

Technical Note

Custom Vertex Profibus Data Mapping

MVIP3504-T/N Rev 1 11/06

Introduction

The Vertex toxic gas monitor can communicate via relays as well as a variety of fieldbuses. These fieldbuses include LonWorks, DF1, Profibus, Modbus Plus, DeviceNet, ControlNet, Modbus/TCP, and Ethernet/CIP. With most fieldbus options, the Vertex provides 244 bytes of data. These 244 bytes contains information regarding alarms, faults, concentrations and a heartbeat.

Scanning this large volume of data is difficult for some fieldbus master scanners that have limited capacity. Therefore, more compact fieldbus data maps are sometimes needed.

A previous (special) version of the Vertex PLC program has been created to satisfy this need. MVIP-3448 excludes alarm information and reduces the total data size to 154 bytes. Limitations were that the PLC is restricted to only 1 backplane and 16 count relay modules.

This software, MVIP-3504, is very similar to MVIP-3448. It has the same 154-byte data map. However, it has restriction of 2 backplanes and 8 count relay modules. MVIP-3504 is distributed as the file *ZaV_MVIP_3504_22.RSS*. MVIP-3448 is distributed as *ZaV_MVIP_3448_22.RSS*.

Data Map

The Data Map is as listed in Table 1. This supersedes table F-5 in the Vertex Technical Handbook. Table 2 and Table 3 are provided for reference and are identical to the associated tables in the Vertex Technical Handbook.

Technical Note

Vertex Profibus Data Map

I/O	Offset	Size (Bytes)	Analyzer	Point	Type
Output	0	1	1-1		Fault
Output	1	1	1-2		Fault
Output	2	1	1-3		Fault
Output	3	1	2-1		Fault
Output	4	1	2-2		Fault
Output	5	1	2-3		Fault
Output	6	1	3-1		Fault
Output	7	1	3-2		Fault
Output	8	1	3-3		Fault
Output	9	1	HeartBeat		HeartBeat
Output	10	2	1-1	1	Conc/4-20
Output	12	2	1-1	2	Conc/4-20
Output	14	2	1-1	3	Conc/4-20
Output	16	2	1-1	4	Conc/4-20
Output	18	2	1-1	5	Conc/4-20
Output	20	2	1-1	6	Conc/4-20
Output	22	2	1-1	7	Conc/4-20
Output	24	2	1-1	8	Conc/4-20
Output	26	2	1-2	1	Conc/4-20
Output	28	2	1-2	2	Conc/4-20
Output	30	2	1-2	3	Conc/4-20
Output	32	2	1-2	4	Conc/4-20
Output	34	2	1-2	5	Conc/4-20
Output	36	2	1-2	6	Conc/4-20
Output	38	2	1-2	7	Conc/4-20
Output	40	2	1-2	8	Conc/4-20
Output	42	2	1-3	1	Conc/4-20
Output	44	2	1-3	2	Conc/4-20
Output	46	2	1-3	3	Conc/4-20
Output	48	2	1-3	4	Conc/4-20
Output	50	2	1-3	5	Conc/4-20
Output	52	2	1-3	6	Conc/4-20
Output	54	2	1-3	7	Conc/4-20
Output	56	2	1-3	8	Conc/4-20
Output	58	2	2-1	1	Conc/4-20
Output	60	2	2-1	2	Conc/4-20
Output	62	2	2-1	3	Conc/4-20
Output	64	2	2-1	4	Conc/4-20
Output	66	2	2-1	5	Conc/4-20
Output	68	2	2-1	6	Conc/4-20
Output	70	2	2-1	7	Conc/4-20
Output	72	2	2-1	8	Conc/4-20
Output	74	2	2-2	1	Conc/4-20
Output	76	2	2-2	2	Conc/4-20
Output	78	2	2-2	3	Conc/4-20
Output	80	2	2-2	4	Conc/4-20
Output	82	2	2-2	5	Conc/4-20
Output	84	2	2-2	6	Conc/4-20
Output	86	2	2-2	7	Conc/4-20
Output	88	2	2-2	8	Conc/4-20
Output	90	2	2-3	1	Conc/4-20
Output	92	2	2-3	2	Conc/4-20
Output	94	2	2-3	3	Conc/4-20
Output	96	2	2-3	4	Conc/4-20
Output	98	2	2-3	5	Conc/4-20
Output	100	2	2-3	6	Conc/4-20
Output	102	2	2-3	7	Conc/4-20
Output	104	2	2-3	8	Conc/4-20
Output	106	2	3-1	1	Conc/4-20
Output	108	2	3-1	2	Conc/4-20
Output	110	2	3-1	3	Conc/4-20
Output	112	2	3-1	4	Conc/4-20
Output	114	2	3-1	5	Conc/4-20
Output	116	2	3-1	6	Conc/4-20
Output	118	2	3-1	7	Conc/4-20
Output	120	2	3-1	8	Conc/4-20
Output	122	2	3-2	1	Conc/4-20
Output	124	2	3-2	2	Conc/4-20
Output	126	2	3-2	3	Conc/4-20
Output	128	2	3-2	4	Conc/4-20
Output	130	2	3-2	5	Conc/4-20
Output	132	2	3-2	6	Conc/4-20
Output	134	2	3-2	7	Conc/4-20
Output	136	2	3-2	8	Conc/4-20
Output	138	2	3-3	1	Conc/4-20
Output	140	2	3-3	2	Conc/4-20
Output	142	2	3-3	3	Conc/4-20
Output	144	2	3-3	4	Conc/4-20
Output	146	2	3-3	5	Conc/4-20
Output	148	2	3-3	6	Conc/4-20
Output	150	2	3-3	7	Conc/4-20
Output	152	2	3-3	8	Conc/4-20

Table 1 -- Data Map for MVIP-3448 and MVIP-3504

Faults	
Value	Description
0	No Fault
1	Maintenance Fault Present
2	Instrument Fault Present
3	Both Instr and Maint Fault Present

Table 2 -- Fault Byte Interpretation

Concentration/4-20	
Value	Description
0	Analyzer not present
3120	Fault exists (2 mA fault indication)
6241 to 31206	Normalized concentration from zero to the 20 mA full scale value as set in the point configuration.

Table 3 -- Concentration Word Interpretation

Technical Note

Installation Procedure

1. Copy the file *ZaV_MVIP_3504_22.RSS* from the distribution medium to "C:\hmi\PLC"
2. Copy the file *Vertex_3448.GSE* file to "C:\hmi\FieldbusFiles\Profibus"
3. De-energize the PLC. Physically install the SST-PFB-SLC module. Re-energize the PLC (new card installation only).
4. Set the Profibus memory size to 77 words by running the Profibus Module Configuration procedure listed in section F.5.2 of the Vertex Technical Handbook Revision 5.0. For step F.1.10 type:
slvtxlen 0 0 77
5. In RSView, touch <Project> then <Program Update>. A program update screen similar to Figure 1 should appear.
6. Touch <Select PLC File> and select "ZaV_MVIP_3504_22.RSS".
7. Touch <Download PLC Program>

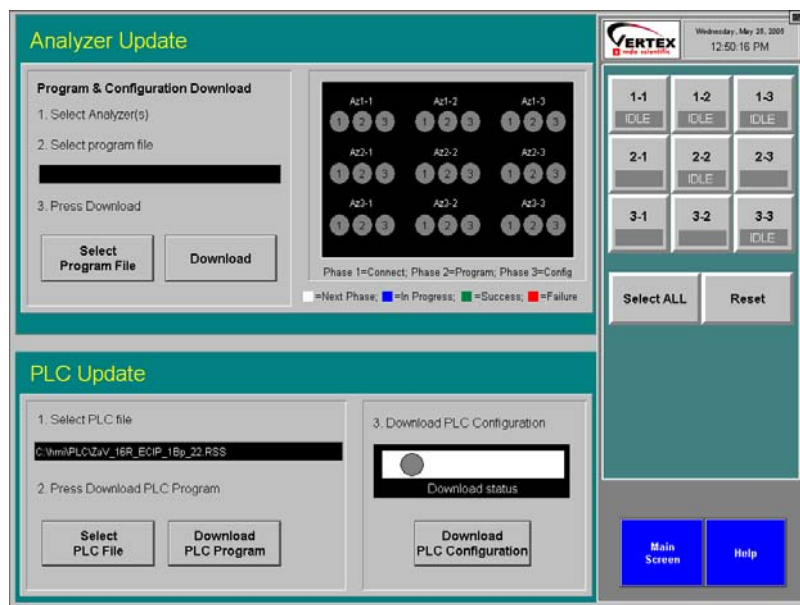


Figure 1 -- Program Update Screen

Technical Note

- When the dialog box in Figure 2 appears, touch “No”. If this question is answered incorrectly, recovery requires shutting down and restarting the DAqPC.

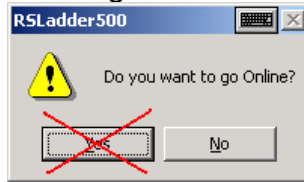


Figure 2 -- Online Dialog Rev 5.0

- Touch the button “Install Current Profile” as shown on Page 3-13 of the Vertex Technical Handbook – revision 5.0.
- Confirm that the “RUN” light on the PLC CPU is steady green.
- Confirm that the “FLT” light on the PLC CPU is off.
- Clear all faults
- Confirm that no faults are generated for 1 minute.

Notes

- The SST-PFB-SLC is configured as a slave.
- Modules can be 2, 4, 8, 16 or 32 bytes.
- All data is stored in the MØ file in the SST-PFB-SLC.

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