

DP820

ABB Ability™ System 800xA® hardware selector



DP820 is a two-channel pulse counting module for incremental pulse transmitters up to 1.5 MHz. Each channel contains counters and registers for position/length and speed/frequency measurement. Each channel provides three balanced inputs for connection of a pulse transmitter, one digital input and one digital output. Pulse transmitters with RS422, +5 V, +12 V, +24 V and 13 mA interfaces can be connected to DP820.

Use DP820 with Module Termination Units TU810V1, TU812V1, TU814V1, TU830V1, TU833.

Features and benefits

- Two channels
- Interface for RS422, 5 V, 12 V, 24 V and 13 mA transducer signal levels
- Simultaneous pulse count and frequency measurement
- Pulse count (length/position) by accumulation in a bidirectional 29 bit counter
- Frequency (speed) measurement 0.25 Hz - 1.5 MHz

General info	
Article number	3BSE013228R1
Type	Pulse counter
Signal specification	24 V d.c. (12 - 32 V d.c.)
Number of channels	2
HART	No
SOE	No
Redundancy	No
High integrity	No
Intrinsic safety	No
Mechanics	S800

Detailed data	
Input impedance	2.5 kΩ (DI-input)
Isolation	Individually isolated, channel-to-channel and to circuit common
Error	Max. frequency measurement error Relative error Absolute error (Temperature drift included): $[320/(\text{MEASTIME} \text{ in ms})]$ ppm $[(320/(\text{MEASTIME} \text{ in ms}) + 100)]$ ppm
Current limiting	Sensor power can be current limited by the MTU
Maximum field cable length	200 meters (218 yards)
Rated insulation voltage	50 V
Dielectric test voltage	500 V a.c.
Power dissipation	2.5 W
Current consumption +5 V Modulebus	120 mA
Current consumption +24 V Modulebus	0
Current consumption +24 V external	0

Diagnostics	
Front LED's	P(pulse)X, UP (direction), ST(robe), DI, SY(nch), DO, TP (transm. power OK), all per channel
Supervision	Process voltage per channel
Status indication of supervision	Module Error, Module Warning, Channel error

Environment and certification	
CE mark	Yes
Electrical safety	EN 61010-1, UL 61010-1, EN 61010-2-201, UL 61010-2-201
Hazardous Location	C1 Div 2 cULus, C1 Zone 2 cULus, ATEX Zone 2
Marine certification	ABS, BV, DNV, LR
Temperature, Operating	0 to +55 °C (+32 to +131 °F), approvals are issued for +5 to +55 °C
Temperature, Storage	-40 to +70 °C (-40 to +158 °F)
Pollution degree	Degree 2, IEC 60664-1
Corrosion protection	ISA-S71.04: G3
Relative humidity	5 to 95 %, non-condensing
Max ambient temperature	55 °C (131 °F), for vertical mounting in compact MTU 40 °C (104 °F)
Protection class	IP20 according to IEC 60529
Mechanical operating conditions	IEC/EN 61131-2
EMC	EN 61000-6-4 and EN 61000-6-2
Overvoltage categories	IEC/EN 60664-1, EN 50178
Equipment class	Class I according to IEC 61140; (earth protected)
RoHS compliance	DIRECTIVE/2011/65/EU (EN 50581:2012)
WEEE compliance	DIRECTIVE/2012/19/EU

Compatibility	
Use with MTU	TU810, TU812, TU814, TU830 or TU833
Keying code	CB

Dimensions	
Width	45 mm (1.77")
Depth	102 mm (4.01"), 111 mm (4.37") including connector
Height	119 mm (4.7")
Weight	0.15 kg (0.33 lbs.)

Related products



TU810V1



TU812V1



TU814V1



TU830V1



TU833

solutions.abb/800xA
solutions.abb/controlsystems

800xA and Symphony Plus is a registered trademark of ABB. All rights to other trademarks reside with their respective owners.

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2025 ABB All rights reserved