

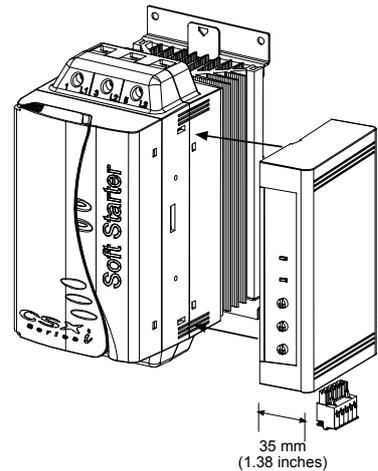
## I. Installation

Install the DeviceNet Interface using the following procedure:

1. Remove control power and mains supply from the soft starter.
2. Attach the DeviceNet Interface to the soft starter as illustrated below.
3. Set the DeviceNet Interface Node Address (MAC ID) and Data Rate.
4. Apply control power to the soft starter.
5. Insert the network connector into the interface and power up the DeviceNet network.

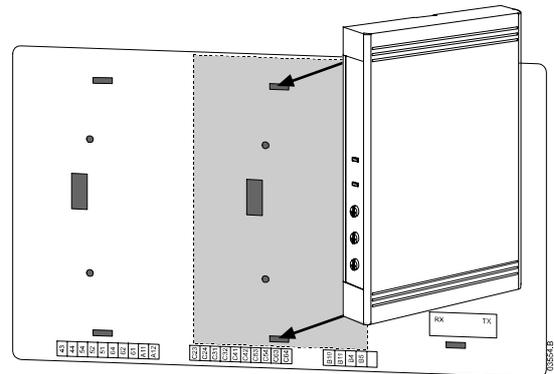
### CSX Series:

Plug the interface onto the side of the soft starter.



### MVS:

Plug the interface onto the back of the MVS Controller.



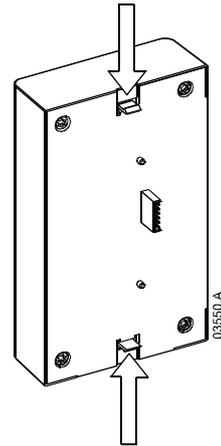
### CAUTION

Network designs must decrease the maximum allowable dropline length by 400 mm for every DeviceNet Interface installed on the network. Failure to do so may result in network communication errors and decreased reliability.

Example: ODVA specifies a maximum dropline length of 156 m on a network operating at 125 kb/s. If six DeviceNet Interfaces were installed on this network, the total dropline length would decrease to 153.6 m.

Remove the DeviceNet Interface using the following procedure:

1. Take the interface off-line and remove the DeviceNet connector.
2. Remove control power and mains supply from the soft starter.
3. Push a small flat-bladed screwdriver into the slots at the top and bottom of the interface and depress the retaining clips.
4. Pull the interface away from the soft starter.



### CAUTION

Remove control power and mains supply from the soft starter before attaching or removing accessories. Failure to do so may damage the equipment.

## 2. Configuration

The DeviceNet Interface is a Group 2 slave device, using a predefined master/slave connection set. I/O data is produced and consumed using polled I/O messaging.

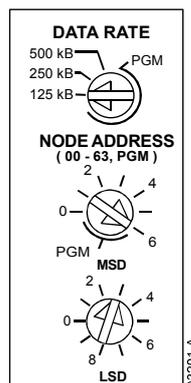
The soft starter must be added to the DeviceNet manager project using the EDS file and configuration/management software tool. The file is supplied with the interface on a floppy disk or can be downloaded from the website [www.aucom.com](http://www.aucom.com). In order to operate successfully, the correct EDS file must be used.

Product	EDS Filename
CSX Series	SSDM04_11.eds
MVS	SSDM05_12.eds

An on-screen graphics bitmap file is included on the installation disk or can be downloaded from the website [www.aucom.com](http://www.aucom.com). This bitmap filename is device.bmp.

## 3. Adjustment

The factory default settings for the rotary adjustment switches are:



Changes to the rotary switch settings take effect when the DeviceNet network is next powered up.

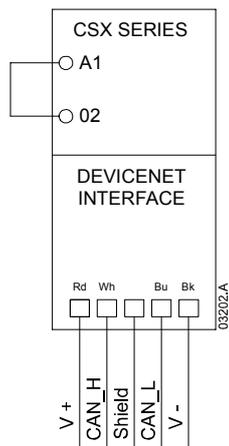


### NOTE

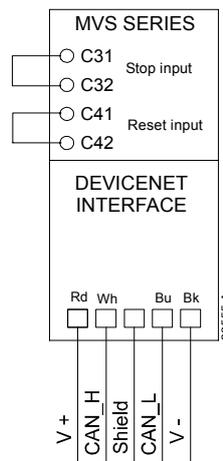
The Data Rate and Node Address (MAC ID) must be set locally on the interface. These cannot be set using DeviceNet management software.

When the Data Rate and MSD Node Address (MAC ID) rotary switches are set on PGM position, the interface uses the previously used valid on-line Data Rate and Node Address (MAC ID).

If the MVS soft starter is operating in Remote mode, links must be fitted to terminals C31-C32 and C41-C42 as shown (these links are not required for Local mode operation).



Standard connection onto DeviceNet bus



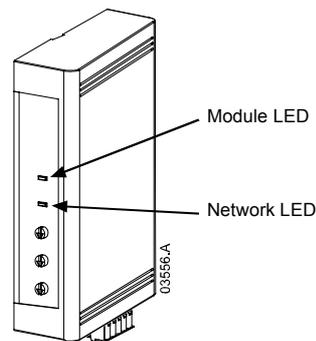
Standard connection onto DeviceNet bus

(Remote mode)

#### 4. Module and Network LEDs

The Module LED indicates the condition of the power supply and interface operation.

The Network LED indicates status of the communication link between the DeviceNet Interface and the network. LED operation is as follows:



LED	State	Description
Module	Off	Network power off
	Green	Normal operation
	Red	Unrecoverable fault
	Red/Green flashing	Self Test mode
Network	Off	Duplicate MAC ID test has not been completed
	Green flashing	Online but no connection with Master
	Green	Online and allocated to a Master
	Red flashing	One or more timed out I/O connections
	Red	Failed communication between interface and Master
	Red/Green flashing	Communication faulted and received an Identity communication faulted request



**NOTE**

When a communications failure occurs, the soft starter will trip if the Communication Timeout parameter for the network is set greater than zero. When communication is restored, the soft starter must be reset.

#### 5. DeviceNet Polled I/O Structure

Once the EDS file has been loaded, the DeviceNet Interface must be added to the scanner list with parameters shown in the following table:

Parameter	Value
I/O connection type	Polled
Poll receive size	14 bytes
Poll transmit size	2 bytes

## DEVICENET INTERFACE

Once the soft starter, interface and Master have been set up, configured and powered up, the Master will transmit 2 bytes of data to the interface and receive 14 bytes of data from the interface.

Master > Slave polled I/O output data is as follows:

Byte	Bit	Function
0	0	0 = Stop command 1 = Start command
	1	0 = Enable Start or Stop command 1 = Quick Stop (ie coast to stop) and disable Start command
	2	0 = Enable Start or Stop command 1 = Reset command and disable Start command
	3 to 7	<i>Reserved</i>
1	0 to 1 <sup>1</sup>	0 = Use soft starter remote input to select motor set 1 = Use primary motor set when starting 2 = Use secondary motor set when starting 3 = <i>Reserved</i>
	2 to 7	<i>Reserved</i>

<sup>1</sup> Only available on MVS units.

Slave > Master polled I/O input data is as follows:

Byte	Bit	Function	Value
0	0	Trip/Fault	1 = Soft starter trip
	1 <sup>2</sup>	Warning	1 = Soft starter warning
	2	Running 1	0 = Unknown, ready to start or tripped 1 = Starting, running or stopping
	3	<i>Reserved</i>	
	4	Ready	0 = Start or stop command not acceptable 1 = Start or stop command acceptable
	5	Control from Net	1 (Always = 1)
	6	<i>Reserved</i>	
	7	At reference	1 = Running (full voltage)
1	0 to 7	Status	0 = Unknown 2 = Not ready (restart or thermal delay) 3 = Ready to start 4 = Starting or running 5 = Soft stopping 7 = Trip/Fault
2	0 to 7	Trip/Fault code	Refer to trip code table below
3	0	Initialised	1 = Phase sequence bit is valid (bit 1) after 1 <sup>st</sup> start
	1	Phase sequence	1 = Positive phase sequence detected
	2 to 7	<i>Reserved</i>	
4 <sup>1</sup>	0 to 7	Motor current (low byte)	Current (A)
5 <sup>1</sup>	0 to 7	Motor current (high byte)	
6 <sup>1</sup>	0 to 7	Current %FLC (low byte)	Current as a percentage of soft starter FLC setting (%)
7 <sup>1</sup>	0 to 7	Current %FLC (high byte)	
8 <sup>1</sup>	0 to 7	% Motor 1 temperature	Thermal model
9	0 to 7	<i>Reserved</i>	
10 <sup>2</sup>	0 to 7	% Power factor	Percentage power factor (100 = power factor of 1)
11 <sup>2</sup>	0 to 7	Power (low byte)	Power low byte, scaled by power scale
12 <sup>2</sup>	0 to 3	Power (high nibble)	Power high nibble, scaled by power scale
	4 to 5	Power scale	0 = Multiply power by 10 to get W 1 = Multiply power by 100 to get W 2 = Power (kW) 3 = Multiply power by 10 to get kW
	6 to 7	<i>Reserved</i>	
13 <sup>2</sup>	0 to 7	<i>Reserved</i>	

<sup>1</sup> Only available on MVS and CSX/i units.

<sup>2</sup> Only available on MVS units.

## 6. Trip Codes

Trip Code	Trip Type	CSX	CSX <i>i</i>	MVS
0	No trip	●	●	●
11	Auxiliary trip A			●
20	Motor overload		●	●
23	L1 phase loss			●
24	L2 phase loss			●
25	L3 phase loss			●
26	Current imbalance (Phase imbalance)		●	●
27	Ground fault			●
28	Instantaneous overcurrent			●
29	Undercurrent			●
50	Power loss (Power circuit)	●	●	●
51	Undervoltage			●
52	Overvoltage			●
54	Phase sequence		●	●
55	Mains (Supply) frequency	●	●	●
62	EEPROM failure			●
70	Miscellaneous			●
75	Motor thermistor		●	●
101	Excess start time		●	●
102	Invalid motor connection			●
104	Internal error			●
105	Bypass contactor failure			●
110	Auxiliary trip B			●
111	RTD relay trip			●
112	RTD communication failure			●
113	Starter communication failure (between interface and soft starter)	●	●	●
114	Network communication failure (between interface and network)	●	●	●
115	L1 shorted SCR			●
116	L2 shorted SCR			●
117	L3 shorted SCR			●
119	Bypass overload		●	
120	SCR temperature model			●
121	Battery/Clock failure			●

## 7. Parameter Object

The DeviceNet Interface supports a parameter object through explicit messaging. Soft starter parameters can be uploaded (written) and downloaded (read) using DeviceNet management software (such as RS Logix and RS Networkx). When the DeviceNet Interface is powered up, it automatically obtains parameter information from the soft starter.

This function is only available with MVS soft starters. Refer to the MVS User Manual for parameter details.

**8. Specifications**

<b>Enclosure</b>	
Dimensions .....	35 mm (W) × 157 mm (H) × 90 mm (D)
Weight .....	250 g
Protection .....	IP20
<b>Mounting</b>	
Spring-action plastic mounting clips (x 2)	
<b>Connections</b>	
Soft starter .....	6-way pin assembly
Network .....	5-way male and unpluggable female connector (supplied)
Maximum cable size .....	2.5 mm <sup>2</sup>
Contacts .....	Gold flash
<b>Settings</b>	
Node address	
Setting .....	Rotary switches
Range .....	0 to 63
Data rate	
Setting .....	Rotary switch
Options .....	125 kB, 250 kB, 500 kB
<b>Power</b>	
Consumption	
steady state .....	19 mA at 25 VDC 31 mA at 11 VDC
in-rush (at 24 VDC) .....	1.8 A maximum for 2 ms
Galvanically isolated	
<b>Certification</b>	
CE .....	IEC 60947-4-2
CE .....	IEC 60947-4-2
ODVA .....	DeviceNet Conformance Tested ®