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INDUSTRIAL ELECTRONIC ENGINEERS, INC. 7740 Lemona Ave., Van Nuys, CA 91409-9234, U.S.A. • Tel 818-787-0311

PDK-0003-XXXXXX* VF POS Pole Display Kit INSTALLATION and OPERATING INSTRUCTIONS

Key Features:

- Vacuum Fluorescent (VF) display 2 line x 20 character 9mm 5x7 dot matrix with contrast enhancing filter, EIA-232 interface, detachable DB-9F host interface/power supply cable and 24Vdc wall mount power supply.
- IEE's extensive command and control set.
- Eight selectable character fonts, block cursor, dimming control and selective blinking.
- Display module housed in a compact, impact resistant enclosure with fourposition tilt-recline and 330° swivel adjustment. Pole and mounting base kit are included.
- Display certified to the requirements of UL, CE, TUV and FCC Part 15, Class A.

(* Refer to Page 9 for exact configuration of your kit).

Table of Contents:

Page 2 provides General Specifications and an introduction to the Assembly and Installation of the pole display. **Page 3** provides an exploded view of your pole display assembly with part numbers, so you can identify and verify that you have all the parts ordered.

Pages 4 and 5 provide instructions for assembling the display and attaching it using one of many mounting configurations.

Pages 6, 7 and 8 provide information on how to operate the display including provisions for self-test, software commands, character fonts and User Defined Character (UDC) loading.

Page 9 provides the kit numbering scheme that defines the exact contents as referenced by the number on the lid of the shipping box. **PDK-0003-XXX** defines the characteristics of the display head (i. e. display type, software functionality, pole position, housing color and filter color) and cannot be revised.

PRODUCT SUPPORT

For information not found in these Instructions, please contact IEE's Sales Application Engineering Department:

Industrial Electronic Engineers, Inc. 7740 Lemona Avenue Van Nuys, California 91409-9234 USA

 Phone:
 (800) 422-0867 or (818) 787-0311

 Fax:
 (818) 901-9046

 E-mail:
 mail@ieeinc.com

PDK-0003-INOPML September 17, 2001

GENERAL SPECIFICATIONS

Interface:		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·									
Power:	Supply voltage	11-29 Vdc	Pin Assignments:									
	Supply current @24 Vdc	213 ma (max)	(Host) DB-9F									
	Supply risetime	100 milliseconds (max)										
 Caution: 	Supply sequencing	Rapid ON/OFF sequencing	COM 1 COM									
		is not recommended.	RXD 2 TXD									
	Start cycle	The display is not ready to accept	TXD 3 RXD									
		data until 1.2 seconds after	DTR 4 DSR									
		application of power	SIG GND 5 SIG GND DSR 6 DTR									
01		0000 haved 8 hits no parity	DSR 6 DTR N.A. 7 N.C.									
• Signal:	Serial EIA-232	9600 baud - 8 bits - no parity +3V to +15V (space/logic 0)	CTS 8 DTR									
	Serial input levels	-3V to -15V (mark/ logic 1)	N.A. 9 N.C.									
	Data Format											
	+V (LSB)	(MSB)										
		D_2 D_3 D_4 D_5 D_6 D_7										
	V START	8 DATA BITS	STOP									
	BIT		ВІТ									
Environmental:												
	4											
Operating I	• Operating Temperature: 0 to +70 °C (+32 to +158 °F)											
Storage Ten	nperature:	-20 to +70 °C (-4 to +158 °F)										
Relative Hu	midity:	0 to 95% (non-condensing)										
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ASSEMBLY and INSTALLATION

Overview

To achieve the greatest mounting and cabling flexibility available in a POS pole display system this kit provides a cable break a few inches from the pod. The DIN8M on the module pigtail cable connects to the DIN8F on the Host/Power cable assembly after it has been installed and routed through the pole. This allows easy connect and disconnect of the display module.

The DIN8F should be routed through any holes, slots, etc. in the installation and mounting hardscape (organizers, hardware, mounting surfaces, mounting bases or kits) between the Host DB9 and Power Supply connections before it is routed through the pole, from the bottom (threaded end). The independent power supply cable provides additional flexibility in locating the wall mount power supply

Pages 3, 4 and 5 provide information on the assembly and installation/attachment of the pole display. Details are provided for attaching the pole to a variety of bases, kits, surfaces and organizers

Installation Instructions:

Perform these electrical installation steps after, or as a part of the attachment instructions appropriate for the specific mechanical installation:

- 1 Connect the DB-9 (female) to the appropriate port on the host system
- 2 Plug the wall mount power supply into an appropriate AC outlet
- 3. A blinking cursor should appear in the left-most position on the top line The POS display is now ready for operation using the commands and codes provided on pages 6, 7 and 8.

EXPLODED ASSEMBLY VIEW and PARTS REFERENCE



3

ASSEMBLY INSTRUCTIONS

Mounting kits:

- 35360-0X SURFACE MOUNTING KIT (standard)
 - (1) 35320-XX SURFACE MOUNT PLATE
 - (1) 48596-01 CONDUIT NIPPLE
- 35697-0X BASE KIT, HEAVY METAL
 - (1) 35632-XX PLATE, MULTI-PURPOSE
 - (1) 35299-XX ESCUTCHEON RING
- (1) 48596-01 CONDUIT NIPPLE
- 36231-0X ICD POLE KIT
 - (1) 36297-XX WASHER, REDUCING
 - (1) 49003-01 CLOSE NIPPLE
 - (1) 49012-01 WASHER, REDUCING
 - (1) 48678-01 LOCKNUT

36634-0X MOUNTING KIT, SHEET METAL BASE

- (1) 36633-XX BASE, SHEET METAL
- (1) 48596-01 CONDUIT NIPPLE
- (4) 48765-10 #8-18 PAN HEAD SCREW, THD FORMING
- 36631-99 APG BRACKET KIT
 - (1) 36630-99 BRACKET, POLE
 - (1) 48596-01 CONDUIT NIPPLE
 - (2) 48989-02 #8-32 PAN HD. SCREW, LOCKWASHER
 - (2) 43311-04 #8-32 NUT, HEX
- 36632-0X MS CASH KIT
 - (1) 36297-XX WASHER, REDUCING
 - 49073-01 WASHER, FLAT (1)
 - (1) 48596-01 CONDUIT NIPPLE

Surface Mount and Freestanding Configurations:

Mounting Kit, Sheet Metal

Thread the DIN8F connector through a hole in the mounting surface or one of the two side openings in the bracket and then through the conduit nipple. Thread the connector through the bracket top hole and into the threaded end of the pole, continue to feed the cables in until the connector emerges from the pole, and pull out some stack. While holding the conduit nipple in place, screw the pole down snugly onto the bracket. The sheet metal base can be freestanding, mounted with 48765-10



screws or slid under the cash register etc.

Surface Mount Plate

Base Kit, Heavy Metal

Thread the DIN8F connector through a hole in the mounting surface and conduit nipple or just through the conduit nipple. Thread the cable through the base, escutcheon ring and pole. Pull some cable slack through, push the nipple into the recess in the base, put the pole in place in the escutcheon ring and tighten it onto the nipple threads until snug



Display Module and Pole Assembly:

The display module is attached to the pole assembly by mating the DIN8 connectors, inserting the display yoke into the pole at the end closest to the set screw, and then rotating the display.

breakout tab if applicable

- 1. Push the cable slack back into the pole.
- 2. Insert the display module partially into the pole and align the set screw with one of the two notches on the yoke bushing
- 3. Push the yoke bushing completely into the pole, then rotate the module on the pole as desired.



Thread the DIN8F connector through a hole in the mounting surface and conduit nipple, or breakout one of the tabs in the

surface mount plate (use wide, square jaw pliers) and route the cable through the conduit nipple. Thread the cable through the surface mount plate and pole. Holding the pole in the plate, tighten the conduit nipple into the pole. Attach the mounting plate to the surface, being careful to route the cables through the

TO REMOVE THE MODULE:

Rotate the module in either direction until the set screw touches the stop on the voke, then pull the module straight out from the pole until the DIN8 connectors are exposed and the module can be disconnected.



APG CASH DRAWER

Thread the DIN8F connector through the conduit nipple, bracket and pole, pulling out some slack. Hold the nipple in place and tighten the pole down onto the bracket. Mount the assembly (through the partner) in the selected position along the row of mounting holes at the rear of the drawer using the hardware as shown.



MMF CASH DRAWER

Loosen the U-clamp nuts on the pole mounting bracket in the POS platform system. Thread the DIN8F connector through the POS platform, eccentric washer and pole. Seat the pole in the bracket to full depth and tighten the U-clamp nuts to secure the assembly in place



INDIANA CASH DRAWER

Remove the mounting bracket on the underside of the shoe. Tighten the close nipple into the pole. Thread the DIN8F connector through the locknut, metal washer, shoe, painted washer and pole. Put the pole on the painted washer and tighten it in place with the locknut.



MS CASH DRAWER

Remove the clamp assembly from the mounting bracket on the underside of the POS deck Thread the DIN8F connector through conduit nipple, small washer, POS deck, painted washer and pole, pulling out some slack Slide the small washer under the edges of the spotwelded bracket at the underside surface of the POS deck. Hold the nipple in place through the washer and tighten the pole onto the nipple, over the painted washer, to secure the pole in place.



OPERATION

Numeric Order Control Codes:

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OchCLEAR THE DISPLAY (dursor does not move)All OSEA DEFINEDCLEARATERODhCARRIAGZ RETURN (returns cursor to left-most position onInte same line)Iso atomsIso atomsOFh+ MAKE CURSOR INDICATOR (FLASHING BLOCK) INVISIBLE (cursorN=02, ASCII and General EuropeanOFh+ MAKE CURSOR INDICATOR (FLASHING BLOCK) VISIBLEN=04, ASCII and General EuropeanClobEOTTOM LINE DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND LINE FZED (data entors find current cursor position on the bottomN=06, ASCII and HobrawN=06, ASCII and ISO 8859-2N=06, ASCII and ISO 8859-2Clab + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND I INE refer (aturns tice)N=06, ASCII and ISO 8859-2Clab + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND I INE refer (aturns find)N=06, ASCII and ISO 8859-2Clab + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND I INE refer (aturns find)N=00 (NORES TO C. Column 01-14 (h) IF-24-C-I.Clab + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND I INE refer (aturns find)N=06, ASCII and General European N=05, ASCII and General European N=06, ASCII and ISO 8859-2Clab + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND I INE refer (aturns find)N=00 (NORES TO C. Column 01-14 (h) IF-24-C-I.Clab + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND I INE refer (aturns find)N=01 (DOES)Clab + NORMAL CARACIER ON THE CURRENT I INE (atursatic Carriage Raturn is set to OFF)IF-40Clab + NORECONLI MODE (characters move from right to left on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and IAh)IF-55-NSEI RIGHTMESS IEVE		DEFAULI	configurations and clears
ODhCARRIAGE RETURN (returns cursor to left-most position on the same line)locationsSELECT CHARACTER SET + N=01, ASCII and General European N=02, ASCII and Cyrillic N=03, ASCII and Cyrillic N=03, ASCII and Cyrillic N=04, ASCII and Hebraw N=04, ASCII and Hebraw N=04, ASCII and Hebraw N=05, ASCII and ISO 8859-1 N=07, ASCII and ISO 8859-1 N=06, ASCII and ISO 8859-1 N=07, COLUMNAL ISO 8859-1 N=07, COLUMNAL ISO 8859-1 N=07, COLUMNAL ISO 8859-1 N=07, COLUMNAL ISO 8859-1 N=00, CASCII and ISO 8859-1 N=07, COLUMNAL ISO 8859-1 N=07, COLUMNAL ISO 8859-1 N=00, CASCII and ISO 8859-1 N=00, CASCII and ISO 8859-1 N=00, CASCII and ISO 8859-1 N=00, CASCII and ISO 8859-1 N=04, ASCII and ISO 8859-1 N=00, CASCI I and ISO 8859-1 N=00, CASCI I and ISO 8859-1 N=01-14(h) IF-24-C-I. MOVE CURSOR TO C, Column 01-14(h) IF-24-C-I. MOVE CURSOR TO C, Column 01-14(h) IF-40 SELECUTE SEIF TESI (use 1B-40 to terminate self test) IF-40 IF-40 IF-40 SELECUTE SEIF IESI (use 1B-40 to terminate self test) IF-40 IF-40 IF-40 IF-40 IF-40 IF-40 IF-40 IF-40 IF-40 IF-4		all USER DEFINED	CHARACTER
the same line) (15) MAKE CURSOR INDICATOR (FLASHING ELOCK) INVISIBLE (cursor location counter continues to function) (26) MAKE CURSOR INDICATOR (FLASHING ELOCK) VISIBLE (20) BOTTOM LINE DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND LINE FZED (moves cursor to left-most position on bottom line, when line is filled a vartical soroll occurs and the cursor is moved back to the left-most position on the bottom line) (21) + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND INE FEED (data enters from current cursor position, when bottom line) (21) + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE RETURN AND INE FEED (data enters from current cursor position, when bottom line) (21) + NORMAL CARRIAGE RETURN IND BINE (21) OF RIGHT-MOST CHARACIER ON THE CURRENT INE (21) OVERWRIE OF RIGHT-MOST CHARACIER ON THE CURRENT INE (21) OVERWRIE CARRIAGE RETURN IN DEFAULT configurations and clears User Defined Characters locations) 15) + DISPLAY CLAR (moves cursor to left-most position on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and lah) 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + CURSOR EMEM (returns cursor to upper left most 16) + C		locations)	
OShMKKE CURSOR INDICATOR (FLASHING BLOCK) INVISIBLE (cursor counter continues to function)+ N=01, ASCIT and General European N=02, ASCIT and Katkana N=03, ASCIT and Cyrillic N=04, ASCIT and Cyrillic		1B-74-N	SELECT CHARACTER SET
Obs MAKE CURSOR INDICATOR (FLASHING BLOCK) INVISIBLE (cursor Iocation counter continues to function) OFh + MAKE CURSOR INDICATOR (FLASHING BLOCK) VISIBLE <10b			+ N=01, ASCII and General European
locationcounter continues to function)N=03, ASCII and CyrillicOFAMAKE CURSOR INDICAGE INDICAGE REFURN AND LINE FZED (moves cursor to left-most position on bottomN=04, ASCII and Hebrew<10b>BOTTOM LINE DATA ENTRY WITH AUTOMATIC CARRIAGE REFURN AND LINE FZED (moves cursor to left-most position on the bottomN=04, ASCII and ISO 8859-1(11b)N=01(ACC)N=07, ASCII and ISO 8859-1(11b)N=04, ASCII and ISO 8859-1(11b)N=06, ASCII and ISO 8859-2(11b)N=06, ASCII and ISO 8859-2(11b)N=06, ASCII and ISO 8859-2(11b)N=01(ACC)(11b)N=01(20K)(11b)N=01(20K)(11b)N=01(REVENCE)(11b)N=01(20K)(11b)N=01(20K)(11b)N=01(20K)(11b)N=01(REVENCE)(11b)N=04(100K), N=03(60K), N=02(40K),(11b)N=04(100K), N=03(60K), N=02(40K),(11b)N=01(20K)(11b)N=01(REVENCE)(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=01(20K)(11b)N=01(20K)(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(11b)N=00(KORMAL/REVERSE DISPLAY MODE(
OFn + MAKE CURSOR INDICATOR (FLASHING ELOCK) VISIBLE C10h> BOTTOM LINE DATA BUTRY WITH AUTOMATIC CARRIAGE RETURN AND LINE FZED (moves cursor to left-most position on bottom N=04, ASCII and ISO 8859-1 line, when line is filled a vertical scroll occurs and the cursor is moved back to the left-most position on the bottom N=04, ASCII and ISO 8859-2 line, N=06, ASCII and ISO 8859-2 line, N=07, ASCII and Greek (line) Vertical scroll occurs and the cursor is repositioned to the left-most position on the bottom line is filled a vertical scroll occurs and the cursor is repositioned to the left-most position on the bottom line) ID-05(h) EPSON SPECIFIC EESPONSE CODE (display sends 05 to host) (1h> + NORMAL DATA ENERY WITH AUTOMATIC CARRIAGE RETURN AND INNE (automatic Carriage Return is set to OFF) IF-24-C-I. MOVE CURSOR TO C, Column 01-14(h) (1b) + MORIZONTAL SCACLI MODE (characters move from right to left on bottom IF-40 EXECUTE SEIF TEST (use 1B-40 to terminate lF-40 (21b> + OISPLAY CLEAR (moves cursor to left-most position on bottom Ine only, after line has been filled) IF-45-T SEI AII DISPLAY BIINK FIELDS TO AN INTERVAL= (21b> + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and lAh) N=01(20%) IF-72-N SEI ECI NORMAL/REVERSE DISPLAY MODE + N=00 (Roverse)			
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre> <pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre><</pre></pre>			
LINE FEED (moves cursor to left-most position on bottom line, when line is filled a vertical scroll occurs and the cursor is moved back to the left-most position on the bottom line) <11b> + NORMAL DATA ENERY WITH AUTOMATIC CARRIAGE REIURN AND LINE FEED (data enters from current cursor position, when bottom line) is filled a vertical scroll occurs and the cursor is re-positioned to the left-most position on the bottom line) <12b> + WRITH AUTOMATIC CARRIAGE REIURN AND LINE (automatic Carriage Return is set to OFF) <12b> OVERWRIE OF RIGH-MOST CHARACIER ON THE CURRENT LINE (automatic Carriage Return is set to OFF) <13b> HORIZONIAI SCROLL MODE (characters move from right to left on bottom line only, after line has been filled) 14h RESET (sets display to DEFAUI r configurations and clears User Defined Character locations) 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and lah) 16h + CURSOR HOME (returns cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (data enters from current cursor to upper left most LINE FEED (
<pre>line, when line is filled a vertical scroll occurs and the cursor is moved back to the left-most position on the bottom line) > + NORMAL DATA ENERY WITH AUTOMATIC CARRIAGE REJURN AND LINE FEED (data enters from current cursor position, when bottom line is filled a vertical scroll occurs and the cursor is re-positioned to the left-most position on the bottom line) > OVERWRITE OF RIGHT-MOST CHARACIER ON THE CURRENT LINE (automatic Carriage Return is set to OFF) > OVERWRITE OF RIGHT-MOST CHARACIER ON THE CURRENT LINE (automatic Carriage Return is set to OFF) > Giab + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and lah) </pre>			
cursor is moved back to the left-most position on the bottom ine) (11b) + NORMAL DATA ENERY WITH AUTOMATIC CARRIAGE RETURN AND LINE FEED (data enters from current cursor position, when bottom line is filled a vertical social cocurs and the cursor is re-positioned to the left-most position on the bottom line) iD-05 (h) EPSON SPECIFIC RESPONSE CODE (display sends 05 to host) (11b) + NORMAL DATA ENERY WITH AUTOMATIC CARRIAGE RETURN AND LINE FEED (data enters from current cursor position on the bottom line is filled a vertical social cocurs and the cursor is re-positioned to the left-most position on the bottom line on line only, after line has been filled) ID-05 (h) EPSON SPECIFIC RESPONSE CODE (display sends 05 to host) (11b)			
<pre>inne) (11he) (11he</pre>	cursor is moved back to the left-most position on the bottom	1D-05/b) EDGOV (
<pre>< NORMAL DATA ENERY WITH AUTOMATIC CARRIAGE RETURN AND ILNE FEED (data enters from current cursor position, when bottom line is filled a vertical scroll occurs and the cursor is re-positioned to the left-most position on the ottom line) </pre> <pre>// IP INITIALES FOLLOWING SEQUENCES: // IP-24-C-I. MOVE CURSOR TO C, Column 01-14(h) // L, Line 01,02(h) EXECUTE SEIF TEST (use 1B-40 to terminate self test) // IF-40 EXECUTE SEIF TEST (use 1B-40 to terminate self test) // IS APORTORY, AND ILNE (automatic Carriage Return is set to OFF)</pre> <pre>// ISA HORIZONTAL SCACLI MODE (characters move from right to left on bottom line only, after line has been filled) // An RESST (sets display to DEFAULT configurations and clears User Defined Character locations)</pre> <pre>// ISA + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and lah)</pre> <pre>// ISA + CURSOR HOME (returns cursor to upper left most</pre> <pre>// IP INITIALES FOLLOWING SEQUENCES: // IP-24-C-I. MOVE CURSOR TO C, Column 01-14(h) // IP-24-C-I. NORMAL/REVERSE CONCOLUMNCE // IP-24-C-I. MOVE CURSOR TO C, Column 01-14(h) // IP-24-C-I. NORMAL/REVERSE CONCOLUMNCE</pre>	line)		FACILLE MEDICADE CODE (Grapia) Sence of Co
FEED (data enters from current cursor position, when 1F-24-C-I. MOVE CURSOR TO C, Column 01-14(h) bottom line is filled a vartical scall occurs and the cursor is re-positioned to the left-most position on the bottom line) 1F-40 L, Line 01,02(h) Solution line) IF-40 EXECUTE SEIF TEST (use 1B-40 to terminate self test) Solution 100,02(h) Solution line on line on ly, after line has been filled) 1F-40 SEI AII DISPLAY BIINK FIELDS TO AN Solution line on ly, after line has been filled) INTERVAL= f X 50msec, range of T=00h(OFF)-3Fh, duty 14h RESET (sets display to DEFAUIT configurations and clears 1F-58-N SEI BRIGHTNESS IEVEL. N=% of max User Defined Character locations) DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and 1Ah) N=01(20%) N=01(20%) 16h + CURSOR FOME (returns cursor to upper left most IF-72-N SEIECI NORMAL/REVERSE DISPLAY MODE	<11h> + NORMAL DATA ENTRY WITH AUTOMATIC CARRIAGE REIURN AND LINE		WING CROUPNERS.
bottom line is filled a vertical scroll occurs and the cursor is re-positioned to the left-most position on the of the left-most position on the lottom line) <12h> User Defined Characters nove from right to left-most position on the self tests ((automatic Carriage Return is set to OFF) <13h> HORIZONNAI SCROLL MODE (characters move from right to left on bottom line only, after line has been filled) 14h RESET (sets display to DEFAUIT configurations and clears Display to DEFAUIT clear locations) 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and N=01 (20%) 16h + CURSOR HOME (returns cursor to upper left most 16h	FEED (data enters from current cursor position, when		
cursor is re-positioned to the left-most position on the 1F-40 EXECUTE SEIF TEST (use 1B-40 to terminate bottom line) cursor is re-positioned to the left-most position on the 1F-40 EXECUTE SEIF TEST (use 1B-40 to terminate bottom line) cursor is re-positioned to the left-most position on the 1F-40 EXECUTE SEIF TEST (use 1B-40 to terminate bottom line) cursor is re-positioned to the left-most position on bottom 1F-45-T SEI All DISPLAY BLINK FIELDS TO AN cursor left bottom 1ine only, after line has been filled) INTERVAL= I X 50msec, range of T=00h(0FF)-3Fh, duty 14h RESET (sets display to DEFAULT configurations and clears 1F-59-N SEI ENGRITIESS LEVEL, N=% of max 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and N=01(20%) N=01(20%) 16h + CURSOR HOME (returns cursor to upper left most 1F-72-N SEIECI NORMAL/REVERSE DISPLAY MODE	bottom line is filled a vertical scroll occurs and the	18-24-0-1	
bottom line) self test) <12h>OVERWRITE OF RIGHT-MOST CHARACIER ON THE CURRENT HINE (automatic Carriage Return is set to OFF) IF-45-T SEI ALI DISPLAY BINK FIELDS TO AN <13h>HORIZONTAL SCROIL MODE (characters move from right to left on bottom Ine only, after line has been filled) INTERVAL= I X 50msec, range of T=00h(OFF)-3Fh, duty 14h RESET (sets display to DEFAUIT configurations and clears IF-58-N SEI BRIGHTNESS IEVEL, N=% of max 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and IAh) N=01 (20%) 16h + CURSOR HOME (returns cursor to upper left most IF-72-N	cursor is re-positioned to the left-most position on the	171 40	
 OVERWRITE OF RIGHT-MOST CHARACIZER ON THE CURRENT LINE (automatic Carriage Return is set to OFF) IF-45-T IF-45-T SET AII DISPLAY BINK FIELDS TO AN (automatic Carriage Return is set to OFF) INTERVAL= IX 50msec, range of T=00h(OFF)-3Fh, duty (automatic Carriage Return is set to OFF) INTERVAL= IX 50msec, range of T=00h(OFF)-3Fh, duty (automatic Carriage Return is set to OFF) INTERVAL= IX 50msec, range of T=00h(OFF)-3Fh, duty 14h RESET (sets display to DEFAUIT configurations and clears) IF-50-N SEI BRIGHTNESS IEVEL, N=% of max 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and 1Ah) N=01(20%) + N=04(100%), N=03(60%), N=02(40%), N=01(Reverse) 16h + CURSOR HOME (returns cursor to upper left most IF-72-N SEICI NORMAL/REVERSE DISPLAY MODE	bottom line)		EXECUTE SELF TEST (USE IB-40 CO CERMINACE
(automatic Carriage Return is set to OFF) INTERVAL= (31b> HORIZONIAI SCROIL MODE (characters move from right to left on bottom line only, after line has been filled) INTERVAL= 14h RESST (sets display to DEFAULT configurations and clears User Defined Character locations) IF-58-N 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and 1Ah) DISPLAY CLEAR (moves cursor to upper left most 16h + CURSOR HOME (returns cursor to upper left most IF-72-N	<12h> OVERWRITE OF RIGHT-MOST CHARACTER ON THE CURRENI LINE	• • •	ALL NEL DEADENE DE LUE DE LES DA NU
HORIZONNAI SCROIL MODE (characters move from right to left on bottom Ine only, after line has been filled) IX 50msec, range of T=00h(OFF)-3Fh, duty (orgcle=50%) 14h RESET (sets display to DEFAUIT configurations and clears IF-58-N SEI BRIGHTNESS LEVEL, N=% of max 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and 1Ah) brightness: + 16h + CURSOR HOME (returns cursor to upper left most 1F-72-N SELECI NORMAL/REVERSE DISPLAY MODE + N=01 (Reverse)	(automatic Carriage Return is set to OFF)		SET ALL DISPLAT BEING FIELDS TO AN
on bottom line only, after line has been filled) If X Sommed, Fange br 1=000 (0FF)=350, duty 14h RESET (sets display to DEFAULT configurations and clears cycle=50% User Defined Character locations) 1F=58-N SEI ERIGHTNESS LEVEL, N=% of max 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and 1Ah) brightness: + N=04 (100%), N=03 (60%), N=02 (40%), N=01 (20%) 15h + CURSOR HOME (returns cursor to upper left most 1F-72-N SELECI NORMAL/REVERSE DISPLAY MODE	<13h> HORIZONIAI SCROIL MODE (characters move from right to left	INTERVAL=	
14h RESET (sets display to DEFAULT configurations and clears GYG14=50% User Defined Character locations) IF-58-N SEI BRIGHTNESS LEVEL, N=% of max 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and 1Ah) brightness: + + N=04 (100%), N=03 (60%), N=02 (40%), N=01 (20%) 16h + CURSOR HOME (returns cursor to upper left most 1F-72-N SELECI NORMAL/REVERSE DISPLAY MODE + N=00 (Normal), N=01 (Reverse)			T X 50msec, range of T=00h(OFF)-3Fh, duty
User Defined Character locations) 15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and 1Ah) 16h + CURSOR HOME (returns cursor to upper left most 1F-58-N SEI ERIGHTRESS 12VEI, N=% OF max brightness: + N=04(100%), N=03(60%), N=02(40%), N=01(20%) 1F-72-N SEIECI NORMAL/REVERSE DISPLAY MODE + N=00 (Normal), N=01 (Reverse)			
15h + DISPLAY CLEAR (moves cursor to left-most position on bottom line in Mode 10h. and HOME in Modes 11h, 12h, 13h and 1Ah) brightness: + + N=04(100%), N=03(60%). N=02(40%), N=01(20%) 15h + CURSOR HOME (returns cursor to upper left most 1F-72-N SELECI NORMAL/REVERSE DISPLAY MODE +			SET BRIGHTNESS LEVEL, N=% of max
on bottom line in Mode 10h, and HOME in Modes 11h, 12h, 13h and N=01(20%) 1Ah) 1F-72-N SEIECI NORMAL/REVERSE DISPLAY MODE 16h + CURSOR HOME (returns cursor to upper left most + N=00 (Normal), N=01 (Reverse)		brightness:	· · · · · · · · · · · · · · · · · · ·
AAh) N=01(20%) 1Ah) 1F-72-N 16h + 17-72-N SELECI NORMAL/REVERSE DISPLAY MODE 16h + 17-72-N SELECI NORMAL/REVERSE DISPLAY MODE 16h + 17-72-N SELECI NORMAL/REVERSE DISPLAY MODE			+ N=04(100%), N=03(60%), N=02(40%),
16h + CURSOR HOME (returns cursor to upper left most + N=00 (Normal), Reverse) + N=00 (Normal), Reverse)			
		1F-72-N	
	Dosition)		+ N=00 (Normal) N=01 (Reverse)

16h + Concerning position) 19h SET BIT SEVEN HIGH FOR NEXT BYIE ONLY <1Ab> WRAP AROUND DATA ENTRY (after the bottom right character is entered the cursor is moved to the HOME position)

Display automatically defaults to these conditions after
 Power-up or RESET.
 > These instructions are mutually exclusive.

User Defined Character Loading:

A maximum of eight characters may be created temporarily (until power-off or reset) by a userdefined downloaded character pattern. To do so, enter the following sequence of commands and data:

BYTE	DESCRIPTION			CHA	RACIER	DOT D	ATA					CHARA	CIER N	AIRIX	
1-3 4	Start load 18-26-01 (HEX) Location to begin download F8-FF	BYTE #	7	6	5	DATA 4	A BIT 3	2	1	D	1	2 7	3 8	4 9	5 10
(HEX) 5	Number of characters to download	6 7 8	29 31 33	20 22 24	11 13 15	2 4 6	28 30 32	19 21 23	10 12 14	1 3 5	11 16 21	12 17 22	13 18 23	14 19 24	15 20 25
(01-08) 6-10	*Character dot data	9 10	35 0	26 0	17 0	8	34 0	25 27	16 18	7 9	26 31	27 32	28 33	29 34	30 35

* Repeat bytes 6-10 for number of characters to be downloaded

Example: To download a Greek letter Psi into character location F8.

1Bh	BYIE 1,	start load	$\circ \bullet \bullet \bullet \circ$
26h	BYIE 2,	start load	00000
01h	BYTE 3,	start load	$\bullet \circ \bullet \circ \bullet$
F8h	BYIE 4	location to begin download	$\bullet \circ \bullet \circ \bullet$
01h	BYIE 5.	download 1 character	$\circ \bullet \bullet \bullet \circ$
78h	BYIE 6,	dots 20, 11, 2, 28 ON	00000
71h	BYIE 7,	dots 22, 13, 4, 3, ON	$\circ \bullet \bullet \bullet \circ$
Ech	BYTE 8,	dots 33 24, 15, 32, 23 ON	
1.Ah	BYIE 9,	dots 8, 34, 16 ON	
02h	BYIE 10.	dot 18 ON	

CHARACTER FONTS

The ASCII CHARACTER SET is located in standard ASCII locations from 20 (HEX) to 7F (HEX). The alternate character set is loaded into ASCII locations from 80 (HEX) to F7 (HEX). ASCII CHARACTER SET - always available from non-volatile memory. EUROPEAN CHARACTER SET (Default setting) - loaded into RAM* at Power-up or Reset, can be re-loaded with command sequence 1B-74-01 (HEX). KATAKANA CHARACTER SET - can be loaded into RAM* with command sequence 1B-74-02 (HEX) CYRILLIC CHARACTER SET - can be loaded into RAM* with command sequence 1B-74-03 (HEX) .. HEBREW CHARACTER SET - can be loaded into RAM* with command sequence 1B-74-04 (HEX). ISO 8859-1 CHARACTER SET - can be loaded into RAM* with command sequence 1B-74-05 (HEX) ISO 8859-2 CHARACTER SET - can be loaded into RAM* with command sequence 1B-74-06 (HEX) GREEK CHARACTER SET - can be loaded into RAM* with command sequence 1B-74-07 (HEX)

* Pre-designated alterable character set location.

N/A	N⁄A	N/A	N/A	N/A	N/A	N/B	N/A	n/A	N/A	N/A	N/A	N/A	N/#	- N/A	N/A			1997			388				T						
00	01	02	03	04	Q5	06	0'7	08	09	AO	OB	.0C	ΟÐ	OE	OF								87				8B	8C	80		AT.
N/A	N/A	N/A	H/A	N/A	N/A	N/A	h∕a	N∕⁄A	N/A	N/A	N/A	H/A	N/A	H/A	N/A				Ď												
10	11	12	13	14	15	16	17	18	19	1A	18	10	1D	12	17	:::: 90		92		94			97				GR		- 	97	9 7
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20	21	22	23	24	25	26	27	28	29	2A	29	2C	2D	22	2F	:::: AO	::: A1	:::: A2						A8	29		AB	11		AT.	207 - 2 - 1 - 1
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STANDARD ASCII CHARACTER SET

GENERAL EUROPEAN CHARACTER SET (Default Setting)

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80	15	82	83					· · •	- 1000 -	10111-00	0.0	· # · · ·	-96666				- 1316											:E::4	· Ense		
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KATAKANA CHARACTER SET

CYRILLIC CHARACTER SET

CHARACTER FONTS

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HEBREW CHARACTER SET	ISO 8859-1 CHARACTER SET
	# B I B I B I B I B I B I B I B I B I B I B I B I B I B I B I B B I B

ISO 8859-2 CHARACTER SET

GREEK CHARACTER SET

KIT NUMBERING SCHEME



NOTE: THE SUB-SET PDK -[0003] -X1X2X3 DEFINES THE DISPLAY ASSEMBLY IN THIS PDK KIT.