

DeviceNet[®] Interface for SVS 2000[™]

CAUTION

It is essential that all instructions
in this manual be followed precisely
to ensure proper operation of
the equipment.

NOTICE

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Chapter 1. Introduction

Introduction

This manual covers the setup and program commands for interfacing the SVS 2000™ signal processor with a DeviceNet® PLC network.

The SVS 2000 is a single-channel signal processing and display system. The SVS 2000 can monitor one vessel instrumented with:

- Half-bridge sensors, such as KM's L-Cells®, Microcells®, Load Stand IIs®, or Load Disc IIs® or
- Full bridge, foil gage sensors, such as KM's Load Link III®, LD3xi, LD3xiC or products from other manufacturers

The SVS 2000 is available with an optional DeviceNet PCB Module. This provides an interface between the signal processor and a DeviceNet network. Once interfaced in the network, a programmer can use a DeviceNet PLC and ladder logic programming language to read and write data to and from the SVS 2000.

Chapter 2 covers the SVS 2000's setup for interfacing with the DeviceNet PLC. Chapter 3 covers the PLC programming instructions.

This manual and the .eds file are located on the floppy disk included in the shipping order. They are also located on the KM website (www.kistlermorse.com).

Manual Conventions

Three kinds of special explanations appear throughout the manual — **WARNING**, **CAUTION**, and *Note*. The format and significance of each is defined below:

WARNING

**Possible danger to people.
Injury may result if this information is ignored.**

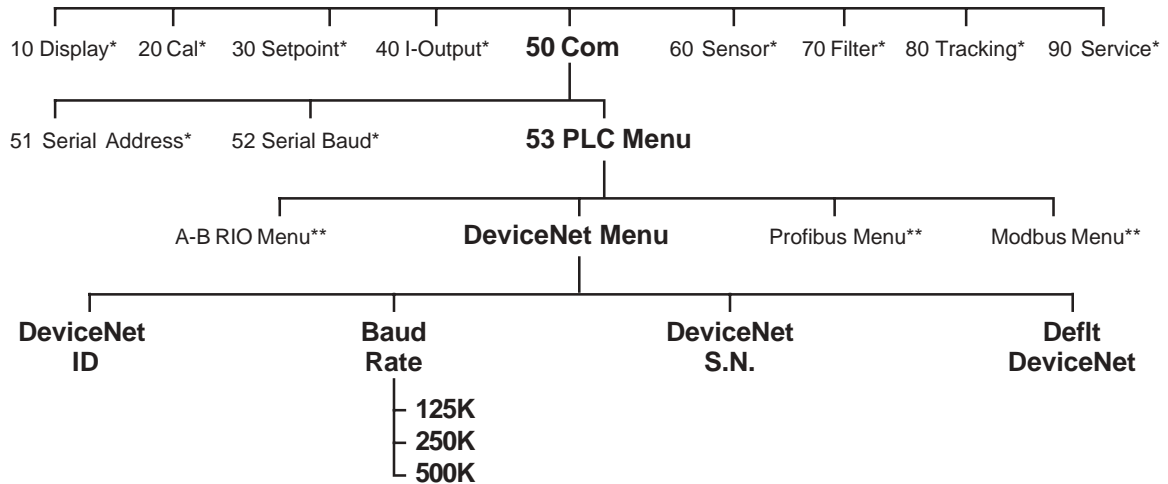
CAUTION

Possible risk to the product. The signal processor or other equipment may be damaged if this information is ignored.

Note

Contains additional information about a step or feature critical to the installation or operation of the signal processor.

Chapter 2. Setting Up the Interface for SVS 2000



*See the *SVS 2000 Installation and Operation Manual* for detailed menus for these items.

**See the applicable K-M PLC manuals for detailed menus for these items.

DeviceNet ID: Set the address of the SVS 2000 for communication with the PLC.

Baud Rate: Select the baud rate for communication with the PLC.

DeviceNet S.N.: Read the serial number of the SVS 2000 for communication with the PLC.

Deflt DeviceNet: Reset all DeviceNet parameters to factory-set default values.

Figure 2-1. SVS 2000 PLC Menu Tree

Introduction

The DeviceNet PCB Module for SVS 2000 provides a connection between the SVS 2000 and the DeviceNet network. Once interfaced in the DeviceNet network, a programmer can use a DeviceNet PLC and ladder logic programming language to read and write data to and from the SVS 2000.

The SVS 2000's menu tree is used to perform setup and calibration of the SVS 2000. This chapter covers only the menus and submenus needed to set up the DeviceNet Interface. Figure 2-1 is the SVS 2000's menu tree, with only those menu items applicable to DeviceNet detailed. For a complete description of all SVS 2000 menu functions, refer to the *SVS 2000 Installation and Operation Manual*.

Notes

1. Turn off power to the SVS 2000 before adding the DeviceNet PCB to the SVS 2000 (if not pre-installed). Refer to the *SVS 2000 Installation and Operation Manual* for details on PCB installation.
2. Complete installation and setup of the SVS 2000 and sensors before setting up the DeviceNet PCB to interface with the PLC. Refer to TI-SVS.DNET-01 in Appendix B and to the *SVS 2000 Installation and Operation Manual*.

Setting Up DeviceNet PCB

This section describes the setup of the DeviceNet PCB. Table 2-1 shows the setup **default** parameters. Change the baud rate and SVS 2000's address (ID) *before* connecting the DeviceNet cable.

Parameter	Default Value
<i>DeviceNet ID</i>	63
<i>Baud Rate</i>	125K

Table 2-1. Setup Default Parameters

Follow this procedure to set up the DeviceNet PCB. Refer to Figure 2-1 to help navigate through the *PLC* Menu.

- In Run Mode, press the '5' Key, '3' Key, and Enter Key to access the menu tree. The display shows:

```
53 PLC MENU
```

- Press the Enter Key to access the *PLC* Menu. The display shows:

```
A-B RIO MENU
```

- Press the Up Arrow Key to proceed to the next option. The display shows:

```
DeviceNet MENU
```

- Press the Enter Key to access this menu. The display shows:

```
DEVICENET ID
```

- Press the Enter Key to access this menu. The display looks like this:

```
> 63 ID
```

- Use the Numeric or Arrow Keys to input the SVS 2000's decimal address (it can range from 0 to 63). Press the Enter Key. The display acknowledges the entry and returns to:

```
DEVICENET ID
```

- Press the Up Arrow Key to proceed to the next menu. The display shows:

```
BAUD RATE
```

- Press the Enter Key to access the *Baud Rate* Menu. The display looks like this:

```
BAUD RATE: *125K
```

(Asterisk indicates the current selection.)

If the displayed menu does not have the desired baud rate, press the Up Arrow Key to display the next page of the menu. Continue to press an Arrow Key until you see the desired baud rate (there are three pages to the *Baud Rate* Menu).

- When the display shows the desired baud rate, press the Enter Key. The display acknowledges the selection and returns to:

```
BAUD RATE
```

- Press the Gross or Net Key to return to Run Mode.

Note

When setup of the DeviceNet PCB is complete, reconfigure the PLC to match the selections.

- Complete PCB Setup by turning system power OFF and then back on again.

Resetting DeviceNet PCB to Defaults

The *Deflt DeviceNet* function resets the DeviceNet parameters to the default values shown in Table 2-1.

Follow this procedure to reset to default parameters. Refer to Figure 2-1 to help navigate through the menu tree.

- In Run Mode, press the '5' Key, '3' Key, and Enter Key to access the menu tree. The display shows:

```
53 PLC MENU
```

- Press the Enter Key to access the *PLC* Menu. The display shows:

```
A-B RIO MENU
```

- Press the Up Arrow Key to proceed to the next menu. The display shows:

```
DeviceNet MENU
```

- Press the Enter Key to access the *DeviceNet* Menu. The display shows:

```
DEVICENET ID
```

- Press the Down Arrow Key. The display shows:

```
DEFLT DEVICENET
```

6. Press the Enter Key to access the *Deflt DeviceNet* Menu. The display shows:


```

      _____
      DEFLT DEVICENET?
      _____
      
```
 7. Respond to the verification request:
 - To abort the default, press the Gross or Net Key to exit this function and return to Run Mode.
 - To continue with the default, press the Enter Key and proceed to Step 8.
 8. The SVS 2000 resets all DeviceNet parameters to default values. The display acknowledges the entry and returns to:


```

      _____
      DEFLT DEVICENET
      _____
      
```
 9. Press an Arrow Key to scroll to another menu or press the Gross or Net Key to return to Run Mode.
5. Press the Up Arrow Key twice. The display shows:


```

      _____
      DEVICENET S.N.
      _____
      
```
 6. Press the Enter Key to access this menu. An example display looks like this (serial numbers are unique to system):


```

      _____
      > 012345 S.N.
      _____
      
```
 7. Press the Enter Key to return to:


```

      _____
      DEVICENET S.N.
      _____
      
```
 8. Press an Arrow Key to scroll to another menu or press the Gross or Net Key to return to Run Mode.

Note

When default and setup of the DeviceNet PCB is complete, reconfigure the PLC to match the selections.

10. Complete PCB reset by turning system power OFF and then back on again.

Reading Serial Number

Each SVS 2000 DeviceNet PCB Module is factory-assigned a unique serial number. Follow this procedure to read the serial number. Refer to Figure 2-1 to help navigate through the *PLC* Menu.

1. In Run Mode, press the '5' Key, '3' Key, and Enter Key to access the menu tree. The display shows:


```

      _____
      53 PLC MENU
      _____
      
```
2. Press the Enter Key to access the *PLC* Menu. The display shows:


```

      _____
      A-B RIO MENU
      _____
      
```
3. Press the Up Arrow Key to proceed to the next menu. The display shows:


```

      _____
      DeviceNet MENU
      _____
      
```
4. Press the Enter Key to access this menu. The display shows:


```

      _____
      DEVICENET ID
      _____
      
```


Chapter 3. PLC Programming for SVS 2000

Introduction

The information contained in this chapter documents KM's program commands for interfacing with DeviceNet's PLC network. This material is written for users who have experience with DeviceNet PLC programming and have DeviceNet PLC programming documentation available for reference.

Note

For installation and setup of the SVS 2000, refer to the *SVS 2000 Installation and Operation Manual*.

The KM DeviceNet PCB provides an interface for SVS 2000 systems into the DeviceNet network. The Quick Command Reference Table lists the objects, instances, and attributes needed to program the PLC to interface with the SVS 2000. The Statement of Compliance is in Appendix C.

PLC Polling Parameters

The PLC Scanner must be programmed with the following parameters to connect to DeviceNet card:

8 bytes Produced (Tx) and
1 byte Consumed (Rx)

Polled Parameters

- [A] Produced Data (Tx) is:
- | | | |
|--------------|---------|------|
| Gross Weight | 32 bits | DINT |
| Net Weight | 32 bits | DINT |
- [B] Consumed Data (Rx) is SINT (1 byte).

Bits with "1" values, cause the associated defined action.

Bits with "0" values, cause no action.

Bit Definitions	
bit7	Tare
bit6	Totalize
bit5	Clear Totalizer System
bit4	Clear Tare Count
bit0 through bit3 is not used	

Value Legend:

Value Type	Description	Value Range
BOOL	Boolean	0 or 1 (0=off, 1 = on)
SINT	Short Integer	-128 to 127
INT	Integer	-32,768 to 32,767
DINT	Double Integer	-2147483648 to (2147483648-1)
USINT	Unsigned Short Integer	0 to 255
UINT	Unsigned Integer	0 to 65,535

Quick Command Reference Table

Object	#	Instance	#	Attribute	#	Type	Attribute Range	Get (g) Set (s) ^{1 2 3}
Weight System	100	Weight/system data	1	Gross weight	1	DINT	-9,999,999 – +9,999,999	g
				Net weight	2	DINT	-999,999 – +999,999	g
				Totalizer weight	3	DINT	-999,999,999 – +999,999,999	g
				Tare ⁴	4	UINT	0 = no, 1 = tare	s
				Tare counter	5	UINT	0 – 65,535	g
				Clear tare counter ⁴	6	UINT	0 = no, 1 = clear	s
				Totalize ⁴	7	UINT	0 = no, 1 = totalize	s
				Totalizer counter	8	UINT	0 – 65,535	g
				Clear totalizer counter ⁴	9	UINT	0 = no, 1 = clear	s
Calibration	105	Calibration data	1	Lo span	1	DINT	0 – 999,999	g
				High Span	2	DINT	0 – 999,999	g
				Display Value Correction	3	DINT	0 – 999,999	g
				Scale Factor Weight	4	DINT	0 – 999,999	g or s
				Scale Factor Counts	5	DINT	0 – 2,097,151	g or s
				Zero Counts	6	DINT	0 – 2,097,151	g or s
				Status of Last Calibration	7	USINT	0 = calibration defaults 1 = manual calibration 2 = auto calibration	g

Notes

1. **Get** commands ('g' in the Quick Command Reference Table) read a parameter, such as gross weight or net weight. These commands are always used to send data from the **SVS 2000 to the PLC**.
2. **Set** commands ('s' in the Quick Command Reference Table) set a parameter, such as a command to tare. These commands are always used to send data from the **PLC to the SVS 2000**.
3. **Get or Set** commands ('g or s' in the Quick Command Reference Table) read **or** set a parameter value, such as a command for Lo Span Calibration. These commands can be used to send data from the SVS 2000 to the PLC or from the PLC to the SVS 2000.
4. A "1" causes the attribute action, a "0" causes no action. It always READS back as "0".

Object Name	#	Object Instance	#	Attribute	#	Type	Attribute Range	Get (g) Set (s)	
Setpoints	110	Relay 1	1	Value	1	DINT	-999,999 to 999,999	g	
				Deadband	2	USINT	0 to 65,535	g	
				Hi/Lo	3	BOOL	0=lo, 1=hi	g	
				Track	4	USINT	0=gross, 1=net, 2=total, 3=fault	g	
				Fail-safe	5	USINT	0=off, 1=no change, 2=on	g	
				Pre-act	6	UINT	0 to 65,535	g	
				Force mode	7	USINT	0=force mode off; 1=force mode on, relay activated, 2=force mode on, relay deactivated	g	
				Enabled	8	BOOL	0=disabled, 1=enabled	g	
		Relay 2	2	Same as Relay 1					
		Digital output 1	3	Same as Relay 1					
		Digital output 2	4	Same as Relay 1					
		Digital output 3	5	Same as Relay 1					
		Digital output 4	6	Same as Relay 1					
		Digital output 5	7	Same as Relay 1					
Digital output 6	8	Same as Relay 1							
Current Output	115	Current output data	1	Range	1	BOOL	0=0-20mA, 1=4-20mA	g	
				4/0mA value	2	DINT	-999,999 to 999,999	g	
				20mA value	3	DINT	-999,999 to 999,999	g	
				Track	4	USINT	0=gross, 1=net, 2=total	g	
				Fail-safe	5	USINT	0=lo, 1=no change, 2=hi	g	
				Enabled	6	BOOL	0=off, 1=on	g	
				Force mode	7	USINT	0=force mode off; 1=force mode on, current 0/4mA; 2=force mode on, current 20mA	g	
Trouble Shooting	120	Trouble-shooting data	1	Raw counts	1	DINT	0 to 2,097,151	g	
				Filtered counts	2	DINT	0 to 2,097,151	g	

Appendix A. Kistler-Morse Service and Warranty

Product Warranty

A complete, unabridged copy of our product warranty is available upon request from Kistler-Morse. A summary of the warranty, *subject to the terms and conditions listed fully in the warranty*, follows:

Kistler-Morse warrants equipment of its own manufacture to be free from defects in material and workmanship for one year from date of shipment to original user. Kistler-Morse will replace or repair, at our option, any part found to be defective. Buyer must return any part claimed defective to Kistler-Morse, transportation prepaid.

Service

KM maintains a fully trained staff of field service personnel who are capable of providing you with complete product assistance. Our field service staff is based in Bothell, Washington USA (corporate headquarters) and Wilrijk, Belgium (European office).

Phone Consultation

Our Field Service staff provides the following services by telephone, via our regular and toll free number (toll free number in USA and Canada only):

- Technical, application, and troubleshooting assistance
- Spare parts assistance
- Warranty (replacement) assistance

On-Site Consultation

KM's Field Service staff can provide additional services at your request. Contact KM at the closest office for rate and scheduling information for the following services:

- Technical, application, startup, and troubleshooting assistance on-site
- Training on-site or at our corporate office
- Service calls
- Equipment updates to our latest configuration

General descriptions of some of these standard services follow. Of course, if your service needs vary from those described, we are available to discuss them with you.

Installation, Startup Assistance, and On-Site Training

Notes

1. For vessels to be instrumented with Microcells or L-Cells™, the customer may contract to have KM install the sensors. For all other sensors, installation must be performed by the customer.
 2. Field wiring, conduit installation, junction box mounting, and signal processor mounting must be performed by the customer. AC power must be connected to the signal processor, but not energized, prior to KM beginning work.
-

All field wiring will be checked for errors. The system will be powered up and checked out for proper electrical operation. The *Quick Config* procedure will be performed. For best results, KM requires moving a known amount of material, such as a truckload, for Live Load calibration. Live Load calibration will be performed if actual material or weight devices can be moved. Recommendations for the optimal performance of the system will be provided.

On-site training will include simulation of the Live Load calibration process (if Live Load calibration could not be performed while KM is on site) and instruction covering operation and maintenance of the system.

Troubleshooting

KM will troubleshoot systems for mechanical, electrical, calibration, and wiring errors. Normal component repairs will be made and wiring errors will be corrected, including replacement of non-repairable printed circuit boards.

Service Calls

KM will perform on-site repair and/or replacement services.

Return Material Authorization

If a part needs to be sent to the factory for repair, contact KM's corporate office and ask for a Return Material Authorization (RMA) number. The RMA number identifies the part and its owner and must be included with the part when it is shipped to the factory.

Address and Telephone Numbers

Corporate Office

Kistler-Morse Corporation
19021 120th Avenue NE Suite 101
Bothell, WA 98011-9511 USA

Phone: 425-486-6600
Toll Free (U.S.A. and Canada): 800-426-9010
Fax: 425-402-1500
Website: www.kistlermorse.com

European Office

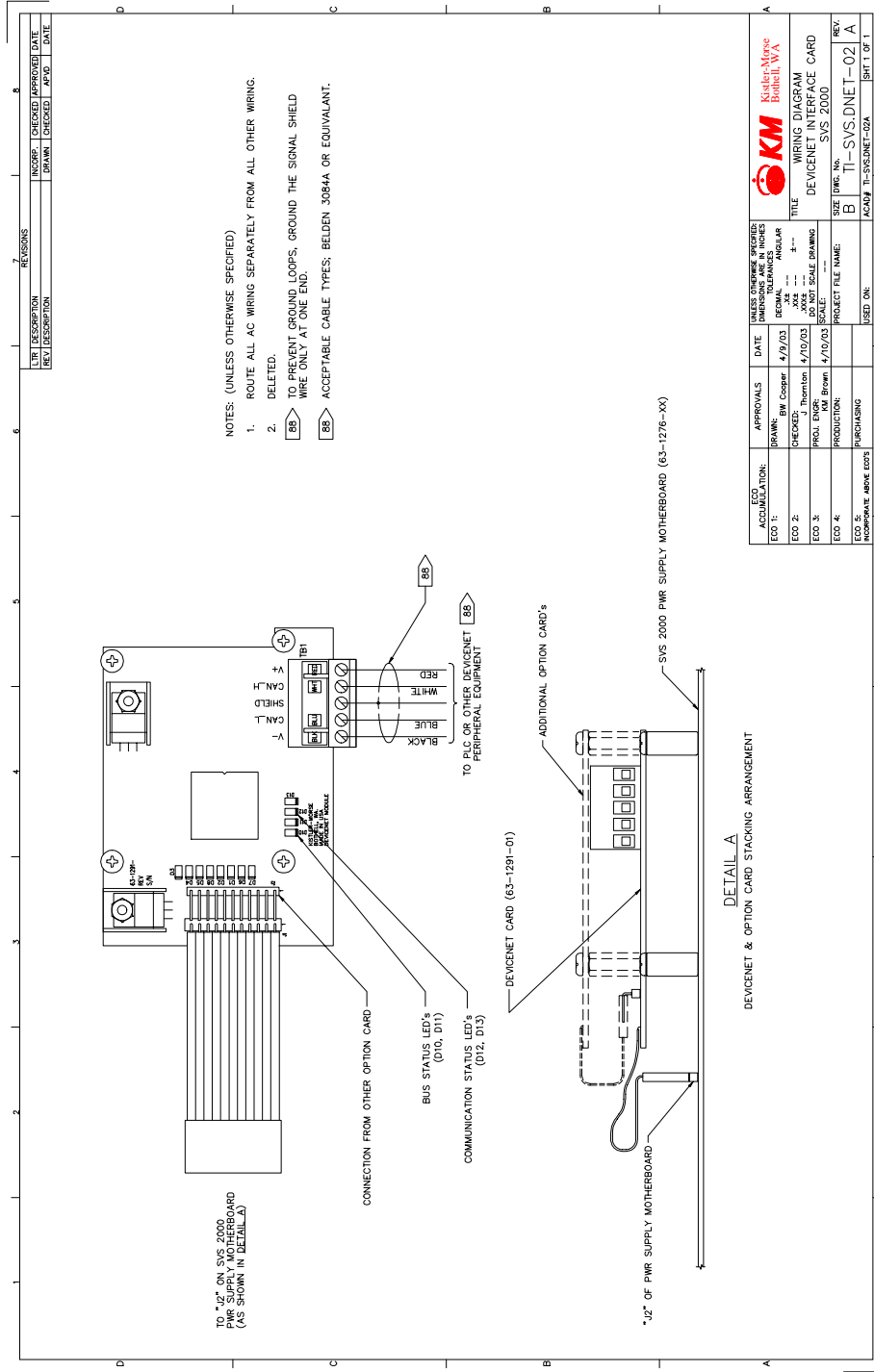
Kistler-Morse Corporation
Rucaplein 531
B2610 Wilrijk, Belgium

Phone: 32.3.218.99.99
Fax: 32.3.230.78.76

Appendix B. Technical Drawings

This appendix contains the following technical drawings for the DeviceNet PCB:

Drawing No.	Drawing Title
TI-SVS.DNET-02	Wiring Diagram, DeviceNet Interface Card, SVS 2000



- NOTES: (UNLESS OTHERWISE SPECIFIED)
1. ROUTE ALL AC WIRING SEPARATELY FROM ALL OTHER WIRING.
 2. DELETED.
- BS TO PREVENT GROUND LOOPS, GROUND THE SIGNAL SHIELD WIRE ONLY AT ONE END.
- BS ACCEPTABLE CABLE TYPES: BELDEN 3084A OR EQUIVALENT.

REVISIONS		UNLESS OTHERWISE SPECIFIED	
NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR CONSTRUCTION	4/19/03	KM
2	REVISED	4/19/03	KM
3	REVISED	4/19/03	KM
4	REVISED	4/19/03	KM
5	REVISED	4/19/03	KM
6	REVISED	4/19/03	KM
7	REVISED	4/19/03	KM
8	REVISED	4/19/03	KM

ECO ACCUMULATION:	APPROVALS:	DATE:	UNLESS OTHERWISE SPECIFIED
ECO 1: _____	DRAWN: BM Cooper	4/19/03	DIMENSIONS IN INCHES
ECO 2: _____	CHECKED: Thornton	4/19/03	TOLERANCES
ECO 3: _____	PROJ. ENGR: KM Brown	4/19/03	ANGULAR
ECO 4: _____	PRODUCTION:		3 --- 3 ---
ECO 5: _____	PURCHASING:		XXX --- 3 ---
ECO 6: _____			DO NOT SCALE DRAWING
			SCALE: ---
			PROJECT FILE NAME:
			USED ON:

		Kralen-Merco Bonfield, WA	
TITLE: WIRING DIAGRAM			
DEVCENET INTERFACE CARD			
SYS 2000			
SIZE:	DWG. NO.:	REV.:	
B	TI-SYS.DNET-02	A	
ACAD: TI-SYS.DNET-02A		SHEET 1 OF 1	

DETAIL A

DEVICENET & OPTION CARD STACKING ARRANGEMENT

Appendix C:

DeviceNet Statement of Conformance

Form 1

Fill in the blank or <input type="checkbox"/> the appropriate box					
General Device Data	Conforms to DeviceNet Specification	Volume I - Release	2.0		
		Volume II - Release	2.0		
	Vendor Name	Kistler-Morse Inc.			
	Device Profile Name	SVS 2000 DeviceNet Weight Module (Rev X.A)			
	Product Catalog Number	SVS-2000			
	Product Revision	New			
DeviceNet Physical Conformance Data	Network Power Consumption (Max)	60 mA @12V dc (worst case)			
	Connector Style	Open-Hardwired	<input type="checkbox"/>	Sealed-Mini	<input type="checkbox"/>
		Open-Pluggable	<input checked="" type="checkbox"/>	Sealed-Micro	<input type="checkbox"/>
	Isolated Physical Layer	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
		No	<input type="checkbox"/>		
	LEDs Supported	Module	<input checked="" type="checkbox"/>	Combo Mod/Net	<input type="checkbox"/>
		Network	<input checked="" type="checkbox"/>	I/O	<input type="checkbox"/>
	MAC ID Setting	DIP Switch	<input type="checkbox"/>	Software Selectable	<input checked="" type="checkbox"/>
		Other	_____		
	Default MAC ID	63			
	Communication Rate Setting	DIP Switch	<input type="checkbox"/>	Software Selectable	<input checked="" type="checkbox"/>
		Other	_____		
Communication Rates Supported	125k bit/s	<input checked="" type="checkbox"/>	500k bit/s	<input checked="" type="checkbox"/>	
	250k bit/s	<input checked="" type="checkbox"/>			
DeviceNet Communication Data	<input checked="" type="checkbox"/> Predefined Master/Slave Connection Set	Group 2 Client	<input type="checkbox"/>	Group Only 2 Client	<input type="checkbox"/>
		Group 2 Server	<input type="checkbox"/>	Group Only 2 Server	<input type="checkbox"/>
	<input type="checkbox"/> Dynamic Connections Supported (UCMM)	Group 1	<input type="checkbox"/>	Group 3	<input type="checkbox"/>
		Group 2	<input checked="" type="checkbox"/>		
	Fragmented Explicit Messaging Implemented	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
		No	<input type="checkbox"/>		
		If yes, Transmission Time Out	2000 ms		
		Typical Target Address Class	1		
		Instance	1		
		Attribute	7		

Form 2

DeviceNet	Identity Object 0x01							
Required Object Implementation	Object Class	ID	Description	Get	Set	Value Limit		
	Attributes	Open	1	Revision	<input type="checkbox"/>	<input type="checkbox"/>	_____	
			2	Max Instance	<input type="checkbox"/>	<input type="checkbox"/>	_____	
			<input checked="" type="checkbox"/> None Supported	6	Max ID of class attributes	<input type="checkbox"/>	<input type="checkbox"/>	_____
			7	Max ID of instance attributes	<input type="checkbox"/>	<input type="checkbox"/>	_____	
			<u>DeviceNet Services</u>	<u>Parameter Options</u>				
Services	<input type="checkbox"/>	Get_Attribute_All	_____					
<input checked="" type="checkbox"/> None Supported	<input type="checkbox"/>	Reset	_____					
	<input type="checkbox"/>	Get_Attribute_Single	_____					
	<input type="checkbox"/>	Find_Next_Object_Instance	_____					
	Object Instance	ID	Description	Get	Set	Value Limit		
	Attributes	Open	1	Vendor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	413	
			2	Product Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	100	
			3	Product code	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2000	
			4	Revision	<input checked="" type="checkbox"/>	<input type="checkbox"/>	X.X	
			5	Status (bits supported)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	
			6	Serial Number	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
			7	Product Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SVS 2K	
			8	State	<input type="checkbox"/>	<input type="checkbox"/>	_____	
			9	Config. Consistency Value	<input type="checkbox"/>	<input type="checkbox"/>	_____	
			10	Heartbeat Interval	<input type="checkbox"/>	<input type="checkbox"/>	_____	
			<u>DeviceNet Services</u>	<u>Parameter Options</u>				
Services	<input type="checkbox"/>	Get_Attribute_Single	_____					
<input type="checkbox"/> None Supported	<input checked="" type="checkbox"/>	Set_Attribute_Single	_____					
	<input type="checkbox"/>		_____					
	<input type="checkbox"/>		_____					
Vendor Specific Additions	If yes, fill out the Vendor Specific Additions form (Form 8)			Yes	<input type="checkbox"/>			
				No	<input checked="" type="checkbox"/>			

- Get** to indicate that attribute value is returned by the use of Get_Attribute_Single service
- Set** to indicate that attribute value is returned by the use of Get_Attribute_Single service

Form 3

DeviceNet	Message Router Object 0x02					
Required Object Implementation	Object Class	ID	Description	Get	Set	Value Limit
Open	Attributes	1	Revision	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input checked="" type="checkbox"/> None Supported	4	Optional attribute list	<input type="checkbox"/>	<input type="checkbox"/>	_____
		5	Optional service list	<input type="checkbox"/>	<input type="checkbox"/>	_____
		6	Max ID of class attributes	<input type="checkbox"/>	<input type="checkbox"/>	_____
		7	Max ID of instance attributes	<input type="checkbox"/>	<input type="checkbox"/>	_____
					<u>DeviceNet Services</u>	
	Services	<input type="checkbox"/>	Get_Attribute_All	_____		
<input checked="" type="checkbox"/> None Supported	<input type="checkbox"/>	Get_Attribute_Single	_____			
Object Instance	ID	Description	Get	Set	Value Limit	
Open	Attributes	1	Object list	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input checked="" type="checkbox"/> None Supported	2	Maximum connections supported	<input type="checkbox"/>	<input type="checkbox"/>	_____
		3	Number of active connections	<input type="checkbox"/>	<input type="checkbox"/>	_____
		4	Active connections list	<input type="checkbox"/>	<input type="checkbox"/>	_____
			<u>DeviceNet Services</u>		<u>Parameter Options</u>	
Services	<input type="checkbox"/>	Get_Attribute_All	_____			
<input checked="" type="checkbox"/> None Supported	<input type="checkbox"/>	Get_Attribute_Single	_____			
Vendor Specific Additions	If yes, fill out the Vendor Specific Additions form (Form 8)			Yes	<input type="checkbox"/>	
				No	<input checked="" type="checkbox"/>	

Form 4

DeviceNet	DeviceNet Object 0x03					
Required Object Implementation	Object Class	ID	Description	Get	Set	Value Limit
Open	Attributes	1	Revision	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
	<input type="checkbox"/> None Supported					
			<u>DeviceNet Services</u>		<u>Parameter Options</u>	
Services	<input type="checkbox"/>	Get_Attribute_Single	_____			
<input type="checkbox"/> None Supported						
Object Instance	ID	Description	Get	Set	Value Limit	
Open	Attributes	1	MAC ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_0-63_____
	<input type="checkbox"/> None Supported	2	Baud rate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	125K,250K,500K
		3	BOI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0
		4	Bus-off counter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
		5	Allocation information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
		6	MAC ID switch changed	<input type="checkbox"/>	<input type="checkbox"/>	_____
		7	Baud rate switch changed	<input type="checkbox"/>	<input type="checkbox"/>	_____
		8	MAC ID switch value	<input type="checkbox"/>	<input type="checkbox"/>	_____
		9	Baud rate switch value	<input type="checkbox"/>	<input type="checkbox"/>	_____
			<u>DeviceNet Services</u>		<u>Parameter Options</u>	
Services	<input checked="" type="checkbox"/>	Get_Attribute_Single	_____			
<input type="checkbox"/> None Supported	<input checked="" type="checkbox"/>	Set_Attribute_Single	_____			
	<input checked="" type="checkbox"/>	Allocate M/S connection set	_____			
	<input checked="" type="checkbox"/>	Release M/S connection set	_____			
Vendor Specific Additions	If yes, fill out the Vendor Specific Additions form (Form 8)			Yes	<input type="checkbox"/>	
				No	<input checked="" type="checkbox"/>	

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Form 5

DeviceNet	Assembly Object 0x04						
Required Object Implementation	Object Class		ID	Description	Get	Set	Value Limit
	Attributes	Open	1	Revision	<input type="checkbox"/>	<input type="checkbox"/>	_____
			2	Max Instance	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input checked="" type="checkbox"/> None Supported						
			DeviceNet Services		Parameter Options		
	Services		<input type="checkbox"/>	Create	_____		
	<input checked="" type="checkbox"/> None Supported		<input type="checkbox"/>	Delete	_____		
			<input type="checkbox"/>	Get_Attribute_Single	_____		
	Object Instance		Instance Type		Instance ID(s)		
	<i>The Object Instance section must be completed for each instance type implemented</i>		Static Input	<input type="checkbox"/>	_____		
			Static Output	<input type="checkbox"/>	_____		
			Static I/O	<input type="checkbox"/>	_____		
			Static Configuration	<input type="checkbox"/>	_____		
		<input checked="" type="checkbox"/> None Supported		Dynamic	<input type="checkbox"/>	_____	
			ID	Description	Get	Set	Value Limit
	Attributes	Open	1	Number of Members in List	<input type="checkbox"/>	<input type="checkbox"/>	_____
			2	Member List	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input checked="" type="checkbox"/> None Supported		3	Data	<input type="checkbox"/>	<input type="checkbox"/>	_____
			DeviceNet Services		Parameter Options		
	Services		<input type="checkbox"/>	Delete	_____		
	<input checked="" type="checkbox"/> None Supported		<input type="checkbox"/>	Get_Attribute_Single	_____		
			<input type="checkbox"/>	Set_Attribute_Single	_____		
			<input type="checkbox"/>	Get_Member	_____		
			<input type="checkbox"/>	Insert_Member	_____		
			<input type="checkbox"/>	Remove_Member	_____		
	Vendor Specific Additions		If yes, fill out the Vendor Specific Additions form (Form 8)		Yes	<input type="checkbox"/>	
					No	<input checked="" type="checkbox"/>	

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Form 6

DeviceNet		Connection Object 0x05 – Explicit Message					
Required Object Implementation	Object Class	ID	Description	Get	Set	Value Limit	
	Attributes	Open	1	Revision	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input checked="" type="checkbox"/> None Supported						
			DeviceNet Services		Parameter Options		
	Services		<input type="checkbox"/>	Reset	_____		
	<input checked="" type="checkbox"/> None Supported		<input type="checkbox"/>	Create	_____		
			<input type="checkbox"/>	Delete	_____		
			<input type="checkbox"/>	Get_Attribute_Single	_____		
			<input type="checkbox"/>	Find_Next_Object_Instance	_____		
Total Active Connections Possible		2					
Object Instance	Section	Information	Max Instance				
<i>The Object Instance section must be completed for each combination of Instance type, Production trigger, Transport type, and Transport class supported.</i>	Instance type	Explicit Message	<input checked="" type="checkbox"/>				
		Polled I/O	<input type="checkbox"/>				
		Bit Strobed I/O	<input type="checkbox"/>				
	Production trigger	Dynamic I/O	<input type="checkbox"/>				
		Cyclic	<input type="checkbox"/>				
		Change of State	<input type="checkbox"/>				
	Transport Type	Application	<input type="checkbox"/>				
		Triggered	<input type="checkbox"/>				
		Server	<input type="checkbox"/>				
	Transport Class	Client	<input type="checkbox"/>				
		0	<input type="checkbox"/>				
		2	<input type="checkbox"/>				
			3	<input type="checkbox"/>			
Attributes	Open	ID	Description	Get	Set	Value Limit	
		1	State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		2	Instance type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		3	Transport class trigger	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		4	Produced connection ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		5	Consumed connection ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		6	Initial comm. Characteristics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		7	Produced connection size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		8	Consumed connection size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		9	Expected packet rate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2500	
		12	Watchdog time-out action	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0-3	
		13	Produced connection path length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		14	Produced connection path	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		15	Consumed connection path length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		16	Consumed connection path	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
		17	Production inhibit time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____	
			DeviceNet Services		Parameter Options		
	Services		<input type="checkbox"/>	Reset	_____		
	<input type="checkbox"/> None Supported		<input type="checkbox"/>	Delete	_____		
			<input type="checkbox"/>	Apply Attributes	_____		
			<input checked="" type="checkbox"/>	Get_Attribute_Single	_____		
			<input checked="" type="checkbox"/>	Set_Attribute_Single	_____		
Vendor Specific Additions		If yes, fill out the Vendor Specific Additions form (Form 8)		Yes	<input type="checkbox"/>		
				No	<input checked="" type="checkbox"/>		

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Form 7

DeviceNet		Connection Object 0x05 – Polled I/O						
Required Object Implementation	Object Class	ID	Description	Get	Set	Value Limit		
	Attributes	Open	1	Revision	<input type="checkbox"/>	<input type="checkbox"/>	_____	
	<input checked="" type="checkbox"/> None Supported							
	Services			Parameter Options				
	Services	<input type="checkbox"/>	Reset	_____				
	<input checked="" type="checkbox"/> None Supported	<input type="checkbox"/>	Create	_____				
		<input type="checkbox"/>	Delete	_____				
		<input type="checkbox"/>	Get_Attribute_Single	_____				
		<input type="checkbox"/>	Find_Next_Object_Instance	_____				
Total Active Connections Possible		2						
Object Instance	Section	Information	Max Instance					
<i>The Object Instance section must be completed for each combination of Instance type, Production trigger, Transport type, and Transport class supported.</i>	Instance type	Explicit Message	<input type="checkbox"/>					
		Polled I/O	<input checked="" type="checkbox"/>					
		Bit Strobed I/O	<input type="checkbox"/>					
		Dynamic I/O	<input type="checkbox"/>					
	Production trigger	Cyclic	<input type="checkbox"/>					
		Change of State	<input type="checkbox"/>					
		Application	<input type="checkbox"/>					
	Transport Type	Triggered	<input type="checkbox"/>					
		Server	<input type="checkbox"/>					
	Transport Class	Client	<input type="checkbox"/>					
0			<input type="checkbox"/>					
2			<input type="checkbox"/>					
3			<input type="checkbox"/>					
	ID	Description	Get	Set	Value Limit			
Attributes	Open	1	State	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		2	Instance type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		3	Transport class trigger	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		4	Produced connection ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		5	Consumed connection ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		6	Initial comm. Characteristics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		7	Produced connection size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8		
		8	Consumed connection size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1		
		9	Expected packet rate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2500		
		12	Watchdog time-out action	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0-3		
		13	Produced connection path length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		14	Produced connection path	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		15	Consumed connection path length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		16	Consumed connection path	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
		17	Production inhibit time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
			DeviceNet Services			Parameter Options		
			Services	<input type="checkbox"/>	Reset	_____		
	<input type="checkbox"/> None Supported	<input type="checkbox"/>	Delete	_____				
		<input type="checkbox"/>	Apply Attributes	_____				
		<input checked="" type="checkbox"/>	Get_Attribute_Single	_____				
		<input checked="" type="checkbox"/>	Set_Attribute_Single	_____				
Vendor Specific Additions		If yes, fill out the Vendor Specific Additions form (Form 8)		Yes	<input type="checkbox"/>			
				No	<input checked="" type="checkbox"/>			

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