BIM-04-2
Bus Interface Module for fluid temperature
(Sensor is sold separately)

BARE WIRE

BLACK WIRE

temperature sensor

Hold wire release button when inserting or removing wires

SENDER
SEND-

status light

BIM-04-2

BIM-xx-2
Power & data connectors

setup/status switch

BIM-xx-2 18 inch power/data harness

Connect to the BIM-04-2 if you need to connect to a BIM-xx-2

Connect directly to another BIM-xx-2
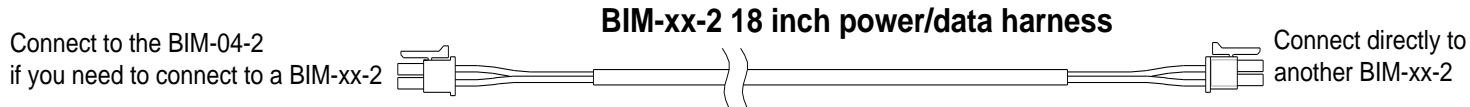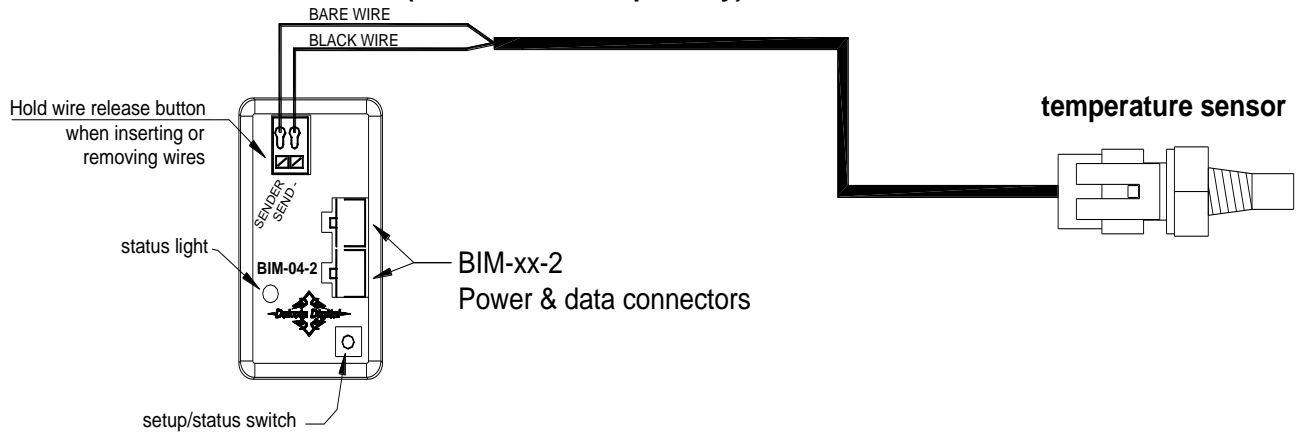
This Bus Interface Module connects to a temperature sensor, Dakota Digital part number SEN-04-5. There are two power & data interface (I/O) ports on the module. Either one can be connected to the gauge system or to another module, allowing several units to be daisy chained together. Do not connect the I/O port to anything other than a Dakota Digital gauge or BIM. Do not mount the module in the engine compartment; it should be mounted in interior of the vehicle. Each unit connected to the bus needs a unique ID number assigned to it. The unit comes preset with an ID value that should not conflict with any other BIM connected to your system. If needed the ID can be automatically reset to an unused value. The factory default label is TEMP, but this can be changed in the gauge setup.

Labels available for each input are:
TEMP -   generic temperature input. This will display TEMP x, Tx, or TEMPERATURE CHx where x is a number from 1 – 8 corresponding to the module ID number. ID's over 8 will start over at 1.
WATER -   dual water temperature input for right hand side water temp sensor. When this is active the gauge system water display will show the higher of the left and right sensors. The message display will show both temperature readings side by side. The gauge system water temp sensor should be installed in the left hand side.
OIL -   oil temperature input. This will display OIL, OT, or OIL TEMP.
TRANS -   transmission temperature input. This will display TRANS, TT, or TRANS TEMP.
DIFF -   rear differential temperature input. This will display DIFF, DT, or DIFF TEMP.

Specs for each input are:

	Sensor	Range	High Warning
TEMP	SEN-04-5 only	100 - 320F	131 – 320
WATER	SEN-04-5 only	100 - 320F	none (set by gauge system water temp)
OIL	SEN-04-5 only	100 - 320F	131 – 320
TRANS	SEN-04-5 only	100 - 320F	131 – 320
DIFF	SEN-04-5 only	100 - 320F	131 – 320

Temperature unit will follow the unit set for the main water temp gauge, Fahrenheit or Celsius.
The sensor has 1/8" NPT threads. Adapters are available to convert to other thread sizes.

To set or change the ID number:

The ID will not normally need to be changed. A green-red-red flash on the BIM-04-2 status light indicates an ID conflict with another connected BIM. The following procedure will allow the BIM-04-2 to automatically select a new, unused ID.

- Hold the switch on BIM while turning the key on. The BIM status light will be steady RED.
- Release the switch.
- When the status light begins flashing, it is finished.

The labels and warning points are set up through the gauge display system.
Only VFD3/3X controls with a plastic case support adding BIM's.
For VFD3, VFD3X, and VHX systems follow these steps:

- Make sure the BIM units are all connected to the gauge control box with the 3.5mm data cables.
- Hold the SW1 switch from the gauge system control box while turning the key on. The message display should show SETUP.
- Release SW1.
- Press and release SW1 until BIM is shown on the message display.
- Press and hold SW1. The message display should show SCAN followed by the number of BIM channels detected. Release SW1.
- If 0 is shown, check all connections and then press and hold SW1 with SCAN shown to retry reading the modules.
- Otherwise, if any other number is shown, press and release SW1 until SETUP is shown.
- Press and hold SW1 until the speed display shows " – " or the message changes.
- Release SW1. On the VFD3 systems the message display will show the label assigned to the first channel found and the speed display will show "C" followed by the channel ID number. On the VHX systems the message display will show "CH" followed by the channel ID number on one line and the label currently assigned on the second line.
- Press and release SW1 until the desired channel ID number is shown.
- Press and hold SW1. The message display will show "LABEL".
- Release SW1. The message display will show the label assigned to this channel.
- Press and release SW1 until the desired label is shown.
- Press and hold SW1. The message display will show "WARN" (this is skipped if WATER was selected for the label).
- Release SW1. The message display will show "H" followed by the current high warning point or will flash the warning point.
- Press and release SW1 to change the high warning point to the desired value.
- Press and hold SW1. The message display will now show "DONE".
- This can be repeated for additional channels, or the key can be turned off to exit setup.

For HDX systems follow these steps:

- Make sure the BIM units are all connected to the gauge control box.
- With the ignition on, press and hold both switches to enter SETUP. With external switches hold either one while turning the ignition on. Release the switches when SETUP is shown.
- Press and release either switch until BIM is selected. Press and hold either switch to enter BIM setup menu.
- Release the switch. A list of the BIM's found should be shown. If NONE FOUND is displayed then check connections to the BIM-04-2.
- Press and release either switch until BIM-04-2 is selected. The status LED on the BIM will flash RED-GREEN.
- Press and hold either switch to enter setup for this module.
- Release the switch. The menu will show FORMAT, LABEL, WARN LO, WARN HI, CALIBRATE, BACK. Any menu that does not apply to this BIM will be grey and cannot be selected.
- Use either switch to select the option you wish to change, (refer to the HDX manual for specifics).
- When you are finished select BACK to return to the BIM selection menu.
- When you are finished, select BACK to return to the BIM list menu, select BACK to return to the main menu, and then select EXIT SETUP to return to normal operation.

With HDX systems the setup can also be done with the Dakota Digital app for Apple and Android devices.

Troubleshooting quick tips:
While the BIM is operating normally, the status light will flash green.
A steady green indicates it is powered up but not receiving any bus activity.
A flashing yellow-red (steady red with a flashing green) indicates an open or shorted temperature sensor connection.
A green flash-red flash indicates the BIM is currently selected in the gauge setup menu.
A green-red-red flash indicates an ID conflict with another connected BIM.

Troubleshooting guide.

Problem	Possible cause	Solution
Sensor does not show on gauge readout. BIM will not light up at all.	PWR wire does not have power.	Connect to a location that has power.
	GND wire does not have a good ground.	Connect to a different ground location.
	Power/data harness is damaged.	Inspect harness. Repair or replace any damaged areas.
	Module is damaged.	Return for service. (see instructions)
Sensor does not show on gauge readout. BIM has a steady green light.	Interface cable is not connected.	Connect the supplied 3.5mm data cable between the module and the gauge control box.
	Interface cable is loose.	Make sure both ends of the cable are seated in securely.
	Another BIM is set with the same channel ID.	Test module works when connected to control box alone. Change ID on one of the modules so each module uses unique ID.
	On VHX systems, the BIM display for this channel is disabled.	Follow instructions in VHX manual to enable the BIM display screen.
Sensor does not show on gauge readout. BIM light is flashing green-red-red.	Another BIM is set with the same channel ID.	Test module works when connected to control box alone. Change ID on one of the modules so each module uses unique ID.
Gauge lights up, but does not read correctly.	Loose connection on sensor wires.	Inspect and reconnect wires.
	Connector not seated on sensor.	Reattach the sensor plug, making sure the locking tab clicks in place.
	Channel sensor label setup is incorrect.	Change label by entering BIM setup through gauge system.
	Voltage or wiring problem in the vehicle wiring harness.	Check wiring harness for loose or damaged wires.
Gauge lights up, but displays "---".	SND terminal is shorted to ground.	Check wire for damaged insulation. Replace if necessary.
	Sender is damaged.	Replace sender.
Gauge lights up, but displays "EEE".	Sender is not connected to gauge.	Connect SND terminal on gauge to sender terminal.
	Wire between gauge and sender is broken.	Test and replace wire.
	Sender is damaged.	Replace sender.
	Module is damaged.	Return module for service. (see instructions)

SERVICE AND REPAIR

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical consultation is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems.

Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number. Package the product in a good quality box along with plenty of packing material. Ship the product by UPS or insured Parcel Post. Be sure to include the RMA number on the package, and include a complete description of the problem with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day. Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase. Send no money. We will bill you after repair.

Dakota Digital Limited Lifetime Warranty

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship for the lifetime of the original vehicle it was installed in, such defect(s) will be repaired or replaced at Dakota Digital's option.

This warranty does not cover nor extend to damage to the vehicle's systems, and does not cover diagnosis, removal or reinstallation of the product. This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.   Dakota Digital assumes no responsibility for loss of time, vehicle use, owner inconvenience nor related expenses.

Dakota Digital will cover the return standard freight once the product has been evaluated for warranty consideration, however the incoming transportation is to be covered by the owner.

This Warranty is in lieu of all other expressed warranties or liabilities. Any implied warranties, including any implied warranty of merchantability, shall be limited to the duration of this written warranty. No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

> ⚠**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov