



FICHA TÉCNICA DE PRODUTO

PRODUCT DATASHEET

HMI – Automação e Instrumentação, Lda.

Travessa da Indústria, nº 111
4780-573 Santo Tirso
PORTUGAL

Tel. +351 252 850 501
Fax. +351 300 013 487

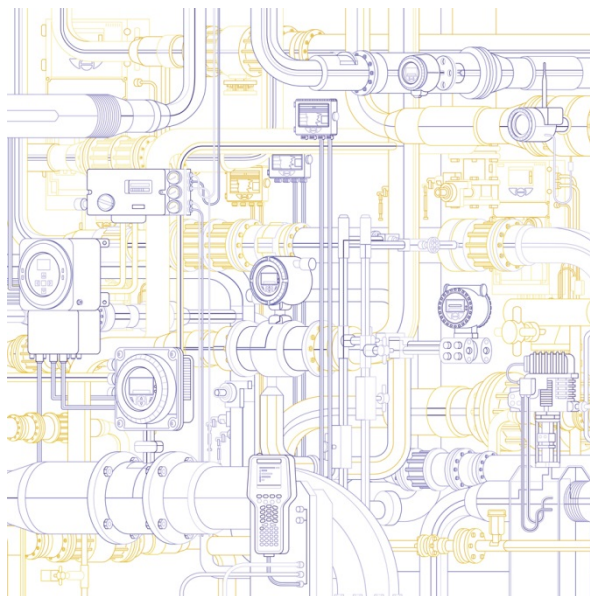
Web: www.hmi.pt

Email: hmi@hmi.pt

Devices overview

FOUNDATION fieldbus-H1

Measurement made easy



FOUNDATION fieldbus-H1 device family

- Pressure and Level Transmitter
- Multivariable Field Indicator
- Flowmeter
- Analyzer
- Level Measurement
- Temperature Transmitter
- Positioner
- Linking Device
- Network components, Accessories

	Pressure and Level Transmitter		
			
	2600T(266Gxx, 266Hxx, 266Pxx)	2600T(266Dxx, 266Mxx)	2600T(266Axx, 266Nxx, 266Vxx, 266Rxx)
Data sheet	DS/266HSH/NSH, DS/266GSH/ASH, DS/266XSH, DS/266XRH, DS/266XDH, DS/266GDH/ADH, DS/266GRH/ARH, DS/266GST/AST, DS/266XDT, DS/266XRT	DS/266XSH, DS/266MSH, DS/266DHH, DS/266XRH, DS/266MRH, DS/266XDH, DS/266DLH, DS/266MST/RST, DS/266XDT, DS/266XRT	DS/266HSH/NSH, DS/266GSH/ASH, DS/266XSH, DS/266XRH, DS/266XDH, DS/266GDH/ADH, DS/266GRH/ARH, DS/266GST/AST, DS/266XDT, DS/266XRT
Internet	www.abb.com/pressure	www.abb.com/pressure	www.abb.com/pressure
Application	Gauge Pressure / Level <u>Measuring Range:</u> 0.05 kPa ... 60 MPa, OVP up to 90 MPa (0.5 mbar ... 600 bar, OVP up to 900 bar)	Differential Pressure / Flow / Level <u>Measuring Range:</u> 0.05 kPa ... 16 MPa, PN up to 41 MPa (0.5 mbar ... 160 bar, PN up to 410 bar)	Absolute Pressure / Level <u>Measuring Range:</u> 0.3 kPa ... 16 MPa abs., OVP up to 21 MPa (3 mbar ... 160 bar abs., OVP up to 210 bar)
Ambient temperature	-40 ... 85 °C	-40 ... 85 °C	-40 ... 85 °C
Type of protection	IP 67, NEMA 4X	IP 67, NEMA 4X	IP 67, NEMA 4X
Explosion protection	II 1 G Ex ia IIC T6 & II 1/2 G Ex ia IIC T6 (-40 °C ≤ Ta ≤ 40 °C); II 1 D Ex iaD 20 T 95 °C & II 1/2D Ex iaD 21 T 95 °C. II 1/2 G Ex d IIC T6 & II 1/2 D Ex tD A21 IP67 T 85 °C. II 3 G Ex nL IIC T6 & II 3 D Ex tD A22 IP67 T 85 °C, XPI/IS/NI/DIP Class I, II or III Div.1 or 2		
Approvals	CE, ATEX, FM Approvals (US and Canada), IEC, GOST, PED		
FISCO approval	Yes	Yes	Yes
For FNICO usable	Yes	Yes	Yes
Overvoltage protection H1	Yes (integrated)	Yes (integrated)	Yes (integrated)
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000320-0007-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0007-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0007-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT066000 (ITK version 5.2.0)	IT066000 (ITK version 5.2.0)	IT066000 (ITK version 5.2.0)
Bus address	16 ... 247	16 ... 247	16 ... 247
local adjustment	Keypad and display	Keypad and display	Keypad and display
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	Yes	Yes	Yes
Resource Block (RB)	1 RB (Enhanced)		
Transducer Block (TB)	1 TB (Enhanced): Pressure with calibration, 1 TB (Customized): Advanced diagnostic with PILD algorithm (Plugged Impulse Line Detection), 1 TB (Customized): Display		
Function Block (FB)	AI and PID (Enhanced): 2 AI: Out of differential, absolute, gauge or static pressure, level, flow or sensor temperature and digital alarm signal, 1 PID: Controller block. All other FB (Standard): 1 AR: Arithmetic block, 1 IS: Input selector, 1 CS: Control selector, 1 SC: Signal characterization, 1 IT: Integrator / totalizer		
FB Execution time	PID = 40 ms, AI / AR / IS / CS / SC / IT = 25 ms		
Device configuration	central adjustment		
local adjustment	Keypad and display	Keypad and display	Keypad and display
Asset Monitor	Yes (for ABB Tools)	Yes (for ABB Tools)	Yes (for ABB Tools)
U _s min.	9.0 V DC	9.0 V DC	9.0 V DC
Basic current ¹⁾	15.0 mA	15.0 mA	15.0 mA
Δ Error current ¹⁾	5.0 mA	5.0 mA	5.0 mA
Start current after 10 ms	= basic current	= basic current	= basic current
External supply	–	–	–

¹⁾ Max. permanent current = basic current + Δ error current

P and L Transmitter	
Diagnosis data to increase the plant availability  = Maintenance req.  = Out of specification  = Check function  = Failure  = No message	2600T(266xx)
Generic fieldbus diagnosis	
(see page 20)	
- plus - Advanced diagnosis	
Device functionality	
Pressure sensor - failed	•
Temperature sensor - failed	•
Static pressure sensor - failed	•
Wrong or missing primary sensor signals	•
Sensor memory fail	•
Sensor memory burn failure	•
Sensor not detected	•
Electronics memory fail	•
Electronics memory burn failure	•
Sensor and electronics incompatible	•
Sensor and electronics interface error	•
Sensor or electronics replacement failures	•
Installation and Process	
Sensor overpressure	•
Pressure out of sensor Limits	•
Static pressure out of sensor limits	•
Sensor temperature out of operating limits	•
Static pressure over than installation enviromental limits	•
Pressure out of range	•
Simulation active	•
Plugged impulse line detected - line H plugged - line L plugged - lines H and L plugged - one undetected line plugged	•
New PILD training required	•

	Multivariable Field Indicator
	
	2600T(264IB)
Data sheet	SS/264IB
Internet	www.abb.com/pressure
Application	The Multivariable Field Indicator 264IB implements different functions: <u>1-Field Indicator</u> for up to 8 H1 variables (pub/sub) and 1 Host driven variable (client/server). <u>2-Control FB Container</u> to improve the control strategies in the field when the available transmitters do not allow it. <u>3-LAS Backup Unit</u>
Ambient temperature	-40 ... 85 °C
Type of protection	IP 67, NEMA 4X
Explosion protection	Ex ia IIC T4-T6, Ex d IIC T6 XP/IS/NI/DIP Class I, II or III Div.1 or 2
Approvals	CE, ATEX, FM, CSA
FISCO approval	Yes
For FNICO usable	Yes
Overvoltage protection H1	—
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	000320-0006-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT025500 (ITK version 4.51)
Bus address	16 ... 247
local adjustment	—
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	Yes
Resource Block (RB)	1 RB (Enhanced)
Transducer Block (TB)	1 TB (Customized): Display block
Function Block (FB)	2 PID (Enhanced): Controller block, 1 MUX (Customized): Multiplexer block All other FB Standard: 1 AR: Arithmetic, 1 IS: Input selector, 1 CS: Control selector
FB Execution time	PID = 25 ms, AR/IS/CS = 10 ms, MUX = 1 ms
Device configuration	
central adjustment	EDD
local adjustment	Keypad and display
Asset Monitor	—
U _s min.	9.0 V DC
Basic current ¹⁾	10.5 mA ±0.5 mA
Δ Error current ¹⁾	9.5 mA
Start current after 10 ms	= basic current
External supply	—

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters	
	
FSM4000	
Data sheet	D184S073U02 D184B093U32
Internet	www.abb.com/flow
Application	Electromagnetic Flowmeter Specially designed for pulp & paper and food & beverage industry, measure pulp stocks flows, fast changing process, two phase liquids, mining slurries and pulsating flows <u>Accuracy:</u> $\leq \pm 0.5\%$ of rate <u>Range:</u> DN 3 ... 1000 (flanged) DN 1 ... 100 (variabel / wafer / flange)
Ambient temperature	-25 ... 60 °C
Type of protection	IP 67 (IP 68)
Explosion protection	–
Approvals	3A, FDA, EHEDG
FISCO approval	–
For FNICO usable	–
Overvoltage protection H1	–
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	000320-0017-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT027200 (ITK version 4.6)
Bus address	16 ... 247
local adjustment	–
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	Yes
Resource Block (RB)	1 RB (Enhanced)
Transducer Block (TB)	1 TB (Customized): Flow
Function Block (FB)	3 AI (Standard): Volume flow, totalizer 1, totalizer 2 1 PID (Enhanced): Controller block
FB Execution time	AI = 25 ms, PID = 50 ms
Device configuration	central adjustment
local adjustment	Keypad, DIP switches, display
Asset Monitor	Yes (for ABB Tools)
U _s min.	9.0 V DC
Basic current ¹⁾	10.0 mA
Δ Error current ¹⁾	3.0 mA
Start current after 10 ms	= basic current
External supply	Yes (230 V AC, 24 V DC, < 45 VA)

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters		
Diagnosis data to increase the plant availability	FSM4000	
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message		
Generic fieldbus diagnosis		
(see page 20)		
- plus - Advanced diagnosis		
Device functionality		
AD converter / DSP - error	•	
Driver - error	•	
Internal / external database - error	••	
FRAM in primary - error	•	
External data loaded	•	
Update internal / external database	••	
Device configuration		
Totalizer - reset	•	
Simulation	•	
Error and warning simulation	•	
Test mode	•	
Function test	•	
Automatic adjust running	•	
Hold MV	•	
Installation and Process		
Empty pipe	•	
Flow > 105 %	•	
Totalizer - error	•	
Max. / min. alarm - error	••	
Old primary	•	
Overflow > F / < R	••	
Overflow difference totalizer	•	
Reverse Q	•	

	Flowmeters		
			
	FEH300 HygienicMaster	FEH500 HygienicMaster	FEP300 ProcessMaster
Data sheet	DS/FEH300-EN COM/FEX300/FEX500/FF-EN	DS/FEH500-EN COM/FEX300/FEX500/FF-EN	DS/FEP300-EN COM/FEX300/FEX500/FF-EN
Internet	www.abb.com/flow	www.abb.com/flow	www.abb.com/flow
Application	The Electromagnetic Flowmeter is designed specifically for the food & beverage, pharmaceutical and biotechnology industries. <u>Accuracy:</u> 0.4 % of rate, <u>Option:</u> 0.2 % of rate <u>Range:</u> DN 3 ... 100 (1/10 ... 4")	The Electromagnetic Flowmeter is designed specifically for the food & beverage, pharmaceutical and biotechnology industries. Range of diagnostic function provided is: Detection of Empty Pipe, gasbubbles, electrode coating, Monitoring of conductivity, sensor temperature, proper grounding. <u>Accuracy:</u> 0.3 % of rate, <u>Option:</u> 0.2 % of rate <u>Range:</u> DN 1 ... 100 (1/25 ... 4")	The Electromagnetic Flowmeter is used in the chemistry, power, industrial water/waste water, oil & gas, pulp & paper and metals & mining, with its modular design offers the industry's widest range of liners, electrodes and sizes for process applications. <u>Accuracy:</u> 0.4 % of rate, <u>Option:</u> 0.2 % of rate <u>Range:</u> DN 3 ... 2000 (1/10 ... 80")
Ambient temperature	(-40) -25 ... 60 °C	(-40) -25 ... 60 °C	(-40) -25 ... 60 °C
Type of protection	IP 65/67 (IP 68)	IP 65/67 (IP 68)	IP 65/67 (IP 68)
Explosion protection	Zone 1 ... 2 or Div 1 ... 2	Zone 1 ... 2 or Div 1 ... 2	Zone 1 ... 2 or Div 1 ... 2
Approvals	IECEX, ATEX, cFMus, GOST, 3A, EHEDG	IECEX, ATEX, cFMus, 3A, EHEDG	IECEX, ATEX, cFMus, NEPSI, GOST
FISCO approval	Yes	Yes	Yes
For FNICO usable	Yes	Yes	Yes
Overvoltage protection H1	—	—	—
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000320-0124-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0124-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0124-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT071300 (ITK version 5.2.0)	IT071300 (ITK version 5.2.0)	IT071300 (ITK version 5.2.0)
Bus address	16 ... 247	16 ... 247	16 ... 247
local adjustment	—	—	—
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	Yes	Yes	Yes
Resource Block (RB)	1 RB (Standard)	1 RB (Standard)	1 RB (Standard)
Transducer Block (TB)	5 TB (Customized): Flow, deviceinfo, special function, display, diagnostic	5 TB (Customized): Flow, deviceinfo, special function, display, diagnostic	5 TB (Customized): Flow, deviceinfo, special function, display, diagnostic
Function Block (FB)	4 AI (Enhanced): Q flowrate, int. totalizer fwd., int. totalizer rev., diagnostics, 1 PID (Enhanced) 1 INT (Standard), 1 DO (Standard): Cyclic Control	4 AI (Enhanced): Q flowrate, int. totalizer fwd., int. totalizer rev., diagnostics, 1 AO (Standard): Density adjust, 1 PID (Enhanced) 1 INT (Standard), 1 DI (Standard): Diag info, 1 DO (Standard): Cyclic control	4 AI (Enhanced): Q flowrate, int. totalizer fwd., int. totalizer rev., diagnostics, 1 PID (Enhanced) 1 INT (Standard), 1 DO (Standard): Cyclic control
FB Execution time	AI/PID/INT/DO = 25 ms	AI/AO/PID/INT/DI/DO = 25 ms	AI/PID/INT/DO = 25 ms
Device configuration	—	—	—
central adjustment	EDD	EDD	EDD
local adjustment	Keypad, DIP switches, display	Keypad, DIP switches, display	Keypad, DIP switches, display
Asset Monitor	Yes (for ABB Tools)	Yes (for ABB Tools)	Yes (for ABB Tools)
U _s min.	9.0 V DC	9.0 V DC	9.0 V DC
Basic current ¹⁾	10.0 mA	10.0 mA	10.0 mA
Δ Error current ¹⁾	3.0 mA	3.0 mA	3.0 mA
Start current after 10 ms	= basic current	= basic current	= basic current
External supply	Yes (AC 100 ... 230 V, AC/DC 24 V)	Yes (AC 100 ... 230 V, AC/DC 24 V)	Yes (AC 100 ... 230 V, AC/DC 24 V)

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters	
	
FEP500 ProcessMaster	
Data sheet	DS/FEP500-EN COM/FEX300/FEX500/FF-EN
Internet	www.abb.com/flow
Application	The Electromagnetic Flowmeter is used in the chemical industry, power, industrial water/waste water, oil & gas, pulp & paper and metals & mining, with its modular design offers the industry's widest range of liners, electrodes and sizes for process applications, incl. extended diagnostic functions: see FEH500 Accuracy: 0.3 % of rate, Option: 0.2 % of rate Range: DN 3 ... 2000 (1/10 ... 80")
Ambient temperature	(-40) -25 ... 60 °C
Type of protection	IP 65/67 (IP 68)
Explosion protection	Zone 1 ... 2 or Div 1 ... 2
Approvals	IECEX, ATEX, cFMus
FISCO approval	Yes
For FNICO usable	Yes
Overvoltage protection H1	—
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	000320-0124-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT071300 (ITK version 5.2.0)
Bus address	16 ... 247
local adjustment	—
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	Yes
Resource Block (RB)	1 RB (Standard)
Transducer Block (TB)	5 TB (Customized): Flow, deviceinfo, special function, display, diagnostic
Function Block (FB)	4 AI (Enhanced): Q flowrate, int. totalizer fwd., Int. totalizer rev., diagnostics, 1 AO (Standard): Density adjust, 1 PID (Enhanced) 1 INT (Standard), 1 DI (Standard): Diag info, 1 DO (Standard): Cyclic control
FB Execution time	AI/AO/PID/INT/DI/DO = 25 ms
Device configuration	—
central adjustment	EDD
local adjustment	Keypad, DIP switches, display
Asset Monitor	Yes (for ABB Tools)
U _s min.	9.0 V DC
Basic current ¹⁾	10.0 mA
Δ Error current ¹⁾	3.0 mA
Start current after 10 ms	= basic current
External supply	Yes (AC 100 ... 230 V, AC/DC 24 V)

Flowmeters			
Diagnosis data to increase the plant availability	 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message	FEH300, FEP300	FEH500, FEP500
Generic fieldbus diagnosis			
(see page 20)			
- plus - Advanced diagnosis			
Device functionality			
Distorted communication to sensor memory	•	•	
FRAM / ROM / RAM error in the transmitter	•••	•••	
Sensor memory not detected	•	•	
AD converter overloaded	•	•	
... Further diagnosis data see manual	...	...	
Device configuration			
Different simulations - active	••	••	
External output switch-off - active	•	•	
Display value < 1600 h for Qmax	•	•	
External totalizer - stop / - reset	••	••	
Last valid value is retained.	•	•	
Sensor & Tx series are incompatible	•	•	
An alarm is being simulated	•	•	
Installation and Process			
Flow > 103 %	•	•	
Empty pipe	•	•	
Partially filled pipe (TFE)	•	•	
Electrical impedance - too high		•	
Conductivity - alarm		•	
Electrode deposit - alarm		•	
Gas bubble - alarm		•	
Pulse output overshoot	•	•	
Sensor temperature - alarm		•	

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters	
	
FV4000, FS4000	
Data sheet	D184S035U02 D184B093U24
Internet	www.abb.com/flow
Application	Vortex and Swirl Flowmeter. For vapor, gas and liquids Vortex: $\leq \pm 1\%$ of rate for gases $\leq \pm 0.75\%$ of rate for liquids Swirl: $\leq \pm 0.5\%$ of rate <u>Measuring medium temperature:</u> Wirbel: $-55 \dots 280\text{ °C} / 400\text{ °C}$ Swirl: $-55 \dots 280\text{ °C}$ <u>Range:</u> Vortex: DN 15 ... 300 Swirl: DN 15 ... 400
Ambient temperature	$-30 \dots 70\text{ °C}$
Type of protection	IP 67
Explosion protection	II 2G Ex ia IIC T4
Approvals	ATEX 556309 X, IECEx CoC TUN 10.0028 X
FISCO approval	Yes
For FNICO usable	Yes
Overvoltage protection H1	—
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	000320-0015-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT017300 (ITK version 4.61)
Bus address	16 ... 247
local adjustment	—
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	Yes
Resource Block (RB)	1 RB (Standard)
Transducer Block (TB)	1 TB (Customized): Flow
Function Block (FB)	2 AI (Standard): Volume flow, totalizer, temperature
FB Execution time	AI = 50 ms
Device configuration	—
central adjustment	EDD
local adjustment	Keypad, DIP switches, display
Asset Monitor	Yes (for ABB Tools)
U _s min.	9.0 V DC
Basic current ¹⁾	10.0 mA
Δ Error current ¹⁾	3.0 mA
Start current after 10 ms	= basic current
External supply	—

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters		
Diagnosis data to increase the plant availability	FV4000, FS4000	
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message		
Generic fieldbus diagnosis		
(see page 20)		
- plus - Advanced diagnosis		
Device functionality		
Backup database - faulty	•	
Main database - faulty	•	
Preamplifier - error	•	
Totalizer - defect	•	
Temperature measurement - error	•	
Device configuration		
Vapor calculation - error	•	
Function test pulse output	•	
Function test contact output	•	
Function test simulation of flow	•	
Installation and Process		
Flow > 115 % of QmaxDN	•	
Flow > 115 % of Qmax	•	
Max. / min. temperature - alarm	••	
Max. / min. flow - alarm	••	

Flowmeters	
	
FCM2000 CoriolisMaster	
Data sheet	D184S068U02 D184B093U34
Internet	www.abb.com/flow
Application	Coriolis Mass Flowmeter <u>Multivariable Measurement:</u> - Mass flow (up to 0.1 %) - Density (5 g/l or 1 g/l) - Temperature (-50 ... 200 °C) <u>Special applications:</u> - Concentration measurement <u>Size range:</u> DN 1.5 ... DN 150 Variable Ex concept
Ambient temperature	-40 ... 60 °C
Type of protection	IP 67
Explosion protection	Zone 0 ... 2 or Div 1 ... 2
Approvals	CE, IECEx, ATEX, cFMus, NEPSI
FISCO approval	Yes
For FNICO usable	Yes
Overvoltage protection H1	—
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	000320-0018-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT045500 (ITK version 5.0)
Bus address	16 ... 247
local adjustment	—
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	Yes
Resource Block (RB)	1 RB (Enhanced)
Transducer Block (TB)	1 TB (Customized): Flow
Function Block (FB)	6 AI: Mass, volume flow, density, temperature, volume mass totalizer 1 PID (Enhanced): Controller block
FB Execution time	AI = 25 ms, PID = 50 ms
Device configuration	—
central adjustment	EDD
local adjustment	Keypad, DIP switches, display
Asset Monitor	Yes (for ABB Tools)
U _s min.	9.0 V DC
Basic current ¹⁾	14.0 mA
Δ Error current ¹⁾	12.0 mA
Start current after 10 ms	= basic current
External supply	Yes (230 V AC, 24 V AC / DC, < 25 VA)

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters		
Diagnosis data to increase the plant availability	FCM2000	
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message		
Generic fieldbus diagnosis		
(see page 20)		
- plus - Advanced diagnosis		
Device functionality		
Internal / external FRAM - error	••	
DSP communication - error	•	
AD converter - error	•	
Sensor / sensor amplitude - error	••	
Driver / driver current - error	••	
Sensor A / B / C - error	•••	
Device configuration		
External data loaded	•	
Update internal / external data	••	
Simulation	•	
Installation and Process		
Density measurement - error	•	
Density <0.5 kg/l	•	
Pipe / housing temp. measurem. - error	•	
Flow rate > 105 %	•	
Totalizer mass >F / <R	••	
Totalizer volume >F / <R	••	
Min. / max. alarm Qm	••	
Min. / max. alarm density	••	
Min. / max. alarm temperature	••	
Reverse Q	•	
Overflow >F / <R mass	••	
Overflow >F / <R volume	••	

	Flowmeters				
					
	FPD500 OriMaster (V2/V4)	FPD510 IOMaster (V2)	FPD550 PitotMaster (V2)		
Data sheet	DS/FPD500-EN	DS/FPD510-EN	DS/FPD550-EN		
Internet	www.abb.com/flow	www.abb.com/flow	www.abb.com/flow		
Application	Compact orifice flowmeter for steam, gas and liquids <u>Accuracy:</u> ±1.5 ... 2 % <u>Size range:</u> DN25 ... DN300 Order code: V2/V4 via 266Dxx (PdP) transmitter	Compact integral orifice flowmeter for steam, gas and liquids <u>Accuracy:</u> ±1.5 ... 2 % <u>Size range:</u> DN15 ... DN25 Order code: V2 via 266Dxx (PdP) transmitter	Compact averaging pitot flowmeter for steam, gas and liquids <u>Accuracy:</u> ±1.5 ... 2 % <u>Size range:</u> DN100 ... DN600 Order code: V2 via 266Dxx (PdP) transmitter		
Ambient temperature	-40 ... 85 °C	-40 ... 85 °C	-40 ... 85 °C		
Type of protection	IP 67, NEMA 4X	IP 67, NEMA 4X	IP 67, NEMA 4X		
Explosion protection	II 1 G Ex ia IIC T6 & II 1/2 G Ex ia IIC T6 (-40 °C ≤ Ta ≤ +40 °C); II 1 D Ex iaD 20 T 95 °C & II 1/2D Ex iaD 21 T 95 °C. II 1/2 G Ex d IIC T6 & II 1/2 D Ex tD A21 IP67 T 85 °C. II 3 G Ex nL IIC T6 & II 3 D Ex tD A22 IP67 T 85 °C, XP/IS/NI/DIP Class I, II or III Div.1 or 2				
Approvals	CE, ATEX, GOST, PED	CE, ATEX, GOST, PED	CE, ATEX, GOST, PED		
FISCO approval	Yes	Yes	Yes		
For FNICO usable	Yes	Yes	Yes		
Overvoltage protection H1	Yes (integrated)	Yes (integrated)	Yes (integrated)		
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)		
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix	31.25 kBit/s fix		
Device ID	V2/V4=000320-0007-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]				
FF Registration	V2/V4=IT066000 (ITK 5.2.0)				
Bus address	16 ... 247	16 ... 247	16 ... 247		
local adjustment	Keypad and display	Keypad and display	Keypad and display		
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)		
Backup LAS	Details see pressure (PdP) transmitter <u>Order code:</u> V2/V4 via 266Dxx (PdP) transmitt	Details see pressure (PdP) transmitter <u>Order code:</u> V2 via 266Dxx (PdP) transmitt	Details see pressure (PdP) transmitter <u>Order code:</u> V2 via 266Dxx (PdP) transmitt		
Resource Block (RB)					
Transducer Block (TB)					
Function Block (FB)					
FB Execution time					
Device configuration					
central adjustment	EDD	EDD	EDD		
local adjustment	Keypad and display	Keypad and display	Keypad and display		
Asset Monitor	Yes (for ABB Tools)	Yes (for ABB Tools)	Yes (for ABB Tools)		
U _s min.	9.0 V DC	9.0 V DC	9.0 V DC		
Basic current ¹⁾	15.0 mA	15.0 mA	15.0 mA		
Δ Error current ¹⁾	5.0 mA	5.0 mA	5.0 mA		
Start current after 10 ms	= basic current	= basic current	= basic current		
External supply	—	—	—		

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters	
	
FPD570 WedgeMaster (V2)	
Data sheet	DS/FPD570-EN
Internet	www.abb.com/flow
Application	Compact wedge flowmeter for steam, gas and liquids <u>Accuracy:</u> ±1.5 ... 2 % <u>Size range:</u> DN25 ... DN150 Order code: V2 via 266Dxx (PdP) transmitter
Ambient temperature	-40 ... 85 °C
Type of protection	IP 67, NEMA 4X
Explosion protection	See FPD500
Approvals	CE, ATEX, GOST, PED
FISCO approval	Yes
For FNICO usable	Yes
Overvoltage protection H1	Yes (integrated)
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	See FPD500
FF Registration	See FPD500
Bus address	16...247
local adjustment	Keypad and display
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	Details see pressure (PdP) transmitter <u>Order code:</u> V2 via 266Dxx (PdP) transmitter
Resource Block (RB)	
Transducer Block (TB)	
Function Block (FB)	
FB Execution time	
Device configuration	EDD
central adjustment	
local adjustment	Keypad and display
Asset Monitor	Yes (for ABB Tools)
U _s min.	9.0 V DC
Basic current ¹⁾	15.0 mA
Δ Error current ¹⁾	5.0 mA
Start current after 10 ms	= basic current
External supply	—

¹⁾ Max. permanent current = basic current + Δ error current

Flowmeters		
Diagnosis data to increase the plant availability	FPD5x0 (V2/V4)	
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message		
Generic fieldbus diagnosis		
(see page 20)		
- plus - Advanced diagnosis		
Device functionality		
Pressure sensor - failed	•	
Temperature sensor - failed	•	
Static pressure sensor - Failed	•	
Wrong or missing primary sensor signals	•	
Sensor memory fail	•	
Sensor memory burn failure	•	
Sensor not detected	•	
Electronics memory fail	•	
Electronics memory burn failure	•	
Sensor and electronics incompatible	•	
Sensor and electronics interface error	•	
Sensor or electronics replacement failures	•	
Installation and Process		
Sensor overpressure	•	
Pressure out of sensor Limits	•	
Static pressure out of sensor limits	•	
Sensor temperature out of operating limits	•	
Static pressure over than installation enviromental limits	•	
Pressure out of range	•	
Simulation active	•	
Plugged impulse line detected - line H plugged - line L plugged - lines H and L plugged - one undetected line plugged	•	
New PILD training required	•	

Analyzer			
			
	TB82EC	TB82TC	TB82TE
Data sheet	D-NCA-TB82	D-NCA-TB82	D-NCA-TB82
Internet	www.abb.com/analytical-instruments	www.abb.com/analytical-instruments	www.abb.com/analytical-instruments
Application	Process Analytics - Solution Conductivity <u>Process Display Range:</u> Sensor Group A: 0.0 µS/cm ... 1999 mS/cm B: 0.00 µS/cm ... 1999 µS/cm C: 0.000 µS/cm ... 199.9 µS/cm <u>Concentration:</u> 0.000 ... 1999 Digits (EU configurable) <u>Temperature:</u> -20 ... 300 °C	Process Analytics - Solution Conductivity <u>Process Display Range:</u> 1 µS/cm ... 1999 mS/cm <u>Concentration:</u> 0.000 ... 1999 Digits (EU configurable) <u>Temperature:</u> -20 ... 300 °C	Process Analytics - Solution Conductivity <u>Process Display Range:</u> Sensor Cell Constant 0.01: 0.001 µS/cm ... 199.9 µS/cm 0.10: 0.01 µS/cm ... 1999 µS/cm 1.00: 0.1 µS/cm ... 19.99 mS/cm <u>Concentration:</u> 0.000 ... 1999 Digits (EU configurable) <u>Temperature:</u> -20 ... 300 °C
Ambient temperature	-20 ... 60 °C	-20 ... 60 °C	-20 ... 60 °C
Type of protection	IP 65, NEMA 4X	IP 65, NEMA 4X	IP 65, NEMA 4X
Explosion protection	Ex ia IIC T4, Class I Division 1 up to Class II Division 2, Class III	Ex ia IIC T4, Class I Division 1 up to Class II Division 2, Class III	Ex ia IIC T4, Class I Division 1 up to Class II Division 2, Class III
Approvals	CE, ATEX, FM, CSA	CE, ATEX, FM, CSA	CE, ATEX, FM, CSA
FISCO approval	—	—	—
For FNICO usable	Yes	Yes	Yes
Overvoltage protection H1	Yes (integrated)	Yes (integrated)	Yes (integrated)
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000320-0051-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0053-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0052-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT016200 (ITK version 4.01)	IT019300 (ITK version 4.51)	IT018100 (ITK version 4.01)
Bus address	16 ... 247	16 ... 247	16 ... 247
local adjustment	—	—	—
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	—	—	—
Resource Block (RB)	1 RB (Standard)	1 RB (Standard)	1 RB (Standard)
Transducer Block (TB)	1 TB (Customized): With calibration and function generator, used for the secondary variable (solute concentration)	1 TB (Customized): With calibration and function generator, used for the secondary variable (solute concentration)	1 TB (Customized): With calibration and function generator, used for the secondary variable (solute concentration)
Function Block (FB)	2 AI (Standard): AI1 / AI2 - Conductivity, concentration, temperature or uncompensated conductivity	2 AI (Standard): AI1 / AI2 - Conductivity, concentration, temperature or uncompensated conductivity	2 AI (Standard): AI1 / AI2 - Conductivity, concentration, temperature or uncompensated conductivity
FB Execution time	AI = 150 ms	AI = 100 ms	AI = 100 ms
Device configuration	—	—	—
central adjustment	EDD or module for FF Device	EDD or module for FF Device	EDD or module for FF Device
local adjustment	Keypad and display	Keypad and display	Keypad and display
Asset Monitor	Yes (for ABB Tools)	Yes (for ABB Tools)	Yes (for ABB Tools)
U _s min.	9.0 V DC	9.0 V DC	9.0 V DC
Basic current ¹⁾	15.0 mA	15.0 mA	15.0 mA
Δ Error current ¹⁾	10.0 mA	10.0 mA	10.0 mA
Start current after 10 ms	= basic current	= basic current	= basic current
External supply	—	—	—

¹⁾ Max. permanent current = basic current + Δ error current

Analyzer	
	
TB82PH	
Data sheet	D-NPA-TB82PH
Internet	www.abb.com/analytical-instruments
Application	Process Analytics - pH/ORP/pION <u>Process Display Range:</u> pH: -2 ... 16 pH ORP: -1999 ... 1999 mV pION: -1999 ... 1999 mV <u>Temperature:</u> -20 ... 300 °C
Ambient temperature	-20 ... 60 °C
Type of protection	IP 65, NEMA 4X
Explosion protection	Ex ia IIC T4, Class I Division 1 up to Class II Division 2, Class III CE, ATEX, FM, CSA
Approvals	–
FISCO approval	–
For FNICO usable	Yes
Overvoltage protection H1	Yes (integrated)
Physics	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix
Device ID	000320-0050-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT016100 (ITK version 5.0.1)
Bus address	16 ... 247
local adjustment	–
central adjustment	Software (e. g.: Asset Vision)
Backup LAS	–
Resource Block (RB)	1 RB (Standard)
Transducer Block (TB)	1 TB (Customized): With calibration and function generator
Function Block (FB)	2 AI (Standard): AI1 / AI2 - PV (pH, ORP or pION), temperature, sensor input, reference impedance or function generator value
FB Execution time	AI = 50 ms
Device configuration	–
central adjustment	EDD
local adjustment	Keypad and display
Asset Monitor	Yes (for ABB Tools)
U _s min.	9.0 V DC
Basic current ¹⁾	15.0 mA
Δ Error current ¹⁾	10.0 mA
Start current after 10 ms	= basic current
External supply	–

¹⁾ Max. permanent current = basic current + Δ error current

Analyzer				
Diagnosis data to increase the plant availability				
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message	TB82EC	TB82TC	TB82TE	TB82PH
Generic fieldbus diagnosis				
(see page 20)				
- plus - Advanced diagnosis				
Device functionality				
Electronics failure	•	•	•	•
Incorrect input PCB	•	•	•	•
Process calibration offset / zero warning				•
Process calibration slope warning				•
Calibration mode				•
Device configuration				
Reference impedance limit				•
Calibration - error	•	•	•	•
AI1 / AI2 simulation - active	••	••	••	••
Installation und Prozess				
Low pH measuring electrode impedance				•
High reference electrode impedance				•
Ground loops present or shorted sensor cable	•			•
Open sensor cable or sensor out of solution				•
Temperature out of limits	•	•	•	•
PV out of limits	•	•	•	•
Temperature sensor failure	•	•	•	•
Dirty sensor alarm	•			
Polarized sensor			•	

	Level measurement		
			
	AT100	AT100S	AT200
Data sheet	AT100-0202-1	AT100S-0202-1	DS/AT200-EN
Internet	www.abb.com/level	www.abb.com/level	www.abb.com/level
Application	High accuracy magnetostrictive level transmitter for level and/or interface measurement. Insertion type transmitter. <u>Range:</u> 304.8 mm to 22.3 m <u>Accuracy:</u> 0.01 % of full scale <u>Repeatability:</u> 0.005 % of full scale <u>Update rate:</u> 10 per second	High accuracy magnetostrictive level transmitter for level and/or interface measurement. Sanitary insertion type transmitter. <u>Range:</u> 304.8 mm to 9.14 m <u>Accuracy:</u> 0.01 % of full scale <u>Repeatability:</u> 0.005 % of full scale <u>Update rate:</u> 10 per second	High accuracy magnetostrictive level transmitter for level and/or interface measurement. External mount type transmitter. <u>Range:</u> 304.8 mm to 15.24 m <u>Accuracy:</u> 0.01 % of full scale <u>Repeatability:</u> 0.005 % of full scale <u>Update rate:</u> 10 per second
Ambient temperature	-40 ... 77 °C	-40 ... 77 °C	-40 ... 77 °C
Type of protection	IP 67, NEMA 4X	IP 67, NEMA 4X	IP 67, NEMA 4X
Explosion protection	Ex d IIC T6, Ex ia IIC T4; XP/II/1/ABCD T6; IS/II/1/ABCD T4; NI/II/2/ABCD T4	Ex d IIC T6, Ex ia IIC T4; XP/II/1/ABCD T6; IS/II/1/ABCD T4; NI/II/2/ABCD T4	Ex d IIC T6, Ex ia IIC T4; XP/II/1/ABCD T6; IS/II/1/ABCD T4; NI/II/2/ABCD T4
Approvals	ATEX, IEC, FM, CSA, NEPSI, Gost R	ATEX, IEC, FM, CSA, NEPSI, Gost R	ATEX, IEC, FM, CSA, NEPSI, Gost R
FISCO approval	Yes	Yes	Yes
For FNICO usable	—	—	—
Overvoltage protection H1	Yes (optional)	Yes (optional)	Yes (optional)
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000101-0100-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000101-0100-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000101-0100-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT060800 (ITK version 5.1.0)	IT060800 (ITK version 5.1.0)	IT060800 (ITK version 5.1.0)
Bus address	16 ... 255	16 ... 255	16 ... 255
local adjustment	Keypad and display	Keypad and display	Keypad and display
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	Yes	Yes	Yes
Resource Block (RB)	1 RB (Standard)	1 RB (Standard)	1 RB (Standard)
Transducer Block (TB)	1 TB - Channels: Level, level 2, temperature*, linearized level 1* & 2* (* = optional)	1 TB - Channels: Level, level 2, temperature*, linearized level 1* & 2* (* = optional)	1 TB - Channels: Level, level 2, temperature*, linearized level 1* & 2* (* = optional)
Function Block (FB)	5 AI - Level 1, level 2, temperature*, linearized level 1* & 2* 5 PID blocks* (* = optional)	5 AI - Level 1, level 2, temperature*, linearized level 1* & 2* 5 PID blocks* (* = optional)	5 AI - Level 1, level 2, temperature*, linearized level 1* & 2* 5 PID blocks* (* = optional)
FB Execution time	AI / PID = 100 ms	AI / PID = 100 ms	AI / PID = 100 ms
Device configuration	—	—	—
central adjustment	EDD	EDD	EDD
local adjustment	Keypad and display	Keypad and display	Keypad and display
Asset Monitor	—	—	—
U _s min.	9.0 V DC	9.0 V DC	9.0 V DC
Basic current ¹⁾	12.8 mA	12.8 mA	12.8 mA
Δ Error current ¹⁾	12.8 mA	12.8 mA	12.8 mA
Start current after 100 ms	= basic current (13.8 mA for ≤100 ms)	= basic current (13.8 mA for ≤100 ms)	= basic current (13.8 mA for ≤100 ms)
External supply	—	—	—

¹⁾ Max. permanent current = basic current + Δ error current

	Level measurement		
			
	MT5000	MT5100	MT5200
Data sheet	MT5000-0202-1	MT5100-0202-1	MT5200-0202-1
Internet	www.abb.com/level	www.abb.com/level	www.abb.com/level
Application	Guided wave radar transmitter for liquid level measurement <u>Range:</u> 0.6 ... 66 m <u>Level Accuracy:</u> ±3 mm coax probes, ±5 mm for all others <u>Update rate:</u> 2 per second minimum dielectric constant 1.4	Guided wave radar transmitter for level and interface measurement <u>Range:</u> 0.6 ... 19.8 m <u>Level Accuracy:</u> ±3 mm coax probes, ±5 mm for all others <u>Interface accuracy:</u> ±25 mm <u>Update rate:</u> 2 per second minimum dielectric constant 1.4	Guided wave radar transmitter for low dielectric liquid and bulk solids measurement <u>Range:</u> 0.6 ... 30.6 m <u>Level Accuracy:</u> ±3 mm coax probes (liquids only), ±5 mm for all others <u>ULD mode accuracy:</u> ±25 mm minimum dielectric constant 1.3
Ambient temperature	-40 ... 85 °C	-40 ... 85 °C	-40 ... 85 °C
Type of protection	IP 67, NEMA 4X	IP 67, NEMA 4X	IP 67, NEMA 4X
Explosion protection	Ex d IIC T6, Ex ia IIC T4; XP/II/1/ABCD T6; IS/II/1/ABCD T4; NI/II/2/ABCD T4	Ex d IIC T6, Ex ia IIC T4; XP/II/1/ABCD T6; IS/II/1/ABCD T4; NI/II/2/ABCD T4	Ex d IIC T6, Ex ia IIC T4; XP/II/1/ABCD T6; IS/II/1/ABCD T4; NI/II/2/ABCD T4
Approvals	ATEX, IEC, FM, CSA, NEPSI, Gost R	ATEX, IEC, FM, CSA, NEPSI, Gost R	ATEX, IEC, FM, CSA, NEPSI, Gost R
FISCO approval	Yes	Yes	Yes
For FNICO usable	—	—	—
Overvoltage protection H1	Yes (optional)	Yes (optional)	Yes (optional)
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000101-5000-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000101-5000-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000101-5000-xxxxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT070200 (ITK version 5.2.0)	IT070200 (ITK version 5.2.0)	IT070200 (ITK version 5.2.0)
Bus address	16 ... 255	16 ... 255	16 ... 255
local adjustment	Keypad and display	Keypad and display	Keypad and display
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	Yes	Yes	Yes
Resource Block (RB)	1 RB (Standard)	1 RB (Standard)	1 RB (Standard)
Transducer Block (TB)	1 TB - Channels: Level, linearized level	1 TB - Level, interface, linearized level, linearized interface	1 TB - Level, linearized level
Function Block (FB)	3 AI - Level, linearized level, module temperature 5 PID blocks 1 Characterization block	5 AI - Level, interface, module temperature, linearized level, linearized interface; 5 PID blocks, 1 Characterization block	3 AI - Level, linearized level, module temperature 5 PID blocks 1 Characterization block
FB Execution time	AI/PID/TRD = 500 ms, Char = 47 ms	AI/PID/TRD = 500 ms, Char = 47 ms	AI/PID/TRD = 500 ms, Char = 47 ms
Device configuration	—	—	—
central adjustment	EDD	EDD	EDD
local adjustment	Keypad and display	Keypad and display	Keypad and display
Asset Monitor	—	—	—
U _s min.	9.0 V DC	9.0 V DC	9.0 V DC
Basic current ¹⁾	15.8 mA	15.8 mA	15.8 mA
Δ Error current ¹⁾	15.8 mA	15.8 mA	15.8 mA
Start current after 100 ms	= basic current (16.8 mA for ≤100 ms)	= basic current (16.8 mA for ≤100 ms)	= basic current (16.8 mA for ≤100 ms)
External supply	—	—	—

¹⁾ Max. permanent current = basic current + Δ error current

Temperature Transmitter		
		
	TTH300	TTF300
Data sheet	DS/TTH300-EN	DS/TTF300-EN
Internet	www.abb.com/temperature	www.abb.com/temperature
Application	Head mounted transmitter <u>RTD:</u> Pt10, Pt50, Pt100, Pt200, Pt1000, Ni50, Ni100, Ni120, Ni1000 <u>Thermocouple:</u> Type B, C, D, E, J, K, L, N, R, S, T, U <u>Voltage:</u> -125 ... 125 mV / -125 ... 1,100 mV <u>Resistance:</u> 0 ... 500 Ω / 0 ... 5,000 Ω Customer Specific Curve Callendar Van Dusen Coefficients	Field mounted transmitter <u>RTD:</u> Pt10, Pt50, Pt100, Pt200, Pt1000, Ni50, Ni100, Ni120, Ni1000 <u>Thermocouple:</u> Type B, C, D, E, J, K, L, N, R, S, T, U <u>Voltage:</u> -125 ... 125 mV / -125 ... 1,100 mV <u>Resistance:</u> 0 ... 500 Ω / 0 ... 5,000 Ω Customer Specific Curve Callendar Van Dusen Coefficients
Ambient temperature	(-50) -40 ... 85 °C	(-50) -40 ... 85 °C
Type of protection	IP 20	IP 67
Explosion protection	II 1G Ex ia IIC T6	II 1G Ex ia IIC T6
Approvals	CE, ATEX, IECEx, FM, CSA	CE, ATEX, IECEx, FM, CSA
FISCO approval	Yes	Yes
For FNICO usable	Yes	Yes
Overvoltage protection H1	—	—
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000320-0125-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0125-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT0066100 (ITK version 5.2.0)	IT0066100 (ITK version 5.2.0)
Bus address	16 ... 247	16 ... 247
local adjustment	Keypad and display	Keypad and display
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	Yes	Yes
Resource Block (RB)	1 RB (Standard)	1 RB (Standard)
Transducer Block (TB)	3 TB (Standard): Temperature, HMI (LCD display), enhanced diagnosis	3 TB (Standard): Temperature, HMI (LCD display), enhanced diagnosis
Function Block (FB)	4 AI (Standard): Calculated value, sensor 1 or 2, reference junction, 1 AO (Standard): Display value, 1 PID (Enhanced), 2 DI (Standard): Extended diagnostic 1 & 2	
FB Execution time	All = 25 ms	All = 25 ms
Device configuration	central adjustment	
local adjustment	Keypad and display	Keypad and display
Asset Monitor	Yes (for ABB Tools)	Yes (for ABB Tools)
U _s min.	9.0 V DC	9.0 V DC
Basic current ¹⁾	12.0 mA	12.0 mA
Δ Error current ¹⁾	8.0 mA	8.0 mA
Start current after 10 ms	= basic current	= basic current
External supply	—	—

¹⁾ Max. permanent current = basic current + Δ error current

Temperature Transmitter	
Diagnosis data to increase the plant availability	TTH300, TTF300
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message	
Generic fieldbus diagnosis	
(see page 20)	
- plus - Advanced diagnosis	
Device functionality	
Sensor drift	•
Sensor 1 - line resistance too high	•
Sensor 1 - short circuit	•
Sensor 1 - wire break	•
Sensor 2 - line resistance too high	•
Sensor 2 - short circuit	•
Sensor 2 - wire break	•
Device temperature out of spec.	•
Device error	•
Sensor 1 + 2 redundancy - failure	•
Sensor 1 redundancy - short circuit	•
Sensor 1 redundancy - wire break	•
Sensor 2 redundancy - short circuit	•
Sensor 2 redundancy - wire break	•
Device configuration	
Device not calibrated	•
Device being simulated	•
Configuration error	•
Installation and Process	
Sensor 1 measurement range - overflow, - underflow	••
Sensor 2 measurement range - overflow, - underflow	••

Positioner		
		
	TZIDC-120	TZIDC-220
Data sheet	10/18-0.24-EN	10/18-0.34-EN
Internet	www.abb.com/measurement	www.abb.com/measurement
Application	Intelligent Positioner Precise control of positioning with pneumatic linear and rotary actuators. Interference due to shock and vibration < 1 % ... 10 g. <u>Control pressure:</u> 0 ... 6 bar <u>Housing material:</u> Aluminum	Intelligent Positioner Flameproof enclosure Precise control of positioning with pneumatic linear and rotary actuators. Interference due to shock and vibration < 1 % ... 10 g. <u>Control pressure:</u> 0 ... 6 bar <u>Housing material:</u> Aluminum
Ambient temperature	-40 ... 85 °C	-40 ... 85 °C
Type of protection	IP 65, NEMA 4X	IP 65, NEMA 4X
Explosion protection	II 2G Ex ia IIC T6 resp. T4 Gb II 3G Ex n A II T6 esp. T4 Gc	II 2G Ex d IIC T6 Gb II 2G Ex ia IIC T6 resp. T4 Gb
Approvals	CE, ATEX, FM, CSA, IECEx, GOST	CE, ATEX, FM, CSA, IECEx, GOST
FISCO approval	Yes	Yes
For FNICO usable	Yes	Yes
Overvoltage protection H1	—	—
Physics	MBP(-IS) (IEC 61158-2)	MBP(-IS) (IEC 61158-2)
Baud rate	31.25 kBit/s fix	31.25 kBit/s fix
Device ID	000320-0028-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	000320-0028-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]
FF Registration	IT023200 (ITK version 4.51)	IT023200 (ITK version 4.51)
Bus address	16 ... 247	16 ... 247
local adjustment	—	—
central adjustment	Software (e. g.: Asset Vision)	Software (e. g.: Asset Vision)
Backup LAS	Yes	Yes
Resource Block (RB)	1 RB (Enhanced)	1 RB (Enhanced)
Transducer Block (TB)	1 TB (Customized): Configuration, parameterization, diagnosis, monitoring, signaling	1 TB (Customized): Configuration, parameterization, diagnosis, monitoring, signaling
Function Block (FB)	1 AO (Standard): Setpoint value, position value, RCAS_IN, RCAS_OUT 1 PID (Enhanced): Controller block	1 AO (Standard): Setpoint value, position value, RCAS_IN, RCAS_OUT 1 PID (Enhanced): Controller block
FB Execution time	AO = 40 ms, PID = 50 ms	AO = 40 ms, PID = 50 ms
Device configuration		
central adjustment	EDD	EDD
local adjustment	Push Buttons and display	Push Buttons and display
Asset Monitor	Yes (for ABB Tools)	Yes (for ABB Tools)
U _s min.	9.0 V DC	9.0 V DC
Basic current ¹⁾	11.5 mA	11.5 mA
Δ Error current ¹⁾	3.5 mA	3.5 mA
Start current after 10 ms	= basic current	= basic current
External supply	—	—

Positioner	
Diagnosis data to increase the plant availability	TZIDC-120, TZIDC-220
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message	
Generic fieldbus diagnosis	
(see page 20)	
- plus - Advanced diagnosis	
Device functionality	
Device error	•
Position sensor malfunction	•
Installation and Process	
Working range adjustment required	•
Position sensor out of range	•
Auto adjustment failed	•
Position controller not ready for operation (inactive)	•
Position out of working range	•
Mechanical end position exceeded	•
Positioning monitoring time exceeded	•
Temperature limit exceeded	•
Cumulated time: Temperature limit exceeded	•
Movement counter limit exceeded	•
Travel counter limit exceeded	•
Switch point 1 exceeded	•
Switch point 2 exceeded	•
Simulation active	•
Local operation active	•

¹⁾ Max. permanent current = basic current + Δ error current

	Linking Device	Power supply	
			
	LD 800HSE	NFP310, NGP310, NGP312	NFP310, NGP310, NGP312
Data sheet	3BDD011675Rxx01	DS/NEL-EN	DS/NEL-EN
Internet	www.abb.com/fieldbus	www.abb.com/fieldbus	www.abb.com/fieldbus
Application	Redundant Linking Device for High Speed Ethernet (HSE) and FF-H1. - HSE profile class 42c; - Configuration of H1 devices via HSE; - Republishing of process data and distribution of alarms; - Link Master capability; - 4 H1 interfaces; - HSE interface: 10BaseT/100BaseTX (autosensing)	Power supply <u>simplex</u> . Unit supplies 1-4 FOUNDATION fieldbus-H1 segments. Modular construction with 1x Motherboard, 1-4x Power Supply modules for up to 4x 31 H1 devices and 1x diagnostic module. Building on a DIN rail and in Ex (Haz.) Zone 2. H1 segment diagnostic via additionally Diagnostic gateway and DTM.	Power supply <u>redundant</u> . Unit supplies 1-4 FOUNDATION fieldbus-H1 segments. Modular construction with 1x Motherboard, 1-4(+1-4)x Power Supply modules for up to 4x 31 H1 devices and 1x diagnostic module. Building on a DIN rail and in Ex (Haz.) Zone 2. H1 segment diagnostic via additionally Diagnostic gateway and DTM.
Ambient temperature	5 ... 55 °C	-40 ... 60 °C	-40 ... 60 °C
Type of protection	IP 20	IP 20	IP 20
Explosion protection	—	II 3G Ex nA II T4, II 3G Ex nAC IIC T4	II 3G Ex nA II T4, II 3G Ex nAC IIC T4
Approvals	CE, cUL	CE, ATEX, FM	CE, ATEX, FM
FISCO approval	—	—	—
For FNICO usable	—	—	—
Overvoltage protection H1	—	—	—
Physics	IEEE803.2/IEC 61158-2	MBP (IEC 61158-2)	MBP (IEC 61158-2)
Baud rate	100 Mbit/s (HSE) <-> 31.25 kBit/s (H1)	31.25 kbit/s (H1)	31.25 kbit/s (H1)
Device ID	000320-0067-xxxxxxx [MANUFAC_ID]-[DEV_TYPE]-[Counter]	transparent	transparent
FF Registration	CT0054FF, PT-081	—	—
Bus address	H1: 16 ... 19, HSE: any IP address	Only when using the diagnostic DIP switch (at Diagnostic gateway)	Only when using the diagnostic DIP switch (at Diagnostic gateway)
local adjustment	—	—	—
central adjustment	Software (e. g.: FBB FF, CBF)	—	—
Backup LAS	Yes	—	—
Resource Block (RB)	—	—	—
Transducer Block (TB)	—	—	—
Function Block (FB)	—	—	—
FB Execution time	—	—	—
Device configuration	Software (e. g.: Fieldbus Builder FF, Control Builder F)	—	—
central adjustment	—	—	—
local adjustment	—	—	—
Asset Monitor	Yes (for ABB Tools)	—	—
U _s min.	—	19.2 V DC	19.2 V DC
U and I Output	No	1. U _s : 25 ... 28 V DC / I _s : ≤ 360 mA 2. U _s : 28 ... 30 V DC / I _s : ≤ 500 mA	1. U _s : 25 ... 28 V DC / I _s : ≤ 360 mA 2. U _s : 28 ... 30 V DC / I _s : ≤ 500 mA
Ex e	(External H1 power supply required)	—	—
U and I Output	No	—	—
Ex i (IS)	(External H1 power supply required)	—	—
External supply	Yes (24 V DC (±20 %), typ. 200 mA)	Yes (19.2 ... 35 V DC, ≤ 16 A)	Yes (19.2 ... 35 V DC, ≤ 16 A)

	Network components , Accessories for MBP(-IS)																		
	Junctions							Con- nector		Cables						Overvoltage protection			
	NGB900	NPJ130-NO	NPJ460-NO	NPJ130-EX	NPJ460-EX	NPZ100-EX	NGJ100-NE family	NFE100-NE	NFE300-NE	NFC080-NO	NFC150-NO	NFC250-NO	NFC080-EX	NFC150-EX	NFC250-EX	NGV210-NO & NGV211-NO	NGV210-EX & NGV211-EX	NGV220-NO	NGV220-EX
Data sheet	1)	10/63-6.60-EN							10/63-6.67-EN						10/63-6.15-EN				
Installation suggestion	10/63-0.50-EN																		
Internet	www.abb.com/fieldbus																		
For hazardous areas	•			•	•	•													
For Non-Haz. areas	•	•	•				•												
IP 20							•												
IP 66		•	•	•	•	•													
IP 67	•																		
Bus termination incl.	•	•	•				•												
Bus termination ext. (via NPZ100-EX)				•	•														
Bus termination for hazardous areas						•													
One-way (T) junction		•		•			•												
Four-way junction	•		•		•		•												
X-way junction							•												
Output - cable bushing	•	•	•	•	•														
Output - socket 7/8"																			
For hazardous area and Non-Haz. area								•	•										
Plug 7/8"								•											
Socket 7/8"									•										
Metal housing								•	•										
For hazardous areas																			
2 x 0.88 mm ² (AWG18/7)										•				•	•	•			
2 x 1.30 mm ² (AWG16/7)											•				•				
2 x 2.10 mm ² (AWG14/7)												•				•			
For hazardous areas																			
Top-hat rail mounting, IP 20																•	•		•
Cable gland mounting, M20 x 1.5, IP 67																		•	

1) DS/NGB-EN

For all		
Diagnosis data to increase the plant availability	All function blocks	
 = Maintenance req.  = Out of specification  = Check function  = Failure  = No message		
Generic fieldbus diagnosis		
Device functionality		
Others	•	
Local override	•	
Device fault state - set	•	
Device needs maintenance - soon	•	
Device needs maintenance - now	•	
Output failure detected by this block, device failure	•	
Memory - failure	•	
Lost static data	•	
Lost NV data	•	
Read back check - failed	•	
Power up	•	
Out of service (block)	•	
Device configuration		
Block configuration - error	•	
Link configuration - error	•	
Simulation - active	•	
Installation and Process		
Sensor failure detected by this block, sensor failure	•	

Notes

Notes

Notes

Contact us

ABB Automation Products GmbH

Borsigstr. 2
63755 Alzenau
Germany

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

www.abb.com

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HMI – Automação e Instrumentação, Lda.

Travessa da Indústria, nº 111
4780-573 Santo Tirso
PORTUGAL

Tel. +351 252 850 501
Fax. +351 300 013 487

Web: www.hmi.pt

Email: hmi@hmi.pt