ABB ABB Series Service Manual

DP820

1. Description

DP820 is an 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.

3. Product Information

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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

MTUs that match this product

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TU810V1

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/(MEASTIMEx in ms)] ppm [(320/(MEASTIMEx 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(ulse)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.)