General Specifications - 5094-OF8, 5094-OF8XT (Continued)

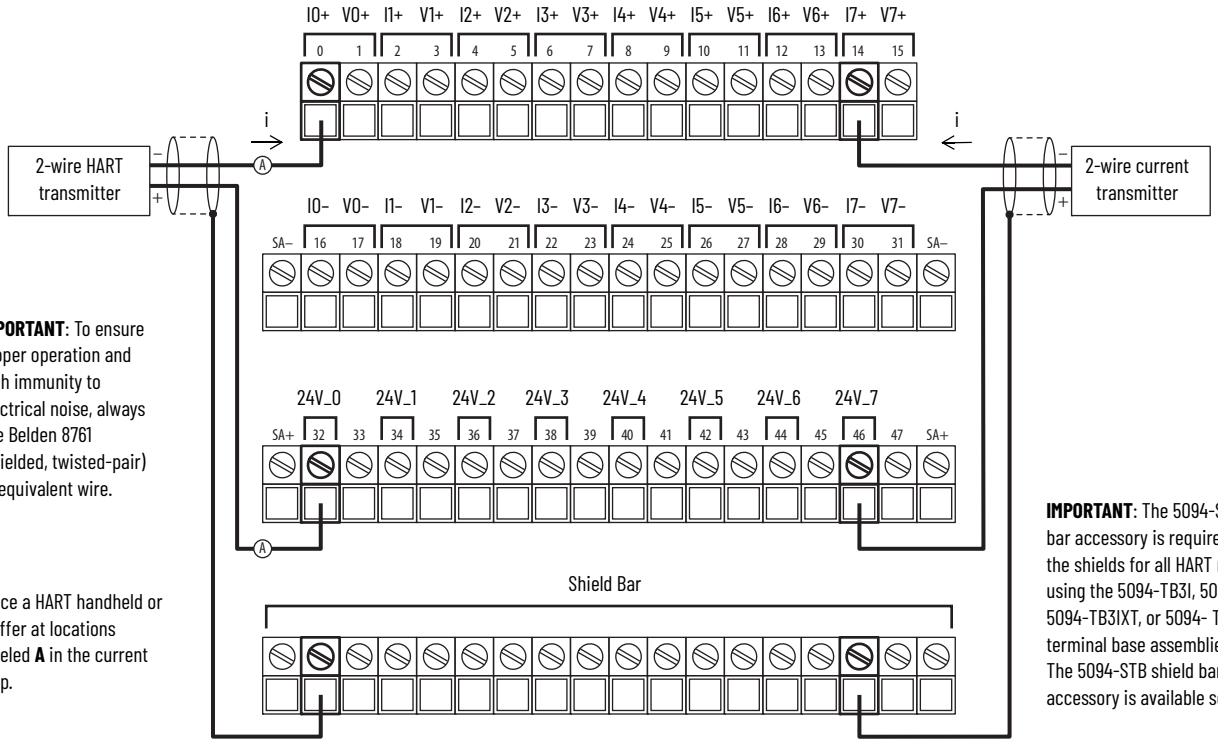
Attribute	5094-OF8, 5094-OF8XT
Weight, approx	108 g (0.24 lb)
Enclosure type	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

(1) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual.

5094-IF8IH and 5094-IF8IHXT Analog 8-channel Isolated Current/Voltage/HART/Digital Input Sensor Modules

This figure shows a wiring diagram for the 5094-IF8IH and 5094-IF8IHXT modules. You must connect a 24V DC power source to the left SA+/– terminals to provide field-side power.

5094-IF8IH and 5094-IF8IHXT Wiring Diagram – 2-wire Current/HART Transmitter

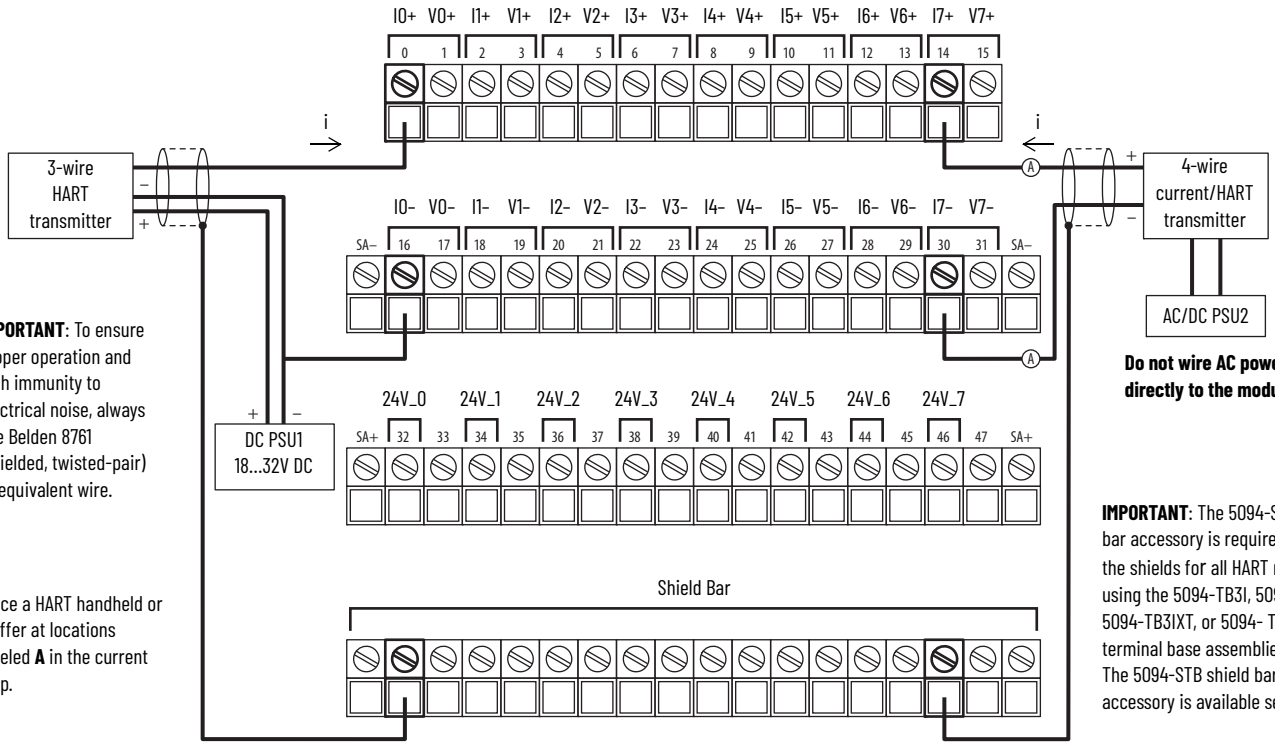


IMPORTANT: To ensure proper operation and high immunity to electrical noise, always use Belden 8761 (shielded, twisted-pair) or equivalent wire.

Place a HART handheld or sniffer at locations labeled **A** in the current loop.

IMPORTANT: The 5094-STB shield bar accessory is required to wire the shields for all HART modules using the 5094-TB3I, 5094-TB3IS, 5094-TB3IXT, or 5094- TB3ISXT terminal base assemblies. The 5094-STB shield bar accessory is available separately.

5094-IF8IH and 5094-IF8IHXT Wiring Diagram – 3-wire and 4-wire Current/HART Transmitter



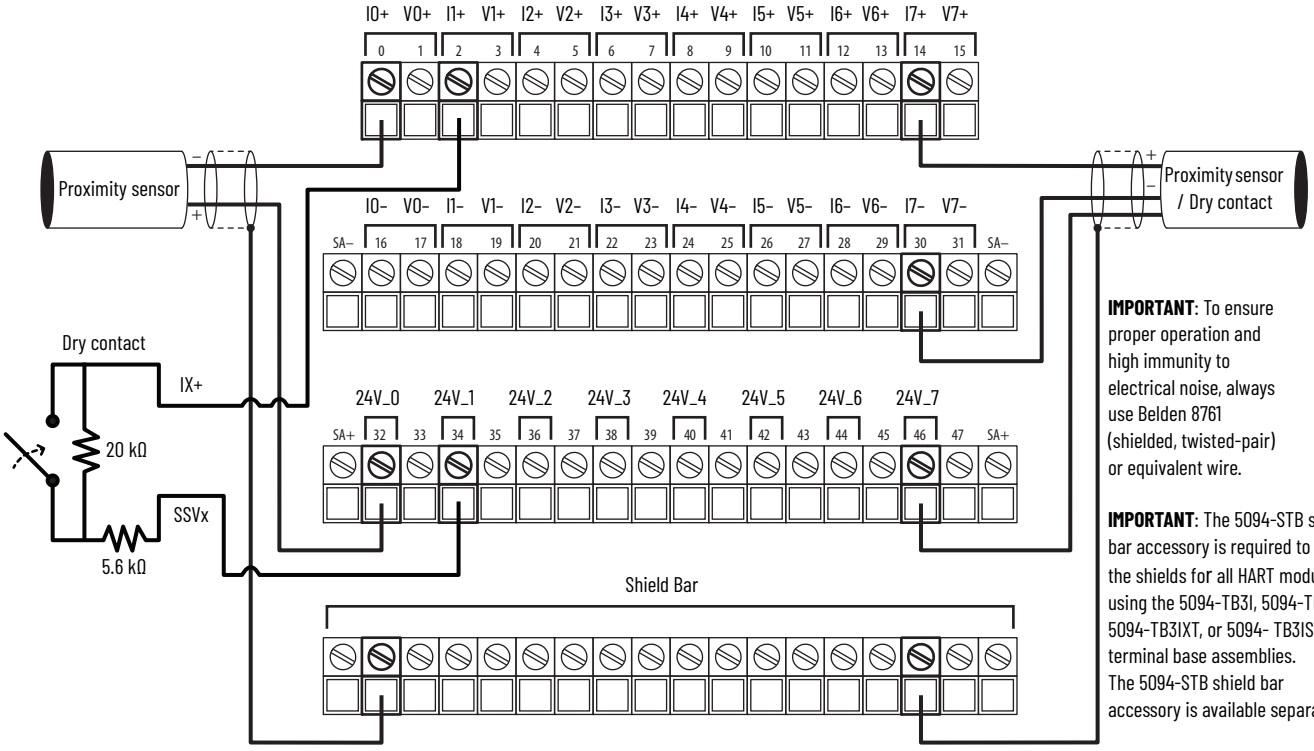
IMPORTANT: To ensure proper operation and high immunity to electrical noise, always use Belden 8761 (shielded, twisted-pair) or equivalent wire.

Place a HART handheld or sniffer at locations labeled **A** in the current loop.

Do not wire AC power directly to the module

IMPORTANT: The 5094-STB shield bar accessory is required to wire the shields for all HART modules using the 5094-TB3I, 5094-TB3IS, 5094-TB3IXT, or 5094- TB3ISXT terminal base assemblies. The 5094-STB shield bar accessory is available separately.

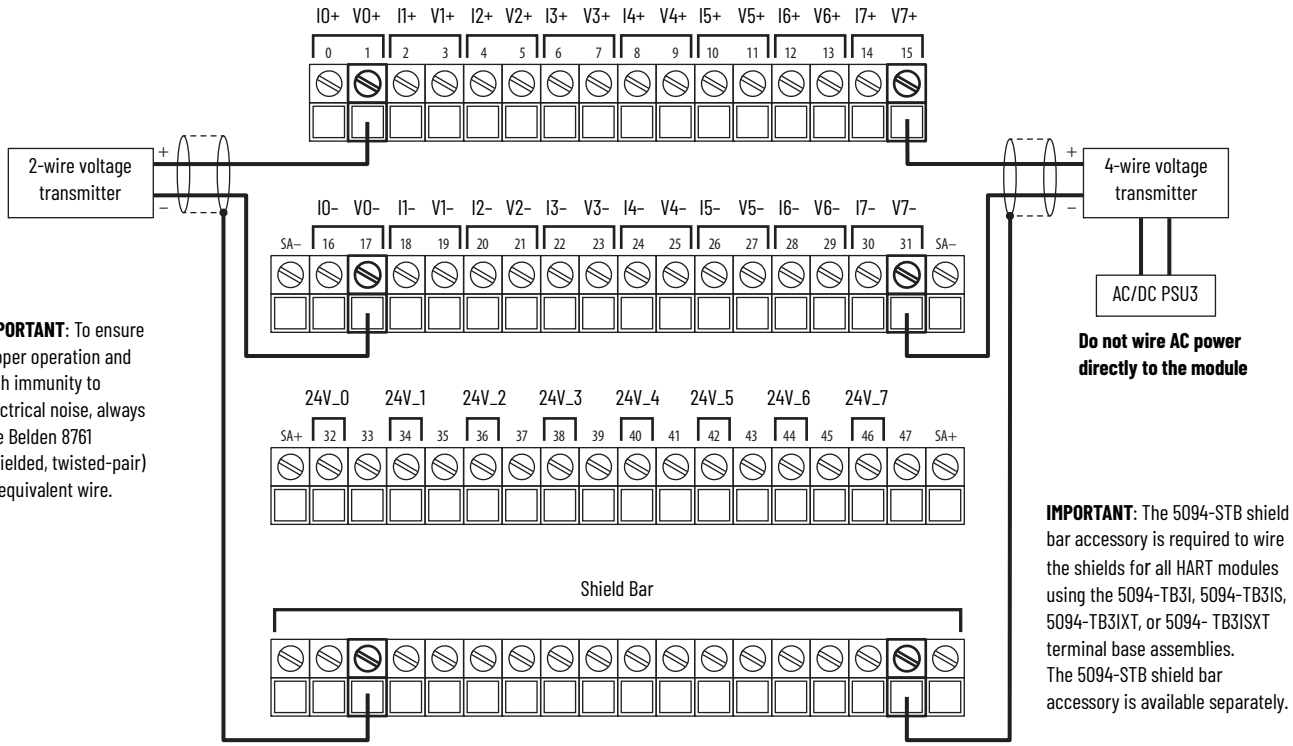
5094-IF8IH and 5094-IF8IHXT Wiring Diagram – Digital Input Sensor



IMPORTANT: To ensure proper operation and high immunity to electrical noise, always use Belden 8761 (shielded, twisted-pair) or equivalent wire.

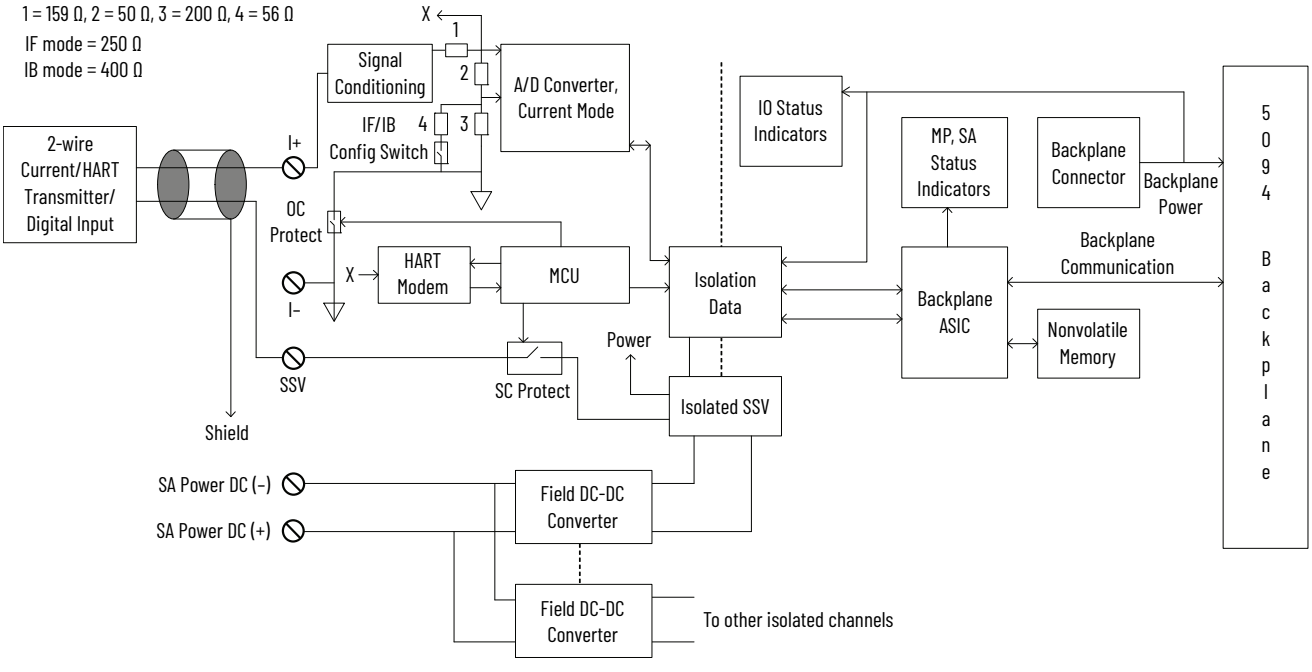
IMPORTANT: The 5094-STB shield bar accessory is required to wire the shields for all HART modules using the 5094-TB3I, 5094-TB3IS, 5094-TB3IXT, or 5094- TB3ISXT terminal base assemblies. The 5094-STB shield bar accessory is available separately.

5094-IF8IH and 5094-IF8IHXT Wiring Diagram – 2-wire and 4-wire Voltage Transmitter



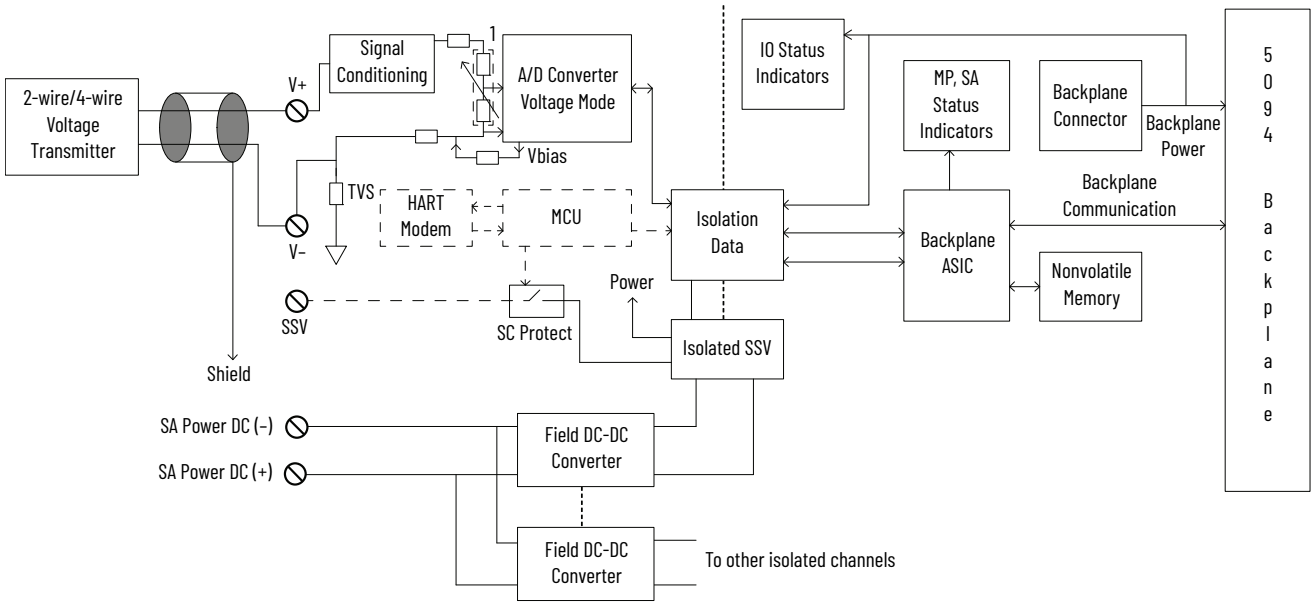
This figure shows a functional block diagram for the 5094-IF8IH and 5094-IF8IHXT modules in current/HART/Digital Input mode.

5094-IF8IH and 5094-IF8IHXT Functional Block Diagram – 2-wire Current/HART Transmitter/Digital Input Sensor



This figure shows a functional block diagram for the 5094-IF8IH and 5094-IF8IHXT modules in voltage mode.

5094-IF8IH and 5094-IF8IHXT Functional Block Diagram – 2-wire and 4-wire Voltage Transmitter



Technical Specifications - 5094-IF8IH, 5094-IF8IHXT

Attribute	5094-IF8IH, 5094-IF8IHXT
Analog Inputs	
Inputs	8 individually isolated Supports current sourcing and differential signal
Input range, voltage	±10V 0…10V 0…5V
Input range, current	0…20 mA 4…20 mA (HART)
Input impedance	Voltage: >1 MΩ Current: 250 Ω, ±5 Ω, typical
Channel to channel isolation	250V (continuous), Basic Insulation Type
Module conversion method	Sigma-Delta, 24-bit ADC per channel
HART support	Yes, per channel HART modem
HART scan time	typically 1 s Additional device variables, configured commands, pass through messages, handheld communicators, secondary masters, communication errors, or configuration changes can significantly increase the update time.
Effective resolution, voltage[1] (at 60 Hz notch filter)	±10V: 18 bits 0…10V: 17 bits 0…5V:16 bits
Effective resolution, current[1] (at 60 Hz notch filter)	0…20 mA: 17 bits 4…20 mA: 17 bits
Calibrated accuracy at 25 °C (77 °F)	Voltage: 0.05% full scale with 60 Hz filter Current: 0.05% full scale with 60 Hz filter HART enabled, typical values: 0.1% full scale with 10 Hz filter 0.15% full scale with 60 Hz filter 0.25% full scale with 100 Hz filter 0.3% full scale with 200 Hz filter 0.6% full scale with 500 Hz filter
Calibrated accuracy over 0…60 °C (32…140 °F) temperature range	Voltage: 0.1% full scale with 60 Hz filter Current: 0.1% full scale with 60 Hz filter HART enabled, typical values: 0.15% full scale with 10 Hz filter 0.2% full scale with 60 Hz filter 0.3% full scale with 100 Hz filter 0.35% full scale with 200 Hz filter 0.65% full scale with 500 Hz filter

Technical Specifications - 5094-IF8IH, 5094-IF8IHXT (Continued)

Attribute	5094-IF8IH, 5094-IF8IHXT
Calibrated accuracy over full temperature range, -40...+70 °C (-40...+158 °F)	Voltage: 0.2% full scale with 60 Hz filter Current: 0.2% full scale with 60 Hz filter HART enabled, typical values: 0.25% full scale with 10 Hz filter 0.3% full scale with 60 Hz filter 0.4% full scale with 100 Hz filter 0.45% full scale with 200 Hz filter 0.75% full scale with 500 Hz filter
Scan Time @ 10 kHz notch Per channel Per module	 1.0 ms 1.0 ms
Step response 63% @ 10 kHz notch	2.0 ms
Notch filter at min RPI (0.2 ms)	10 kHz
Notch filter frequency at RPI of 2.5 ms, min	500 Hz
Input notch filter (Hz) selections	5, 10, 15, 20, 50 (50/60 Hz simultaneous rejection), 60, 100, 200, 500 – **for HART mode** 5, 10, 15, 20, 50 (50/60 Hz simultaneous rejection), 60, 100, 200, 500, 1000, 2500, 5000, 10000.
Input digital filter	1st order lag, 0 ms (Default) - 32,767 ms (32.767 s)
HART handheld/secondary master compliance	Yes
Overvoltage protection, max	Voltage mode: ±32V DC Current mode: +32V DC
Channel overcurrent protection	Current mode: 24.2 mA
SSV current, max	Current mode: 30.0 mA steady state
Sourcing voltage per channel, min	20V DC
Sourcing current per channel, max	25 mA
Short circuit recovery time	25 s
Data value during overrange condition	Voltage mode: 10.7V (±10V, 0...10V), 5.35V (0...5V) Current mode: 23 mA
Data value during underrange condition	Voltage mode: -10.7V (±10V), -0.041V (0...10V), -0.021V (0...5V) Current mode: 0.11 mA (0...20 mA), 3 mA (4...20 mA)
Open circuit detection time	10 ms min 1 s max
Onboard data alarming	Yes
Scaling to engineering units	Yes
Real-time channel sampling	Yes
Data format	IEEE 754 32-bit floating point
Timestamp of inputs	Yes
CIP Sync	Yes
Discrete Inputs	
On-state current, min	1.8 mA
Off-state current, max	1.6 mA
Channel impedance, max	4 kΩ
SSV current, max	30 mA per channel
Short-circuit current detection (for type 3-d input)	>6 mA
Open-wire detection (for type 3-d input)	<0.3 mA
Input delay time (screw to backplane), max Off to On On to Off	 2.0 ms 2.0 ms
Input min pulse width Off to On On to Off	 1.5 ms 1.5 ms
Input filter time Off to On On to Off	Input filter delay: filter time + filter accuracy User-selectable filter time: 0...50 ms Filter accuracy: -0.6...+1.5 ms Input filter delay: filter time + filter accuracy User-selectable filter time: 0...50 ms Filter accuracy: 0...1.5 ms

(1) Notch filter dependent.

General Specifications - 5094-IF8IH, 5094-IF8IHXT

Attribute	5094-IF8IH, 5094-IF8IHXT
Backplane Power (BP) voltage	15V DC
Backplane Power (BP) current, max	35 mA
Sensor Actuator Power (SA) voltage range	Per channel: 21...27V DC Module: 18...32V DC
Sensor Actuator Power (SA) current, max	Per channel: 25 mA Module: 350 mA (Includes per channel SSV output, 21 mA @ 25V for 2-wire HART device loop power)
Power dissipation, max	Current mode: 3.5 W
Thermal dissipation, max	Current mode: 11.94 BTU/hr
Isolation voltage	250V (continuous) Basic Insulation Type: System to Field SA Power to Channel SA Power to SSV SA Power to FE Channel to Channel Channel to FE
Calibration methods	Factory calibrated User-performed (optional)
Module keying	Mechanical keying or electronic keying via programming software
Indicators	1 green/red module status indicator 1 green/red SA power status indicator 8 yellow/red I/O status indicators
Normal mode noise rejection ratio	65 dB @ 50/60 Hz, notch filter dependent
Terminal base (TB) assembly	5094-TB3I (consists of a 5094-MB and 5094-RTB3I) or 5094-TB3IS (consists of a 5094-MB and 5094-RTB3IS) or 5094-TB3IXT (consists of a 5094-MBXT and 5094-RTB3IXT) or 5094-TB3ISXT (consists of a 5094-MBXT and 5094-RTB3ISXT) or **IMPORTANT:** You must order mounting bases (MBs) and removable terminal blocks (RTBs) separately. MBs and RTBs do not ship with FLEX 5000 I/O modules.
TB keying	**5 3**
Supported mounting orientation	Horizontal, horizontal and inverted, vertical, vertical and inverted
Wire category(1)	2 - shielded ports 2 - power ports
Wire size - Signal	0.34...2.5 mm^2 (22...14 AWG) solid or stranded copper wire that is rated at 105 °C (221 °F), or greater, 1.2 mm (3/64 in.) insulation, max Ferrule according to DIN 46 228/1.
Wire size - Power	2.5 mm^2 (14 AWG) Cu multi-strand
Dimensions (HxWxD), approx	87.0 x 94.0 x 54.0 mm (3.43 x 3.70 x 2.13 in.)
Weight, approx	160 g (0.353 lb)
Enclosure type	None (open-style)
North American temperature code	T4
ATEX temp code	T4
IECEx temp code	T4

(1) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual.