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# ZOID DC

## PLC Operator Interface




**Features:**

- Meets CE Mark requirements (DC powered units only)
- 2 x 20 character, VFD or backlit LCD display
- 24 VDC power (AC power optional)
- 12 Programmable function keys (24 with shift keys)
- 487 message capability
- Serial interface for programming setup and printout of messages
- Multiple embedded variables per screen
- Y2K Compliant Real time clock and calendar



**Description:**
KEP designed the ZOID DC to provide:
1. A convenient way for a machine operator to:
   a. View machine status and parameters.
   b. Change applicable parameters of operation of a machine.
   c. Maintain the running of a machine.
2. Enhanced capabilities to a machine through:
   a. Real Time Clock access.
   b. RS-232 ASCII output.
   c. Direct keypad interface
   d. Visually displayed prompts.

The ZOID DC is designed to provide these features in a cost effective unit. It interfaces to the machine through a single cable (typically to a PLC programming port).
The ZOID DC is a simple, easy-to-use interface that talks to your PLC directly through the programming port. Additional communications modules and cumbersome interface ladder logic are no longer necessary. Just plug in both ends of the cable and you are ready to go!

**Set up:** The ZOID DC is programmed using a Personal Computer. Our user friendly software is used to set up the parameters and download them to the ZOID DC.

**Function Keys:** 12 function keys can be programmed to call up 24 (12 non-shifted and 12 shifted) critical messages or prompts.

**Labels:** Labels are a way to tag specific registers or bits. The label, or "SYNONYM" can be up to 11 alphanumeric characters. For example, if register number R00020 represents the number of widgets made on Production Line 3, the user can view the number of widgets on that line by assigning a label "Prod Line 3" to register R00020. "Prod Line 3" and the value in R00020 are displayed along with the register number.

**Canned Messages:** The ZOID DC is more than just a register access device. Up to 487 messages can be loaded into the ZOID DC and then called up by the PLC. The PLC calls up a message by putting the message number into a register that is designated as the Message Triggering Register (MTR). Register values, time and date can be embedded into messages. Messages can flash, have fixed minimum time, scroll, be chained to another message or be downloaded to the serial port for print out. They can also be used to prompt an operator to enter values. This allows the ZOID DC to be used for interactive machine setups.

**Real Time Clock:** The ZOID DC can be configured to download the time and date into the PLC once per second. The time and date can also be embedded into messages which allows for time and date stamping of printouts.

**Math Functions:** Labeled registers can be scaled and/or offset before they are viewed. This allows the operator to view a value in "real" units. Data entered by the operator into math modified registers is "backed out" so that the PLC receives it as a value it can use. (Math operators are * , / , + and - )


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**4 Types of Lockout:** The ZOID DC can be programmed to restrict a user from viewing or changing critical registers. The user can also be locked out from changing register values while still being able to view these values. Along with this the user can also change, within defined limits, any labeled register value. Lastly, the user can lockout function keys. Locked keys can be accessed by function password only.

**Operating mode:**
Once the ZOID DC is programmed, it can be connected to the PLC programming port.

**Modes of control** - 3 types are available

* **Operator mode** - The ZOID DC operates as a *register access module* in this mode. This allows the operator to call up and change register data. Function Keys are active in this mode. Messages cannot be called by the PLC in this mode.
* **PLC mode** - The ZOID DC operates as a *message center* in this mode. The PLC prompts the operator with messages. The operator can only access the registers assigned to function keys or embedded in special messages.
* **Normal mode** - This mode *combines* the above two modes. The ZOID DC defaults to the PLC mode. When a key is pressed, the ZOID DC enters the Operator mode temporarily. After 10 seconds of no keypad activity the ZOID DC returns to the PLC mode.

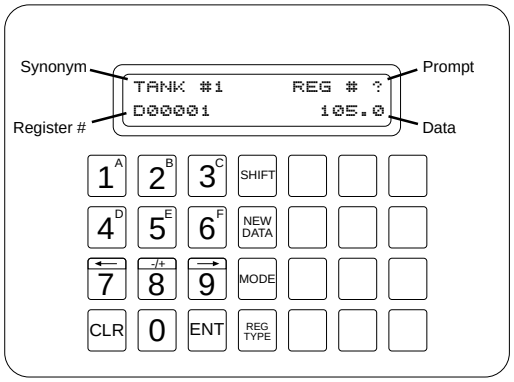
**Printer Interface** - Messages and Function key messages can be designated to be printed out. They will be printed with any variable register value or real time embedded in the message. One advantage of this feature is that an expensive ASCII PLC module for printout becomes unnecessary.

The ZOID DC makes communication to a PLC controlled machine easy and is great for troubleshooting.
Input, Output and Data registers can be easily viewed by maintenance personnel. Printed messages, with the time and date embedded, can be used to log downtime and alarms.

**Viewing Modes** (selectable from ZOID DC front panel)

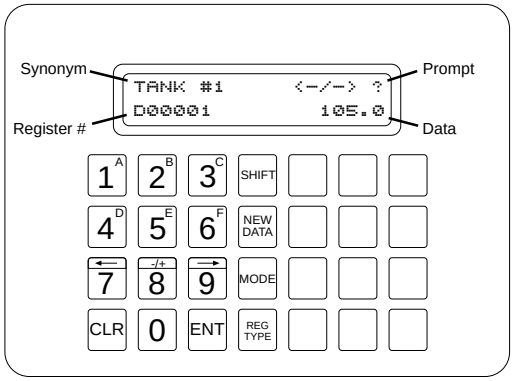
The ZOID DC allows 2 different ways to view register data. When the ZOID DC is operating in the Normal or Operator Mode, register data can be viewed in Number or Synonym formats.

**1) Number Mode:**
The Number Mode allows direct access to any register by entering the desired register number. The display shows the register number, the register data, the synonym assigned (if applicable) and a "REG# ?" prompt. Press the NEW DATA key to change the register data.




**Number Mode**

**2) Synonym Mode:**
The Synonym Mode allows access to any register that has been assigned a synonym. Pressing the arrow keys will advance (→ ) or backup (←) through the list. The display shows the register number, the register data, the synonym and a "<-/-> ?" prompt. Press the NEW DATA key to change the register data.




**Synonym Mode**

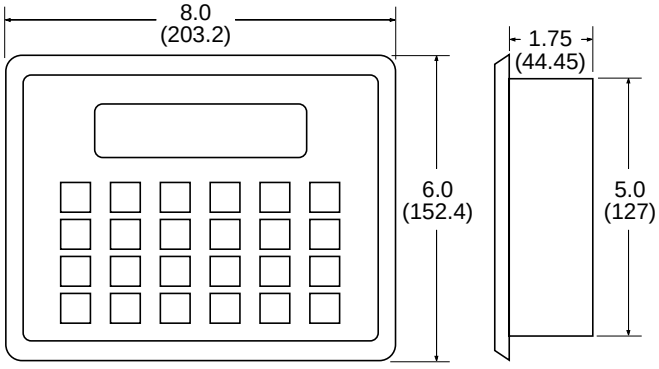



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**SPECIFICATIONS:**

**Temperature:**
VFD: 32-140°F (0-60°C)
LCD: 32-122°F (0-50°C)
**Power:** 12 to 24 VDC, 110 VAC or 220 VAC
**Battery Life:** (for real time clock & memory backup)
10 years calculated
**Display:**
VFD Vacuum Fluorescent Display; 2 lines; 20 characters per line; character height is 0.2"
LCD Backlit Liquid Crystal Display; 2 lines; 20 characters per line; character height is 0.2"
**Serial Communication:**
RS-232 8 bit, no parity, 1 start bit, 1 stop bit, no handshake, 300, 600, 1200, 2400, 4800 or 9600 baud
**Keypad:**
Membrane Keypad, dome, positive feedback 1 million keystrokes minimum
**Keypad Rating:**
NEMA 4X/IP65
**Approvals:** CE (ZOID DC only)
**Dimensions**:
H = 6", W = 8", D = 1.75"
Cutout H = 5.1, W = 7.1

**NOTE:** May require up to 4" below cutout for connections




PANEL CUTOUT: 7.1 (180.3) X 5.1 (129.5)

All Dimensions in inches (mm)

**Accessories:**
**ZA9M9F** - Five feet of cable with DB9 male connector and DB9 female connector.
(PC end, normally used for "AT" COM1)

**ZA9M25F** - Five feet of cable with DB9 male connector and DB25 female connector.
(PC end, normally used for "XT" or "AT" COM2)

**How To Order:**

**EXAMPLE: ZOID D C GE-90 L**

**Series**

**Power**
**A** = 110 VAC
**B** = 220 VAC
**C** = 12 to 24 VDC (standard)

**PLC Type**

| | |
|---|---|
| AB500 | AB SLC500 types with DH485 port |
| ABDF1 | AB SLC500 5/03, 5/04 with DF1 port, AB MicroLogix |
| GE90 | All GE 90 Series SNP Port |
| IDECM3 | Idec Micro3 Series |
| K205 | Koyo DL230, DL240 |
| K305 | Siemens Simatic 335, Koyo 340 |
| K405 | Siemens Simatic 425, 435, Koyo 440 |
| KEY | Keyence KV 10,16,24,40 & 80 —KV300 |
| MOD | Modicon Micro 84; 884; 984; Micro 984 |
| MITFX | Mitsubishi FX Series |
| OMC | Omron C Series, (Host link modules), CH, CQM1 Series |
| SIS5 | Siemens S5 Series, 95, 100, 102, 103, 115 |
| SI135 | Siemens S5 Series, 135 only |
| SIS7 | Siemens S7-200 Series |
| TSBEX | Toshiba EX & M Series Program Port & RS-422 Link Port |
| TSBT2 | Toshiba T1, T2 and T3 |
| TSX07 | Telemecanique TSX 07 & TSX 37 |
| TSX | Telemecanique TSX 17, TSX 47-40, TSX 47-20 |

**Display Type**
L = Backlit LCD display
V = Vacuum fluorescent display (VFD)

Use Smart cable part number as indicated below. Also refer to SMIC Cables in the Accessories Section of this catalog.

**EXAMPLE: SMIC- GE90- 05**

**Series**

**PLC Type**

| | |
|---|---|
| AB500 | AB SLC500 types with DH485 port |
| ABDF1 | AB SLC500 5/03, 5/04 with DF1 port |
| ABMICRO | AB MicroLogix only |
| ARO | All Aromat FP1 Series |
| FUJI | Fuji Flex Series NB, NJ and NS |
| GE90 | All GE 90 Series SNP Port |
| IDECM1 | Idec M1 and FA2J |
| IDECM3 | Idec Micro3 Series |
| K205 | Koyo DL230, DL240 |
| K305 | Siemens Simatic 335, Koyo 340 |
| K405 | Siemens Simatic 425, 435, Koyo 440 |
| KEY | Keyence KV 10,16,24,40 & 80, KV300 |
| MOD | Modicon Micro 84; 884; 984; Open Modbus and J-Bus |
| MODMICRO | Modicon Micro 984 |
| MITFX | Mitsubishi FX Series |
| MITFXO | Mitsubishi FXo only |
| OMCK25 | Omron C Series, (Host link modules) |
| OMCH9 | Omron CH Series |
| OMCQM | Omron CQM1 Series |
| SIS5 | Siemens S5 Series, 95, 100, 102, 103, 115 |
| SIS7 | Siemens S7-200 Series |
| TSBEX | Toshiba EX Series & M Series Program Port |
| TSB485 | Toshiba EX & M Series RS-422 Link Port |
| TSBT1 | Toshiba T1 only |
| TSBT2 | Toshiba T2 and T3 |
| TSX07 | Telemecanique TSX 07 (nano), TSX 37 |
| TSX17 | Telemecanique TSX 17 |
| TSX47 | Telemecanique TSX 47-40, TSX 47-20 |

**Cable Length**
05 = 5 feet


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