

**PANEL-TEC  
MICROGATE**

**P1 TO  
ALTIVAR 58/61 DRIVES**

**INSTALLATION  
AND  
OPERATION**

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## INTRODUCTION

The P1 to Altivar 58 version of the MicroGate connects one Altivar 58 drive or Altivar 61 drive operating in “58 Mode” to a P1 Network. A pre-defined set of P1 points are provided that allow access to the most common drive parameters, monitor values, setpoint values, and control points for the Altivar 58 drive.

## Part Numbers

The MicroGate product is sold with several different applications. To ensure that the correct version of the MicroGate is procured, please include the correct part number when ordering. Part numbers for the MicroGate, power supply and cables for the P1 to Altivar 58/61 application are as follows:

**Table 1 - Part Numbers for ATV58 Connection**

<b>Part Number</b>	<b>Description</b>
1200-UGW-S6R03-S4C13	MicroGate P1-ATV58 (cables included)
4000-0204	MicroGate Power Supply
6000-0001	MicroGate P1 Network Cable (replacement)
6000-0002	MicroGate ATV58 Drive Cable (replacement)

**Table 2 - Part Numbers for ATV61 Connection**

<b>Part Number</b>	<b>Description</b>
1200-UGW-S6C13-S4G03	MicroGate P1-ATV61 (cables included)
4000-0204	MicroGate Power Supply
6000-0001	MicroGate P1 Network Cable (replacement)
6000-0005	MicroGate ATV61 Drive Cable (replacement)

## MICROGATE CONFIGURATION

A configuration utility is built into the MicroGate. It allows the P1 address, P1 Watchdog Time, and P1 Watchdog Timeout Action to be configured using any ANSI terminal or emulation program on a PC (HyperTerminal, etc.)

## Power Connection

The MicroGate requires a regulated 5VDC power supply with a 2.5mm audio plug that plugs into the side of the unit. A wall mount power supply (120 VAC Input, part number 4000-0204) is available from ICP Panel-Tec, Inc.

## Connection to PC

A straight-through off-the-shelf DB9-Female to DB9-Male cable is used to connect to the MicoGate to a PC for configuration.

## Entering Configuration Mode

The terminal or emulation program must be configured with the parameters shown in the following table:

**Table 3 – Communication Parameters for Configuration Mode**

Parameter	Value
Emulation	ANSI
Echo	OFF
Baud Rate	9600
Parity	None
Stop Bits	1
Flow Control	None

To place the MicroGate into configuration mode, make sure that the MicroGate is powered off. Connect a straight-through DB9 cable from the female connector on the MicroGate to the serial port on a PC or ANSI terminal. Power up the terminal or start up the terminal emulation software and configure its communications parameters with the values in the above table. After powering up the MicroGate, press the “Enter” key on the terminal or software within 5 seconds. The middle LED on the MicroGate will be solid green while it is looking for the Enter key to place it into configuration mode. Once “Enter” has been pressed, a menu will be displayed on the terminal showing all operating parameters of the MicroGate. Use the up and down arrows to navigate to the parameter you would like to change. The navigation process will skip over any parameters that are fixed values that cannot be changed. When you have navigated to the parameter you would like to change and it has become highlighted, use the left and right arrows to change the value of the parameter. When all parameters are set to their desired values, use the down arrow to navigate to the “Save Configuration” text. Press Enter with “Save Configuration” highlighted to save the new configuration. The message “Saving Configuration ...” will appear on the bottom line of the screen for a few seconds. When this message is cleared from the screen, the configuration process is complete and the MicroGate can be powered off.

## Configuring the P1 Network Address

The P1 Network Address must be set to a value of 1 to 99. When set to 99, the MicroGate will respond to any P1 address and must therefore be the only slave device on the P1 network. If the P1 Network Address is changed by the P1 Host, the new address will be saved in the MicroGate and will be displayed the next time configuration mode is entered.

## Configuring the P1 Watchdog Timer

When enabled, the P1 Watchdog Timer allows the ATV drive to be stopped or an External Fault to be generated on the drive if communications has been established with the P1 Host then lost. The P1 Watchdog Timer Value can be set to Disabled or any one of several pre-defined values. When changed, the new setting will remain in effect until the configuration utility is run again.

## ALTIVAR DRIVE CONFIGURATION

### Communications Parameter Settings (Altivar 58 and 61)

The Altivar Drive must be properly configured before the MicroGate will communicate with it. The necessary communications parameters to configure are shown in the following table.

**Table 4 – Communication Parameters for Altivar Drive**

Parameter	Value
Protocol	Modbus RTU
Modbus Address	1
Baud Rate	19200
Parity	None
Stop Bits	1
Flow Control	None

### Altivar 58 Parameter Settings

It is recommended that LI4 be set to FLO (forced local mode) for safety.

### Altivar 61 Parameter Settings

The Altivar 61 must be configured to run in Altivar 58 mode when it is used with the MicroGate. To place the Altivar 61 into “58 Mode”, navigate to the “1.6 COMMAND” menu and set the “Profile” parameter to “8 series”. This must be done before the “MODBUS NETWORK” communications parameters are configured on the “1.9 COMMUNICATIONS” menu.

## HARDWARE INSTALLATION

### Power Connection

The MicroGate requires a regulated 5VDC power supply with a 2.5mm audio plug that plugs into the side of the unit. A wall mount power supply (120 VAC Input, part number 4000-0204) is available from ICP Panel-Tec, Inc.

### Altivar 61 Connection

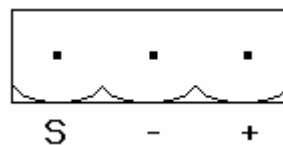
A cable assembly is provided to connect the MicroGate’s Local Port (DB9 female connector) to the ATV61’s Modbus port (RJ45 receptacle). This assembly consists of a DB9 to RJ45 adapter and a flat phone cable with an RJ45 plug for direct connection between the MicroGate and the ATV61.

### Altivar 58 Connection

A cable is provided to connect the MicroGate’s Local Port (DB9 female connector) to the Modbus port on the ATV58’s Modbus Option Card. This is a special wired cable with a DB9 male connector on each end. Each DB9 connector is labeled so that the cable is installed correctly.

### P1 Network Connection

A cable is provided for connection to the P1 network. It consists of a 3-pin pluggable terminal block containing the standard P1 pin connections shown in the following diagram.



## MICROGATE LED INDICATORS

There are a total of 3 Bi-color LED indicators on the MicroGate. One LED (Status) is the Module Status LED that displays the operational status of the MicroGate. Another LED (P1) is the Network Status LED that displays the P1 communication status. The third LED (Modbus) reflects the serial (Modbus) communication status with the drive.

**Table 5 - Module Status LED**

<b>For this state:</b>	<b>LED is:</b>	<b>To indicate:</b>
No Power	Off	There is no power applied to the device.
Initialization and Determination of Operating Mode	Solid Green	The device is initializing and determining the operating mode (Configuration or Normal Operation). If an Enter key is received from an external terminal connected to the Modbus (drive) port, the device will enter Configuration mode. Otherwise, the device will enter its Normal Operation mode.
Communications Not Active	Solid Red	The device is in Normal Operation mode but is either unable to communicate with the drive on the Modbus port or is not being polled by the P1 host on the P1 port.
Device Operational	Flashing Green	The device is fully operational and has active communications with both the drive and the P1 host.

**Table 6 – P1 Network Status LED**

<b>For this state:</b>	<b>LED is:</b>	<b>To indicate:</b>
Receive Data	Red	The MicroGate is receiving data from the P1 Network.
Transmit Data	Green	The MicroGate is transmitting data to the P1 Network.

**Table 7 – Drive Communications Status LED**

<b>For this state:</b>	<b>LED is:</b>	<b>To indicate:</b>
Receive Data	Red	The MicroGate is receiving data from the Altivar 58/61 drive.
Transmit Data	Green	The MicroGate is transmitting data to the Altivar 58/61 drive.

## MICROGATE P1 POINT TABLE

Table 6 contains the list of P1 points for the Altivar 58 that are available on the MicroGate. Any drive parameters, monitor values, setpoints or control values not listed in this table are not supported. For all points in the table, the units, slope and intercept are the same for ENG and SI.

**Table 8 - Point Database Table for Application 2715**

Point Number	Descriptor	Default	Units	Slope	Intercept	On Text	Off Text	Point Type
						Or Range		
1	CTLR ADDRESS	99	--	1	0	0-255		Pre-Def'd
2	APPLICATION	2715	--	1	0	-		Pre-Def'd
3	FREQ OUTPUT		HZ	0.1	0	0-5000		LAI 1
4	CMD SPD REF	0	HZ	0.1	0	0-HSP		LAO 1
5	MTR SPEED		RPM	1	0	1-32767		LAI 1
6	MTR CURRENT		A	0.1	0	0-9999		LAI 1
7	MTR TORQUE		PCT	1	0	0-200		LAI 1
8	POWER		PCT	1	0	0-200		LAI 1
9	DRIVE TEMP		PCT	1	0	0-200		LAI 1
10	kWH		kWH	1	0	0-32767		LAI 1
12	RUN TIME		HRS	1	0	0-32767		LAI 1
20	OVRD TIME		HRS	1	0	0-255		Pre-Def'd
21	FWD REV				0	REV	FWD	LDI 1
22	CMD FWD REV	FWD			0	REV	FWD	LDO 1
23	STOP RUN				0	RUNNING	STOPPED	LDI 1
24	CMD STP STRT	STOP			0	START	STOP	LDO 1
25	CMD SER CTRL	KEY/IO			0	SERIAL	KEY/IO	LDO 1
27	CMD LCTN				0	SERIAL	KEY/IO	LDI 1
29	DAY.NIGHT	DAY			0	NIGHT	DAY	Pre-Def'd
30	CURRENT LIM	1.36 x I nominal	A	0.1	0	0.1-1.36		LAI 2
31	ACCEL TIME 1	3.5	SEC	0.1	0	0-9999		LAO 2
32	DECEL TIME 1	3.5	SEC	0.1	0	0-9999		LAO 2
40	RELAY OUT 1	OFF			0	ON	OFF	LDI 1
41	RELAY OUT 2	OFF			0	ON	OFF	LDI 1
42	LOW SPD SET	0	Hz	0.1	0	0-HSP		LAO 2

**Table 8 - Point Database Table for Application 2715**

Point Number	Descriptor	Default	Units	Slope	Intercept	On Text	Off Text	Point Type
						Or Range		
43	HI SPD SET	60.0	Hz	0.1	0	LSP-TFR		LAO 2
44	PRESET 2	10.0	Hz	0.1	0	LSP-HSP		LAO 2
45	PRESET 3	15.0	Hz	0.1	0	LSP-HSP		LAO 2
53	ANALOG IN 1		V	0.001	0	0-100.00		LAI 1
54	ANALOG IN 2		mA	0.002	0	0-100.00		LAI 1
56	LOGIC IN 1				0	ON	OFF	LDI 1
57	LOGIC IN 2				0	ON	OFF	LDI 1
58	LOGIC IN 3				0	ON	OFF	LDI 1
59	LOGIC IN 4				0	ON	OFF	LDI 1
60	PI FEEDBACK		V	0.001	0	0-10.000		LAI 1
61	PI PRO GAIN	1.00		.001	0.01	0.01-100		LAO 2
62	PI INTGRL TIME	1.00		0.01	0.01	0.01-100		LAO 2
63	CMD PI STPNT	0		0.001	0	0-10000		LAO 1
78	READY				0	READY	NOT RDY	LDI 1
79	FAULT				0	FAULT	OK	LDI 1
80	RESET				0	AUTH	NO AUTH	LDI 1
81	FAULT RESET	0			0	FLT RST	NO	LDO 1
87	THRML OVRLD				0	ALARM	NO	LDI 1
88	CURRENT LIM				0	LIMIT	NO	LDI 1
91	LAST FAULT				0	List		LAI 1
99	ERROR STATUS	0			0	FAULT	OK	Pre-Def'd