ABB DP840 Manual

Brand	ABB
Product Series	ABB
Product Type	Pulse counter

Description

The DP840 module consists of 8 identical independent channels. Each channel can be used for pulse count or frequency (speed) measurement, maximum 20 kHz. The inputs can also be read as DI signals. Each channel has a configurable input filter. The module perform self-diagnostics cyclically. With advanced diagnostics, for single or redundant applications. Interface for NAMUR, 12 V and 24 V. The input can be read as digital input signals.

Use DP840 with Module Termination Units TU810V1, TU812V1, TU814V1, TU830V1, TU833.

Features and benefits
8 channels
The modules can be used in both single and redundant applications
Interface for NAMUR, 12 V and 24 V transducer signal levels
Each channel can be configured for pulse count or frequency measurement
The inputs can also be read as DI signals
Pulse count by accumulation in a 16 bit counter
Frequency (speed) measurement 0.5 Hz - 20 kHz
Advanced on-board diagnostics
MTUs that match this product
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TU810V1

General info
Article number 3BSE028926R1
Type Pulse counter
Signal specification 24 V d.c. (19.2 - 32 V d.c.)
Number of channels 8
HART No
SOE No
Redundancy Yes
High integrity No
Intrinsic safety No
Mechanics S800
Detailed data
Isolation Groupwise isolated from ground
Error Max relative error (4): PRIT = 10 ms: 300 ppm PRIT = 20 ms: 150 ppm PRIT = 50 ms: 60 ppm PRIT = 100 ms: 30 ppm Max error in crystal oscillator: 120 ppm + 5 ppm/year Max absolute error = rel. error + oscillator error (PRIT = 10 ms, age < 16 year): 500 ppm (= 0.05%)
Current limiting Built in current limited sensor power
Maximum field cable length 200 meters (218 yards)
Rated insulation voltage 50 V

Dielectric test voltage 500 V a.c.
Power dissipation 4 W
Current consumption +5 V Modulebus 115 mA
Current consumption +24 V external NAMUR = 56 + 0.5 x external load [mA] 12 V = 89 + 0.7 x external load [mA] 24 V = 97 + external load [mA]
Diagnostics
Front LED’s F(ault), R(un), W(arning), P(rimary), Channel 1-8 P(ulse) and F(ault)
Supervision Process voltage
Loop supervision
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 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, TU818, TU830, TU833, TU842, TU843, TU844, TU845, TU852, TU854
Keying code CF
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)