMING:		
CDOT TO CCU OCCTO	UK: (<u>VENHBLED7 ()</u> NMENTA (ZONE TO ONE?	E CEN
5PUT TU SCH H5510	MNENT: (VOME TO OME)	
NON LIGED GETLIPG+		
ARCHIVE TRIGGER+		
HEBPAGE REFRESH:	(10 SEC) 🕤	
Constitution and a second s		
Back Evecute		
DOCK LACCULC		

② The selected language will be displayed in the "Language" field.





③ The message, "Do you want to RELOAD CONTROL Information?" is displayed.





③ Cycle power to the control to complete the language change procedure.

BREAKER TYPE

192.168.0.95	MY_TIMER001
RELOAD DEFAU LANGUAGE: (BREAKER TYPE; SPOT TO SCH & DIAGNOSTIC IN NON USER SET ARCHIVE TRIGO ARCHIVE TRIGO ARCHIVE DATA; WEBPAGE REFRE	Control Options TS: (OFF) (v) nglish) (v) (SHUNT TRIP) (S(SHUNT TRIP) (TO ONE) (v) IF(UV TRIP) IF(UV TRIP) IF(UV TRIP) IF(UV TRIP) S(CHIDE) (v) IF(UV TRIP) S(CHIDE) (v) IF(UV TRIP) IF(UV
Back Exec	ute

(1) Using the arrow key, move to the "Breaker Type" field on the screen and Press *ENTER*. The drop down box will display the available breakers. Using the arrow key, move to the desired breaker type and press *SPACE* to select.

COMM LOSS	11207466
	Lontrol Uptions
SPOT TO SCH	ASSIGNMENT: (MANY TO ONE)
DIAGNOSTIC I	NFO: (OFF) 🐨
NON USER SET	
HKCHIVE DEEA	6EK: (<u>1 NH7 (V)</u> ULT NATA+ (ALL) (R)
Do ye	ou want to RELOAD CONTROL Information?
Back Cont	Firm

② The message "Do you want to RELOAD CONTROL" Information?"

is displayed. Press $\boxed{\frac{B}{F2}}$ to Confirm the selection.



③ When the download process is complete, the message, "Download Complete Power Cycle Required" will appear. Cycle power on the weld control cabinet to complete the process.

2. 4. 3 SPOT TO SCH ASSIGNMENT

The SPOT TO SCH ASSIGNMENT menu allows setting up welding schedules that are associated with spot numbers. Another feature of this option is to initiate the weld control based on spot numbers instead of schedule numbers. For detailed description of the Spot ID feature refer to your firmware specific manual.

Spot to Schedule assignment can be made with the following two options:

ONE TO ONE (Default)	One schedule assigned to one spot
MANY TO ONE	One schedule assigned to Many spots

SPOT TO SCH IN ONE TO ONE MODE (DEFAULT):

192,168,0,95	MY_TIMER001 FAUL
C	Con <u>trol Options</u>
Reload Def <u>aults</u>	: (OFF) 💮
LANGUAGE: (Engl	lish) 🕑
Breaker Type: 🛽	(UY TRIP) 💌
SPOT TO SCH ASS	IGNMENT: ((MANY TO ONE) 🗑
DIAGNOSTIC INFO	: (OFF) 🗑
NON USER SETUPS	: (HIDE) 🕤
ARCHIVE TRIGGER	: (1 MH) 🔿
ARCHIVE DATA: 🕅	(DEFAULT) 🕤
HEBPAGE REFRESH	: (10 SEC) 🕝
	·
Back Execute	e
х Д	

Using the arrow key, move the cursor to the "SPOT TO
 SCH ASSIGNMENT" field and press *SPACE* In the drop down box will display the available options.

In this procedure, we will leave it at default mode ONE TO ONE.



192.168.0.95	MY_TIMER001	FAULT
Con RELOAD DEFAULTS: (LANGUAGE: (<u>Englis</u> BREAKER TYPE: (<u>UV</u> SPOT TO SCH ASSIG DIAGNOSTIC INFO: (NON USER SETUPS: (ARCHIVE DATA: (<u>OE</u> HEBPAG Do you wan TI	Trol Detions (OFF) \[0] TRIP) (OFF) (OFF) (OFF) (OFF) (T) (AIDE) (AIDE)	Ø
Back Constinue		

② The message, "Do you want to RELOAD CONTROL information?"

will appear. Press CONFIRM process to the weld timer.

 F_2 . This begins the download



- ③ When the download process is complete, the message, "Download Complete Power Cycle Required" will appear. Cycle power on the weld control to complete the process.
- **NOTE:** When this mode is selected, Spots and Schedules have a One to One relationship where a unique spot is assigned to a specific schedule.

SPOT TO SCH IN MANY TO ONE METHOD:

COMM LOSS	Γo	ntrol Or	11207466	AL	ERT
RELOAD D SPOT TO DIAGNOST NON USEF ARCHIVE ARCHIVE	DEFAULTS: SCH ASSI TC INFO: SETUPS: TRIGGER: DEFAULT I	(OFF) GNMENT: (OFF) (<u>(HTDE)</u> (<u>1 MH)</u> DATA: ((CONE TO ((Chany to (Cone to ((T) All) (T)	V DNE) V ONE) NE)	•
Back	Execute				

Press the arrow key twice to bring the cursor to SPOT TO
 SCH ASSIGNMENT. Press *SPACE* ENTER This opens up a drop down box displaying the available modes. Press the arrow key to select MANY TO ONE.







(4) Do you want to RELOAD CONTROL information will be displayed. Press $\frac{B}{F_2}$ to confirm.



(5) Press F_{2}^{B} to Execute and cycle power to the weld control to confirm the change.



NOTE: When this mode is selected, more than one spots can be assigned to a single schedule. Up to a maximum of 1000 associations to a single schedule are allowed.

LEVEL 3. 1 LOCAL ETHERNET MENU

192,168,0,	.95	MY_TIMER001	

The Local EtherNet Menu allows the user to view and edit the Local EtherNet configuration settings.

CHANGING THE LOCAL ETHERNET IP ADDRESS, SUBNET MASK OR GATEWAY ADDRESS

Perform the following steps to change the Local EtherNet IP Address, SubNet Mask or Gateway Address:

Press the for key to move the cursor to the appropriate line to be edited (IP Address, SubNet Mask or Gateway).



- Press the and set is keys to move the cursor over the appropriate field to be edited.
- (3) Press the **COO** keys to enter a numeric value.
- Press the ENTER key to save the change or the ESC key to cancel the change.
- (5) Repeat steps 1 though 4 if changes are required for any additional fields.

.92,168,0,95	MY_TIMER001
Local	Ethernet
IP Address = SUB NET MASK = Gateway =	89 • 89 • 200 • 250 255 • 255 • 0 • 0 0 • 0 • 0 • 0
Back Download	

6 After changes are made of any of the address fields, the

Download button changes its state to black. Press F_2 to DOWNLOAD changes to the weld control.



⑦ When the download to the weld timer is complete, the message "Download Complete Power Cycle Required" will appear. Cycle power on the weld control for the changes to take effect.

CHANGING THE LOCAL ETHERNET IP ADDRESS VIA THE SERIAL NETWORK

If the DEP does not establish a Local EtherNet connection with the weld control, the IP Address of the weld control may not be set to 89.89.200.250. To verify, perform the following steps:



1

(2)

NOTE: For instructions on how to physically connect the DEP-300s to a weld control for Serial network communications, see Physical Connections in Chapter 1.





(3) When a serial connection is established between the DEP and the weld timer, press the PROGRAM MODE $\begin{bmatrix} B \\ F2 \end{bmatrix}$ key.



(4) From the Program Mode Menu, press the MORE $\frac{E}{FS}$ twice.





5 Press the LOCAL ETHERNET [F1] key.

SERIAL HCU# 0	UB0510L
Local E IP Address = SUB NET HRSK = 2 Gateway =	thernet 89. 89. 200. 255 55. 0 · 0 · 0 0 · 0 · 0 · 0

6 Verify the IP Address is set to 89.89.200.250. If it is incorrect, continue to step 7.



- ⑦ Press the and keys to move the cursor over the appropriate field to be edited.
- Press the
 Press the
 #
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- (9) Press the $\frac{SPACE}{ENTER}$ key to save the change or the $\frac{DELETE}{ESC}$ key to cancel the change.
- (1) Repeat steps 7 though 9 if changes are required for any additional fields.



(1) Press the DOWNLOAD [F2] key to save changes to the weld timer.

SERIAL HCU# 0 UB	0510L
Local Ethernet IP Address = 89• 89• SUB NET MASK = 255• 0• Gateway = 0• 0•	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Developed Consists Deves (Surla Denvierd
Back Download	,gcie Kequirea

 When the download to the weld timer is complete, the message "Download Complete Power Cycle Required" will appear. Cycle power on the weld control cabinet for the changes to take effect.

LEVEL 3.2 FIELDBUS MAPPING MENU



The steps to configure the FieldBus I/O Mapping are identical to the steps to configure the EIP I/O Mapping. While in the FieldBus Mapping Menu, follow the steps explained above in either EIP Input Mapping or EIP Output Mapping (whichever is applicable), to configure the FieldBus I/O map.

1	
192,168,0,95	MY_TIMER001 FAULT
Field	Bus <u>Options</u>
RELOAD DEFAUL	T:(OFF) 💮
NODE ADDRES	s: 11 🗊
BAUD RAT	E: (500K) 😨
BYTE SIZ	E : (4by4) 🗇
ESPONSE DELAY IN MS	EC: (1) 🗑
Back Options	Input Output Execute
4	

LEVEL 3.3 I/O MAPPING



The I/O Mapping Menu is customer application specific. Consult the weld control firmware manual for more information.

LEVEL 3.4 NETWORK ADDRESS MENU

-				T
COMM LOSS	5	MY_TIMER001		
Local Ethernet	FieldBus I/0 Mapping Mapp) Network ing Address	MORE 🕨	
1	· · · · · · · · · · · · · · · · · · ·			

The Network Address Menu allows the user to set the Serial Network Node Address for the weld timer.



The default address is 0.

TO CHANGE THE SERIAL NETWORK NODE ADDRESS, PERFORM THE FOLLOWING STEPS:





LEVEL 4.1 SERVO CAL

The Servo Cal Menu is customer application specific. Consult the weld control firmware manual for more information.

LEVEL 4.2 SPOTS



The Spots menu allows the user to make the Spot to Schedule assignments.

Before moving ahead with this function, confirm the parameters previously determined (One to one or Many to One) in the RELOAD OPTIONS menu -"2. 4. 3 SPOT TO SCH ASSIGNMENT" on page 85.



ASSIGNING SPOTS IN ONE TO ONE MODE



② If no spots have been previously assigned, the screen displays "No Spots". Then proceed to step 3.

If existing Spots numbers are found, the screen will default to the schedule view with associated spot number as depicted below.



	192,168,0),95	HY	_TIMER001	
		SPOT: #	No spots		
l	ASSI	GNED: #			
l			New	Renove	Switch
	Back				

192.168.0.9	5 NY_TIMER001
	No spots
SP	DT: #: <u>256</u> D: #:1
Back	New

④ By default 256 is displayed the Spot # field since that is the minimum spot number that can be assigned. Numbers 1-255 are reserved as there are 255 welding schedules and a number within that range may cause a conflict when firing.

	SPACE
To edit the Spot number, press	ENTER to insert the cursor within
the Spot # field and using the	keys, enter the desired spot
number and press SPACE . You v	vill notice that the cursor will stop
blinking.	

192,168,0,95	MY_TIMER001
	No spots
SPOT: #:0	258
ASSIGNED: #	2
Back	New

(5) By default schedule # 1 is inserted in the Assigned # field. To edit

the schedule number, press key to move the cursor to the field and press **SPACE**. The cursor will begin to blink. Using the **SPACE** keys enter the desired schedule number and **SPACE**



TIP: To increase the numbers in increments of 1, press the key and press key to decrease the number by decrements of 1.

192,168,0,95	MY_TIMER001
	Download complete.
SPOT	* #258 🔿
Back	Renove

6 Press New F3 to complete the assignment. wait until the message "Download Complete" is displayed, indicating the Spot to Schedule assignments have been made.

Follow steps 4 -6 to add more spots and make the schedule assignments.

192,168,0,95	MY_TIMER001	Faul
Dupli	cate spot entry.	
SPOT: #	259	
Back Back		



NOTE: The error message displayed above is annunciated when the weld control is configured in ONE TO ONE MODE and an attempt is made to assign a new spots number to a schedule that already has a spot association.



Pressing Back $\int_{F_1}^{A}$ takes the user to the screen above.

F3 will open up the screen to add a new spot as shown in step 5.

TO REMOVE A SPOT:



enables the Removal of a spot.

		1
	192,168,0,95	MY_TIMER001
		258
		358 368
	CDOTA	2587
	SPUT:	*(258
	Page Page	
A	Clinin (* -6-	

By default the lowest spot number is visible in the Spot # field. To view all available Spots, press SPACE , which opens a list of



With the cursor on the selected spot number, press ENTER. Verify that the correct spot number is displayed in the Spot # field and

press **F3** to Remove the spot.

192,168,0,95	MY_TIMER001
Down1	load complete.
SPOT: #;	258
ASSIGNED: #:	2
Baalt	Neu

③ Wait for the message - "Download Complete" to indicate removal of the spot.

	COMM LOSS Start of spot # 258	HY_TIMER001	
	DIAPTQ NOLE-0 RATE=10 LINEAR STEPPER #0 ASS SET PRESSURE = 0 TURN ON HELD IN PROGR SQUEEZE 100 HSEC HELD 150 HS, 500 AHPS EXTEND HELD IF LOH CU PROCESS HELD FAULTS HOLD 80 HSEC TIDM ON UE10 COMPLETE SPOT: #258 ASSIGNED; #2 Back Ne	DZ HSLIDE=100Z IGNED (0 = OFF) ESS TACTOR RRENT/RAFT FAULT W Renove Switch	
E			
Pressing the F5	button lets the	e user Switch betwe	en spots.
	Сонн Loss 350 360 Spot: # (251	HY_TIMER001	
	Page Page Up		L.
Press F5 to dis	play the screen a	bove. Press SPACE ENTER	to view the list
of spots. Then usir	ig the 🚺 or	h keys or the	F1 to scroll
down by page and	F2 to scroll	up the page, move t	he cursor to the
desired spot numb	per and press	ACE TER ·	
The Spot # field wi	ll display the sel	ected Spot. Press	<i>c</i> <i>F3</i> to Switch.



The schedule assigned to the selected spot will be displayed.

TO EDIT A SCHEDULE:



COMM LOSS	MY_TIMER001
START OF SPOT # 2 ADAPTQ HODE=0 RAT LINEAR STEPPER #0 SET PRESSURE = 0 TURN ON WELD IN P TURN ON ISOLATION SQUEEZE 100 MSEC HELD 160 MS, 500 EXTEND WELD IF LO PROCESS MELD FAUL HOLD 80 MSEC TURN ON UELD COMP	33 E=100% HSLIDE=100% ASSIGNED (0 = OFF) ROGRESS CONTACTOR AMPS H CURRENT/RAFT FAULT TS
	Developed Tennet De

(2) Press P_{F4} to Insert a function in the weld schedule. For

detailed instructions on inserting a function follow the procedure - Insert a Function in a Weld Schedule on Page 49.

③ Press **F5** to Delete a function in a weld schedule. For detailed instructions on deleting a function follow the procedure -"Delete a Function from a Weld Schedule" on page 55.

Chapter 5: STATUS MODE



The Status Mode displays information on the overall welding status of various processes within the weld control.

These include:

- Faults
- Steppers
- RAFT Functions
- I/O Status
- Weld Data
- Errors
When the

F3 key is pressed, the following menu is displayed:



The Status Mode display tells you the options you can select when you press the corresponding keys $\begin{bmatrix} A \\ F1 \end{bmatrix}$ to $\begin{bmatrix} E \\ F5 \end{bmatrix}$.

FAULT	Press $\begin{bmatrix} A \\ F1 \end{bmatrix}$ to see the fault information logged at the weld control, set fault filtering and reset the weld control. (See page 106)
STEPPER STATUS	Press $\begin{bmatrix} c \\ F3 \end{bmatrix}$ to control the stepper. You can turn a stepper on or off, reset, or advance the stepper from this display. (See page 108)
RAFT	The $\begin{bmatrix} p \\ F4 \end{bmatrix}$ key allows the user to view the RAFT Menu. This option is customer application specific and may be inaccessible. (page 113)
MORE	The F s key displays additional Status Mode options (see below).

192,168,0,95 HY_TIMEROO1 HIC IO Held Pressure MORE Status Data Control MORE						-1
HIC IO Held Pressure MORE)	192,168,0	. 95	Hì	TIMER001		
HIC IO Held Pressure HORE Status Data Control HORE						
HIC IO Held Pressure MORE)						
HIC IO Held Pressure HORE Status Data Control HORE						
HIC IO Held Pressure HORE						
HIC IO Held Pressure MORE						
HIC IO Held Pressure MORE						
HIC IO Held Pressure MORE						
HIC IO Held Pressure MORE						
Status Data Control	HIC	IO	Held	Pressure	MORE 🕨	1
		Status 📗	Uata	[Control]	······~ ,	Л

HIC	Press F 1 to view the HIC Menu. This option is weld control firmware specific and may be inaccessible. (page 115).
I/O STATUS	Press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to see the current state of the I/O for a selected device.
WELD DATA	Press for view the status of certain key weld parameters. These include the schedule initiated, line voltage, power factor and secondary current provided during the last weld executed by the selected weld control.
PRESSURE CONTROL	The $\begin{bmatrix} p \\ F4 \end{bmatrix}$ key allows the user to view the Pressure Control Menu. This option is customer application specific and may be inaccessible. (page 120)
MORE	The from key displays additional Status Mode options (see below).



ERRORS	Press $\begin{bmatrix} A \\ F_1 \end{bmatrix}$ to view the Errors Menu. (page 120).
MORE	Press F 3 to return back to the first Status Menu screen.

FAULT MENU

The Fault Menu allows the user to view, reset and filter both faults and alerts. When a fault or alert occurs, it is displayed on the Fault Menu.

	080510	
	Fault	
SU UNIR ERR-BRI	KR IRTEDED :	



This display is used to determine which fault condition was detected by the weld control. The fault descriptions and troubleshooting instructions are defined in the firmware User Manual provided with the weld control unit.

The following options are available within the Fault Menu by pressing the corresponding keys:

ВАСК	Press F 1 to return back to the previous Status Menu screen.
OPTIONS	Press from the faults viewed on the Fault Menu.
RESET	Press F to reset both faults and alerts.

FAULT FILTERING

Press the OPTIONS button to categorize and filter what is viewed on the Fault Status Menu. Options include ALL, FAULTS, ALERTS or HISTORY.

NOTE:

Fault filtering options are customer application specific and may vary depending on the firmware loaded in the weld control. Consult the weld control manual for more information.



STEPPER STATUS MENU

The Stepper Status Menu allows the user to view the status of any stepper program within the weld control. Stepper programs can also be advanced and reset form this menu.



The Stepper Status display cannot be used to program the stepper profile or to set the stepper parameters. To do this, you must press the **PROGRAM MODE** key and press for the Review Stepper menu. (For more information, see "Level 1. 2: Review Stepper Menu" on page 63)

The information shown in the Stepper Status display is based on the stepper used by the schedule selected for a device.

COMM LOSS	Stepper 0 Stepper 1 Step #	HY_TIM Status N 🕑 4	R001	
E Total WeJ Tip Aux. Group	loost %I .d Count 5 Dresses ! Counter Number	18 40 50 0 1		
Ste	epper #	1		
Back Bdu		ner # Pes	t Gen Pass	+01

BACK	Press A F1 to return back to the previous Status Menu screen.
ADVANCE	Press F ₂ to advance the stepper program to the first weld of the next step. When the stepper advances, the following changes will occur in the Stepper Status Screen:
	 The Step Count will reset to zero. The Total Weld Count will advance to where its count would be at the first weld of the next step. The Aux. Counter will not change when the stepper is advanced. If the user wants the Aux. Counter count to match the Total Weld Count, the value will have to be manually entered here.



STEPPER #	Press 📻 to change the stepper program number being viewed on the Stepper Status Menu.
RESET GRP	Press f_{3} to Reset the Stepper Programs assigned to a Group (1or 2).
RESET ALL	Press F to globally reset all stepper programs.

The following chart describes the parameters, which appear on the Stepper Status Menu:

NOTE: The parameters displayed in this menu may vary depending upon the customers application requirements. For application specific information, consult the weld control firmware manual.

STEPPER	Turns the stepper either ON or OFF. The default position is ON.
	NOTE: This parameter is customer application specific and may be disabled. Consult the weld control manual for more information
STEP #	The step number the stepper program is currently in (1 through 5)
STEP COUNT	The weld count within the step, the stepper program is currently in.
BOOST% I	The current boost being applied to each weld.
60031761	NOTE: If a Percentage of Available Volt-Seconds weld function is used, this value will be displayed as a percentage. Conversely, if a Constant Current weld function is used, this value will be displayed in absolute amps.
TOTAL WELD COUNT	The total weld count since the beginning of the stepper program, when tip dress functionality is disabled in the stepper program. If tip dress functionality is enabled, refer to the Auxiliary Counter for total weld count.
TIP DRESSES	The Remaining Tip Dresses Count is a decrementing counter, which starts at the number entered in MAXIMUM TIP DRESSES parameter. This counter defines the maximum number of times the weld caps may be dressed before they must be changed. Each time the weld processor receives a tips dressed index, the Remain- ing Tip Dresses Count decrements by one. When this count decre- ments to zero, an END OF STEPPER FAULT is generated. This indicates the weld caps must be changed.
AUX. COUNTER	The Auxiliary Counter is an incrementing counter, which mirrors the Total Weld Count counter above. Its max count is set by the value entered in the Aux Counter Max Counts parameter in the stepper profile.

GROUP NUMBER	The stepper group that the stepper program is currently in.
STEPPER #	The stepper program number currently displayed. Pressing the Stepper # f_{3} key, allows the user to change the stepper program that is displayed.

STEPPER RESET

An END OF STEPPER FAULT indicates the stepper program has ended. At this point, the weld caps must be replaced on the gun and the stepper program(s) must be reset. Stepper Reset changes all counts within the stepper program back to their beginning value. See example below:

192,168.0	.95 St	eppg	HY_ r Stat	TIMER001 tus	
	Stepp	er 🛈	IN 🕤		
	Step	#	1		
	Step Cou	nt	0		
T-4-1	Boost	%L	0		
lotal	Heid Lou		0	7	
8	ux. Count	er	ŏ		
G	roup Numb	er	1		
	Stepper	#	1		

Stepper programs can be "globally" reset by pressing the ResetALL

 F_{F5}^{E} key in the Stepper Status Screen. When this is done, every

stepper program is reset, regardless of what group they are assigned to.

Perform the following steps from the DEP-300s Stepper Status Menu to globally reset the stepper programs:





② The message "Do you want to RESET ALL STEPPERS" will appear.



RAFT MENU



The **RAFT** Menu $\begin{bmatrix} P \\ F4 \end{bmatrix}$ allows the user to view **RAFT** data and perform certain **RAFT** functions. This feature is customer application specific and may be inaccessible. For more information, see **RAFT** (Resistive Adaptive Feedback Technology) in the weld control firmware manual.



ВАСК	Press F 1 to return back to the previous Status Menu screen.
REF COPY	Press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to copy the RAFT Reference Weld data from one schedule to another.
R MEASURE	Press F 3 to turn the R Measure Mode ON or OFF.
REF OFF	Press F to turn the Reference Mode ON or OFF.

The following describes the data tags displayed in the **RAFT** Status Menu:

NOTE: The data displayed in this menu may vary depending upon the customers application requirements. For application specific information, consult the weld control firmware manual.

SEQ#	Sequence (schedule) number
Mode	AdaptQ Mode ON/OFF (0=OFF, 1=ON)
ref h	Total heat of the Reference Weld
h	Total heat
ехр су	The number of milliseconds since the beginning of the weld at which expulsion was detected
PI	Process Integrity
ref e	Total energy of the Reference Weld

e	Total energy
NI	Nugget Integrity
TF	Tool Factor: The C-Factor of the last 3/4 of the weld time, minus the blanking period
ТІ	Tooling Integrity
RA	Average Resistance
RD	Resistance Drop
RE	End Resistance

HIC MENU

The HIC Menu is customer application specific. Consult the weld control firmware manual for more information.

IO STATUS MENU



The I/O Status Screen displays the status of every mapped I/O bit in the weld timer. Depending on the customers application, this can include:

- FieldBus I/O
- Ethernet I/O
- Local I/O
- Discrete I/O



Each I/O bit is represented by an I/O tag. Each tag will have either a "1" or "0" underneath it:

- "1" indicates the bit is HIGH or ON. "0" indicates the bit is LOW or OFF.
- **NOTE:** The I/O bits displayed will vary depending upon the customers application requirements. For application specific information on I/O mapping, tag definitions, etc., consult the weld control firmware manual.

WELD DATA MENU



The Weld Data Menu allows the user to view various Weld and **RAFT** data values.



ВАСК	Press F 1 to return back to the previous Status Menu screen.	
PREVIOUS	Press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to go back to the previous Weld Data Menu screen (if applicable).	
NEXT	Press 📻 to go to the next Weld Data Menu screen (if applicable).	
RESET	Press P_{4}^{p} to reset all the displayed data values to zero.	

NOTE: The data displayed in this menu may vary depending upon the customers application requirements. For application specific information, consult the weld timer firmware manual.

THE FOLLOWING DESCRIBES THE DATA TAGS DISPLAYED IN THE MENU:

WELD DATA

DATA TAG	DESCRIPTION		
bus V	DC bus voltage (MAX, AVG, MIN)		
Sec I	Secondary current (MAX, AVG, MIN)		
Pri I	Primary current (MAX, AVG, MIN)		
hfc	High frequency cycles (inverter output)		
ont	On-time of the inverter in microseconds		
%I	Percent of available volt-seconds mea- surement		
cfactor	C-Factor calculation		
sch#	Schedule number		
lv	Inverter DC bus voltage (updated fre- quently)		
cont#	Contactor number		

RAFT[™] DATA

DATA TAG	DESCRIPTION
Mode	AdaptQ Mode ON/OFF (0=OFF, 1=ON)
ref h	Total heat of the Reference Weld
h	Total heat
ехр су	The number of cycles since the beginning of the weld at which expulsion was detected
Learned I	The running adaptive current, as learned by the adaptive algorithm, from the last weld
PI	Process Integrity
ref e	Total energy of the Reference Weld
е	Total energy
wslide	Programmed WSLIDE from the AdaptQ function
thick	The estimated stack-up thickness based on the resistance reading during the weld.
NI	Nugget Integrity
ТІ	Tooling Integrity
RA	The average resistance of the last 166 mid- frequency cycles
RD	The resistance drop since the peak resis- tance (RP)
osr	Offset resistance as calculated for the stepper group
rise time	Number of MFDC half cycles to reach cur- rent
% saturation	Percent of MFDC half cycles terminated by primary current

PRESSURE CONTROL MENU



The Pressure Control Menu is customer application specific. Consult the weld control firmware manual for more information.

ERRORS MENU



The Errors Menu is a diagnostics tool, which logs network communication and DEP errors. This is for WTC use only.

Chapter 6: DISPLAY MODE



The Display Status menu provides the user with information regarding hardware status the weld control the DEP is connected to.

The Display Mode enables you to perform the following tasks to change:

- To quickly access weld schedules
- To review the weld functions in a schedule
- To adjust the adjust weld current.



The following is the information typically displayed within the Display Status Menu. The actual information displayed may vary depending on the firmware version loaded into the weld control and the customer's application requirements:

INFORMATION DISPLAYED

- Timer firmware revision and inverter type.
- Timer assembly build date.
- Inverter chill plate temperature.
- FPGA revision number.
- Timer assembly expansion board type and revision number.
- Timer assembly CPU part number and serial number.
- EtherNet 1 MAC Address.
- EtherNet 2 MAC Address.
- RedBoot version.

The following options are available within the Display Status Menu by pressing the corresponding keys:

BACK	Press F 1 to return back to the Mode Selection Menu
HEAT DISPLAY	Press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to change the heat function parameters within a weld schedule without going into the Program Mode Menu. See Heat Display Menu for more information.
REFRESH	Press $\mathbf{F_3}$ to show the most up to date information.

HEAT DISPLAY MENU

400 400 A DE	MY TIMEBOOM
192,168,0,95	HY_IIHER001
START OF SCHED Adaptq Mode=0 Weld 160 MS, 5	ULE # 5 RATE=100% WSLIDE=100% 00 AMPS
END OF SCHEDUL	Ε
L	
SCHEDUL	<u>E # 5</u>
Back Sch#	Download

The Heat Display Menu allows the user to change the amount of weld energy provided by a schedule without using Program Mode and edit *RAFT* function parameters within a weld schedule without going into the Program Mode Menu.

ВАСК	Press f1 to return back to the Mode Selection Menu	
SCH#	Press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to change the schedule number being viewed. See Changing the Schedule Number below.	
DOWNLOAD	Press $\mathbf{F_3}$ to download changes to the weld timer. See Editing a Parameter below.	

NOTE: The functions typically listed in the Heat Display Menu are schedule functions #20 through #49. The actual functions displayed may vary depending on the firmware version loaded into the weld control and the customer's application requirements. For a list of these functions, see Chapter on Schedule Function List within the weld control firmware manual

CHANGING THE SCHEDULE NUMBER FOR HEAT DISPLAY

192,168,0,95	MY_TIMER001
start of schedule	# 1
WELD 0 MS. 0 %I	
WELD 210 MS. 10000	AMPS
END OF SCHEDULE	
	1

To view a different schedule perform the following steps:

START OF SCHEDULE	# 1	
HELD 0 MS. 0 %I HELD 210 MS. 1000	0 AMPS	
END OF SCHEDULE		
есислин с	. 1	

- (1) Press the SCH # $\begin{bmatrix} B \\ F2 \end{bmatrix}$ key. A window will appear around the schedule number at the bottom of the screen.
- Using the press share. The new schedule is displayed.

EDITING A PARAMETER

To change a function parameter, perform the following steps:

192,168,0,95 MY_TIMER001 STRRT OF SCHEDULE # 2 RDAPTO MODE=0 RATE=100% MELD 160 MS. SOD ANPS END OF SCHEDULE SCHEDULE # 2 SCHEDULE # 2 Back Sch# Download
(1) Using the s and r keys move the cursor over the function to be edited and press SPACE .
192,168.0.95 HY_TIMEROO1 START OF SCHEDULE # 2 ADAPTO HODE-0 RATE-100% HSLIDE-100% MELD 160 HS. 500 RHPS END OF SCHEDULE 4ELD 160 HS. 50 0 RHPS SCHEDULE # 2 Rpply Cancel
② A window will appear around the function parameters at the bottom of the screen. Press the and keys to move the cursor over the parameter to be edited.
 Using the test test is a second test of the second test is a second test is a second test is the second test is th
④ Press Apply $\frac{B}{F2}$ to save the changes to DEP memory.
(5) Press the DOWNLOAD F_3 key to download and save the changes to the weld control. The message "Download Complete" will appear to indicate completion of the change.

Chapter 7: CHANGE TIMER

The Change Timer menu allows the user to connect the DEP-300s to different weld timers on the network. This feature is accessible only when the DEP-300s is connected to either the Global EtherNet or Serial Network, see "Network Communications" on page 29. If the DEP-300s is connected via the Local EtherNet, the Change Timer feature is inaccessible.

The following options are available within the Change Timer Menu by pressing the corresponding keys:

192 168 0 8	13247003	<u> </u>
192.168.0.95	MY TTHER001	NEH
192.168.0.130	08503125	NEH
192,168,0,131	FCMP_MH11A	NEH
192,168,2,141	A15600-23B	NEH
192,168,2,142	614611-09	NEH
192,168,10,1	13247007	NEH
192,168,10,2	13247016	NEM
192.168.10.3	1.5247019	I NEW

ВАСК	Press A	to return back to the Mode
	Selection	Menu

SCAN	Press $\begin{bmatrix} B \\ F2 \end{bmatrix}$ to initiate a scan of the network for active weld timers. A list with the results is displayed.
EDIT	Press for manually edit or delete a weld timer IP Address. For more information, see Manually Search for a Weld Timer.
	Note: This feature is accessible only when the DEP-300s is connected to the network via the Global EtherNet. It is inaccessible when connected via the Serial Network.
SAVE	Press for to save the edited changes. For more information, see Manually Search for a Weld Timer
	NOTE: This feature is accessible only when the DEP-300s is connected to the network via the Global EtherNet. It is inaccessible when connected via the Serial and Local EtherNet Networks.
CLEAR	Press $\boxed{F3}$ to clear all the weld controls from the list.

CONNECT TO A DIFFERENT WELD TIMER

When the DEP-300s has successfully connected to a weld timer, the Mode Selection Menu is displayed. In the example shown below, the DEP-300s is connected to a weld timer identified by IP Address 192.168.0.95 and Welder ID MY_TIMER001.



TO CONNECT TO A DIFFERENT WELD TIMER/ CONTROL, PERFORM THE FOLLOWING STEPS:



① From the Mode Selection Menu, press **F5** to CHANGE TIMER.

IP AL	<u>IDRESS</u>	HELD	ER ID	<u> </u>
192.1	68.0.8	13247	003	NEH
192,16	8.0.95	HY_TIMEROO	11	NEH
192.16	8.0.130	08503	125	NEH
192,16	8.0.131	FCMP_	MH11A	NEH
192,16	8.2.141	A1560	0-23B	NEH
192,16	8.2.142	G14611-09		NEM
192,16	8.10.1	13247	007	NEH
192,16	8.10.2	13247	016	NEH
192.16	8.10.3	13247	019	NEH
				
	CCON	E 222 E	C	C1

② The Timer/Control Selection Menu will appear with a list of multiple weld timers, identified by their IP Address and

Welder ID. If the list is empty, press the $\begin{bmatrix} B \\ F2 \end{bmatrix}$ SCAN key. The DEP-300s will then scan the network and look for active weld timers/controls.

Upon completion of the scan, a list of active weld timers/ controls will populate the field.

3 Using the and keys, move the cursor to highlight the desired weld timer/control IP Address and

Welder ID. Press the ENTER key.

192,168	.0.130	08	503125	
	Connected t	o: 192.1	58.0.130	
	C	DMPLETE		
	G14106 -	00-03 IN	VALI	
Hone	Program	Status Mode	Display Mode	Chang

(4) The DEP-300s will now attempt to connect to the desired weld timer. Upon completion, the Mode Selection Menu will appear, indicating that it is now connected to the new timer. Verify the IP Address and Welder ID on the top of the screen to confirm connection to the new timer/control.

MANUALLY SEARCH FOR A WELD TIMER/CONTROL

This feature is only available when the DEP-300s is connected to the Global EtherNet. If the DEP-300s is connected via the Local EtherNet or the Serial Network, this feature is inaccessible.

To manually add an IP address and search for a weld timer/control on the Global EtherNet, follow the procedure in Chapter 2-Home Menu under "Network Communications" on page 29. FAQ

HOW DO I UPGRADE DEP300 (EDEP) SOFTWARE?

92,168,	0.95	HY	_TIMER001	
	Connected	to: 192	.168.0.95	
		COMPLETE		
	614611	-10-09	INYALI	
Hone	Program	Status	Display	Change

- ① Find the DEP's IP ADDRESS. When the DEP is powered up, it should be in the Home Menu. Press F1(System Settings) and write down the IP Address.
- (2) Change your PC's IP Address to be one off from the EDEP's IP Address so they can talk. For example, if the EDEP's IP address is 89.89.200.249, change the PC's IP address to 89.89.200.250.

- ③ Connect the EDEP's 15 pin D-sub cable into the DEP door port. On the back of the door port is an RJ45 EtherNet connector mounted on a PC board. Plug a standard EtherNet cable into the RJ45 connector and plug the other end into the PC's EtherNet port.
- ④ On the EDEP while in the "System Settings" screen, press F3(Flash DEP). The EDEP will post a message indicating it is waiting for the software.
- (5) Now run the qularitydownloader.exe file. If you see a pop-up window stating "Couldn't open serial port", click OK.
- 6 Select the "Ethernet" tab.
- ⑦ Type in the IP Address of the EDEP (written down in step #1).
- ③ Click the "Browse" button and find the update file, q06905-23_08_28_2015_release.bff. Select it with your mouse and then click "Open".
- (9) Click the "Download Application" button.
- (1) You should briefly see a download status bar.
- (1) When the download is complete, the EDEP should display a message that it is receiving the data. When complete, it will reboot.
- ② After the EDEP reboots, it should be in the Home Menu. Press F1 (System Settings). The EDEP software should read "Q06905-00-23 (date)".

Notes:



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