

Model 264IB

ABB 2600T Series Engineered solutions for all applications



FOUNDATION Fieldbus field indicator

- up to 8 H1 variables
- one selectable host variable

FOUNDATION Fieldbus blocks

- 2 enhanced PID blocks
- 1 arithmetic block
- 1 input selector block
- 1 control selector block

LAS backup capability

Hazardous area certifications, including Intrinsic Safety to FISCO

Flexible operation/configuration facilities

- provided locally via local keys combined with LCD integral display or host configuration platform

Description

FOUNDATION Fieldbus identifies a standardized communication system using a digital, serial, bidirectional protocol. It is a low hierarchic level network of LAN type, dedicated to process control instrumentation.

Characteristics

The Multivariable Field Indicator model 264IB is an accessory device of the 2600T series and communicates with any host interface supporting the FOUNDATION fieldbus protocol.

This unit has been designed for implementing different functions to fulfill specific purposes:

- field indication, acting as display for up to 8 variables available on the H1 segment (publisher/subscriber) and one variable produced by the host (client/server).
The variable selection is performed during the design of the function block application and linked as inputs at the internal MUX Function Block.
Any single variable is selected to be displayed via TAG scrolling by external unit keys.
- control function block container, to improve control strategies whenever it is not allowed by the transmitters on the segment.
Implemented control function blocks are 1 standard arithmetic, 1 standard input selector, 1 standard control selector and 2 enhanced PID (proportional/integral/derivative), allowing to support specific requirements for different kind of application (cascade control, flow compensation, algorithms, etc).
- LAS capability (Link Active Schedule), backup the link as the functionality, in order to keep alive the loop when the primary LAS element (DCS) fails.
This feature on a dedicate unit provides enhanced security both for transmitters which perform specifically the measurement tasks and for LAS function itself performed without using resources assigned to measure.

Functional Specifications

Temperature limits °C (°F) :

Operating temperature:

-20 and +70 (-4 and +158) with LCD integral display

Note : For Hazardous Atmosphere applications see the temperature range specified on the certificate/approval relevant to the aimed type of protection

Environmental limits

Electromagnetic compatibility (EMC)

Comply with EN 61000-6-3 for emission and EN 61000-6-2 for immunity requirements and test;

Radiated electromagnetic immunity level: 30V/m
(according to IEC 1000-4-3, EN61000-4-3)

Conducted electromagnetic immunity level : 30V
(according to IEC 1000-4-6, EN 61000-4-6)

Surge immunity level (with surge protector): 4kV
(according to IEC 1000-4-5 EN 61000-4-5)

Fast transient (Burst) immunity level: 4kV
(according to IEC 1000-4-4 EN 61000-4-4)

Humidity

Relative humidity: up to 100% annual average

Condensing, icing: admissible

Vibration resistance

Accelerations up to 2g at frequency up to 1000Hz
(according to IEC 60068-2-6)

Shock resistance

Acceleration: 50g

Duration: 11ms

(according to IEC 60068-2-27)

Wet and dust-laden atmospheres

The transmitter is dust and sand tight and protected against immersion effects as defined by EN 60529 (1989) to IP 67 (IP 68 on request) or by NEMA to 4X or by JIS to C0920.

Hazardous atmospheres

With or without integral display

- Combined INTRINSIC SAFETY and FLAMEPROOF/EUROPE:

ATEX/ZELM approval

II 1 GD T50°C, EEx ia IIC T6 (-40°C ≤ Ta ≤ +40°C)

II 1 GD T95°C, EEx ia IIC T4 (-40°C ≤ Ta ≤ +85°C)

II 2 GD T85°C, EEx d IIC T6 (-40°C ≤ Ta ≤ +75°C)

- CANADIAN STANDARDS ASSOCIATION

and FACTORY MUTUAL:

- Explosionproof: Class I, Div. 1, Groups A, B, C, D

- Dust ignitionproof : Class II, Div. 1, Groups E, F, G

- Suitable for : Class II, Div. 2, Groups F, G; Class III, Div. 1, 2

- Nonincendive: Class I, Div. 2, Groups A, B, C, D

- Intrinsically safe: Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G

AEx ia IIC T6/T4, Zone 0 (FM)

- GOST (Russia), based on ATEX

Electrical Characteristics and Options

Device type

LINK MASTER DEVICE

Link Active Scheduler (LAS) capability implemented.

Power supply

The unit operates from 9 to 32VDC, polarity independent.

For EEx ia approval power supply must not exceed 24VDC (entity certification) or 17.5VDC (FISCO certification), according to FF-816.

Current consumption

operating (quiescent): 10.5mA

fault current limiting: 20mA max.

Output signal

Physical layer in compliance to IEC 1158-2/EN 61158-2 with transmission to Manchester II modulation, at 31.25kbit/sec.

Function blocks/execution period

2 E-PID block / 25ms max (each)

1 arithmetic block (standard) / 10ms

1 input selector block (standard) / 10ms

1 control selector block (standard) / 10ms

Number of link objects

35

Number of VCRs

35

Output interface

FOUNDATION fieldbus digital communication protocol to standard H1, compliant to specification V. 1.5; FF registration ITK 4.51 in progress.

Integral display

LCD, 15 lines x 56 column dot matrix providing 2 lines indication as

– top: 5-digit (numeric) plus sign for variable value

– bottom: 7-digit alphanumeric alternating display of value units, status, variable tag.

Performance specifications

Supply voltage

Within voltage/load specified limits the total effect is negligible.

Load

Within load/voltage specified limits the total effect is negligible.

Radio frequency interference

No effect from 20 to 1000MHz and for field strengths up to 30V/m when tested with shielded conduit and grounding, with or without meter.

Common mode interference

No effect from 100Vrms @ 50Hz, or 50VDC

Physical specification

Integral display

plug-in rotatable (4 positions at 90°) type, LCD.

Electronic housing and covers

Barrel version

– Copper-free content aluminium alloy with baked epoxy finish;

– Low-copper content aluminium alloy with baked epoxy finish;

– AISI 316 L ss.

Covers O-ring

Buna N.

Local keys:

Glass filled polycarbonate plastic (removable).

Tagging

AISI 316ss data plate attached to the electronics housing.

Optional extras

Mounting brackets

For vertical and horizontal 60mm. (2in) pipes or wall mounting.

Supplemental customer tag

AISI 316 ss tag screwed/fastened to the transmitter for customer's tag data up to a maximum of 20 characters and spaces on one line for tag number and tag name. Special typing evaluated on request for charges.

Surge protection (only as external unit and FOR UNCLASSIFIED LOCATION)

Tag language

Communication connectors

Electrical connections

Two 1/2 NPT or M20x1.5 or PG 13.5 or 1/2 GK threaded conduit entries, direct on housing.

Special communication connector: M12x1 or 7/8, (on request and ONLY FOR UNCLASSIFIED LOCATION)

Terminal block

Two terminals for signal wiring (bus connection) up to 2.5mm² (14AWG)

Grounding

Internal and external 6mm² (10AWG) ground termination points are provided.

Mass (without options)

0.9kg approx (2lb); add 1.5kg (3.4lb) for AISI housing.

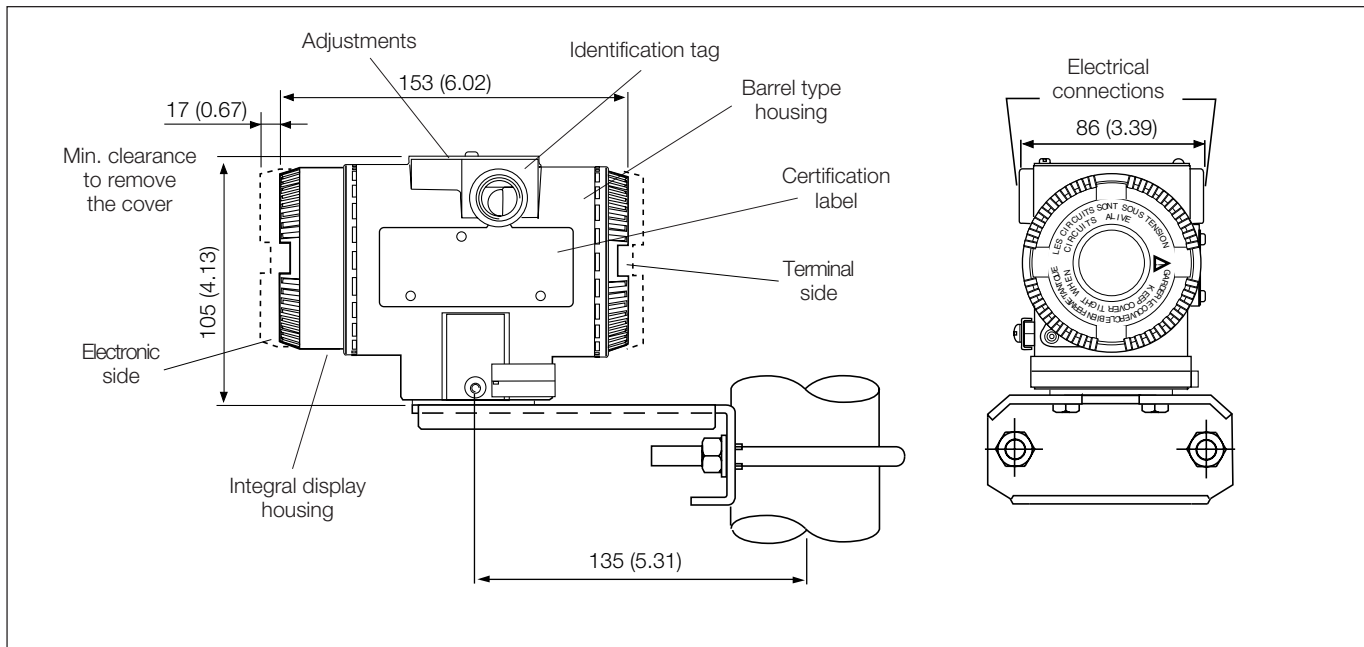
Add 650g (1.5lb) for packing.

Packing

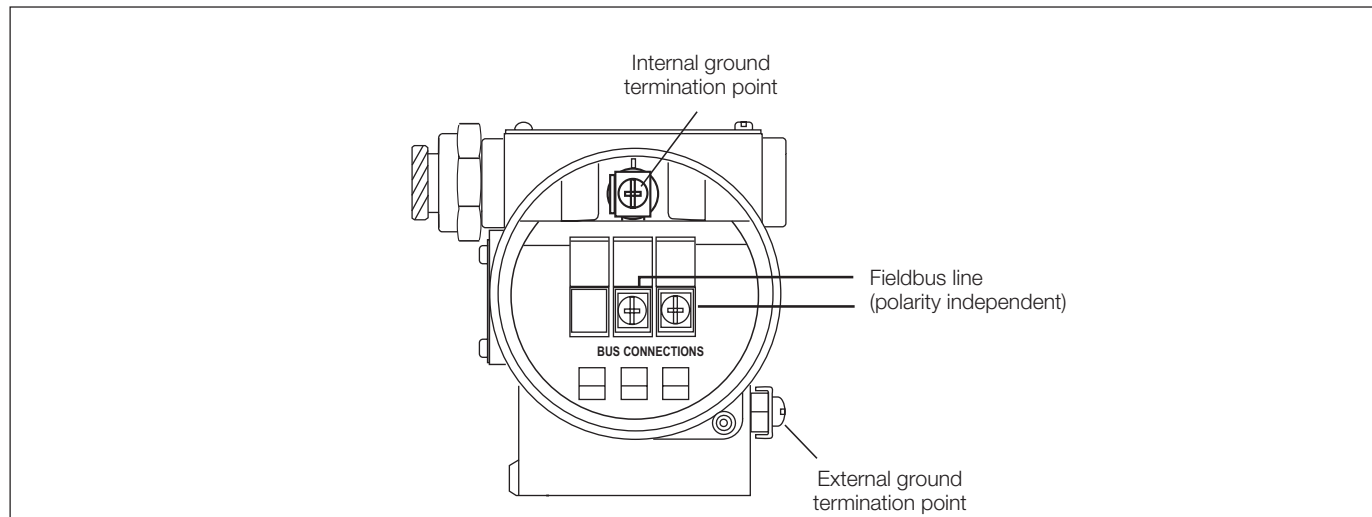
Carton 26 x 26 x 18cm approx (10 x 10 x 7in).

MOUNTING DIMENSIONS (not for construction unless certified) – dimensions in mm (in)

Transmitter with barrel aluminium housing on bracket for vertical or horizontal 60mm (2in) pipe mounting

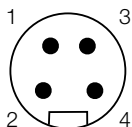


Electrical connections

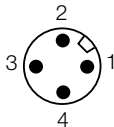


Plug connector (ONLY FOR UNCLASSIFIED LOCATION)

7/8" connector



M12 x 1 connector



PIN (male) IDENTIFICATION	
Pin No.	FOUNDATION Fieldbus
1	FF-
2	FF+
3	SHIELD
4	GROUND

Mating female plug NOT SUPPLIED

BASIC ORDERING INFORMATION model 264IB Multivariable Field Indicator

Select one character or set of characters from each category and specify complete catalog number.
Refer to additional ordering information code and specify one or more codes for each transmitter if additional options are required.

BASE MODEL – 1 st to 5 th characters		2	6	4	I	B	X	X
Multivariable Field Indicator								
Housing material and electrical connection – 6th character								
Aluminium alloy (Barrel version)	1/2in NPT						A	
Aluminium alloy (Barrel version)	M20 x 1.5 (CM 20)						B	
Aluminium alloy (Barrel version)	Pg 13.5						D	
Aluminium alloy (Barrel version)	1/2in GK						C	
Aluminium alloy (Barrel version)	Fieldbus connector	(Notes 1, 3)					G	
Aluminium alloy copper-free (Barrel version)	1/2in NPT						H	
Aluminium alloy copper-free (Barrel version)	M20 x 1.5 (CM 20)						L	
Aluminium alloy copper-free (Barrel version)	Pg 13.5						N	
Aluminium alloy copper-free (Barrel version)	1/2in GK						M	
Aluminium alloy copper-free (Barrel version)	Fieldbus connector	(Notes 1, 3)					R	
AISI 316 L ss (Barrel version)	1/2in NPT						S	
AISI 316 L ss (Barrel version)	M20 x 1.5 (CM20)						T	
AISI 316 L ss (Barrel version)	Pg 13.5						V	
AISI 316 L ss (Barrel version)	1/2in GK						U	
AISI 316 L ss (Barrel version)	Fieldbus connector	(Notes 1, 3)					Z	
Output/Additional options – 7th character								
FOUNDATION Fieldbus	No additional options					(Note 2)	F	
FOUNDATION Fieldbus	Options requested (to be ordered by "Additional ordering code")						3	

ADDITIONAL ORDERING INFORMATION for model 264IB

Add one or more 2-digit code(s) after the basic ordering information to select all required options

	XX	XX	XX	XX
Electrical certification				
Canadian Standard Association (CSA) (only 1/2in NPT, M20 and Pg 13.5 housing)	E4			
Factory Mutual (FM) approval (only with 1/2in NPT, M20 and Pg 13.5 electrical connection)	E6			
Combined ATEX - Intrinsic Safety and Flameproof	E7			
GOST (Russia) EEx ia	W1			
GOST (Russia) EEx d	W2			
Mounting bracket (shape and material)				
For pipe mounting (Not suitable for AISI housing)	Carbon steel		B1	
For pipe mounting	AISI 316 L ss		B2	
Surge (only for unclassified location)				
Surge/Transient Protector (UNIT EXTERNAL TO HOUSING)	(Note 3)		S1	
Connector (only for unclassified location)				
Fieldbus 7/8	(RECOMMENDED for FOUNDATION Fieldbus)	(Note 3)	U1	
Fieldbus M12x1		(Note 3)	U2	

Note 1: Select type in additional ordering code

Note 2: Not available with Electronic Housing code Z, R, G

Note 3: Not available with Electrical certification code E4, E6, E7, W1, W2.

Standard delivery items (can be differently specified by additional ordering code)

- General purpose (no electrical certification)
- Integral display, no mounting bracket, no surge protection
- English manual and labels

Contact us

ABB Ltd.

Process Automation

Howard Road
St. Neots
Cambridgeshire PE19 8EU
UK

Tel: +44 (0)1480 475321
Fax: +44 (0)1480 217948

ABB Inc.

Process Automation

125 E. County Line Road
Warminster
PA 18974
USA

Tel: +1 215 674 6000
Fax: +1 215 674 7183

ABB Automation Products GmbH

Process Automation

Schillerstr. 72
32425 Minden
Germany

Tel: +49 551 905 534
Fax: +49 551 905 555

ABB S.p.A.

Process Automation

Via Statale 113
22016 Lenno (CO)
Italy

Tel: +39 0344 58111
Fax: +39 0344 56278

www.abb.com

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