IOP302

4-20 mA Analog Input Module

PUBLISHED IDENTITY

Metso IOP302 is a maxPAC common analog input module that accepts sixteen 4-20 mA channels. It supplies individually fused 24 V transmitter loop power through the backplane and transfers converted input data to the DPU.

Technical snapshot

Module type	4-20 mA common analog input module
Input channels	16 common current-input channels
Input span	4 to 20 mA
Transmitter loop supply	24 V from the backplane, individually fused per channel
DPU4A/B mode	16 addresses and 15 available channels
DPU4E mode	2 addresses and 16 available channels
Frequency-selection jumper	W1 installed for 50 Hz; removed for 60 Hz
DPU-selection jumper	W6 installed for DPU4A/B; removed for DPU4E

Verified related ApterPower product pages

Metso PDP601

ABB DI811 3BSE008552R1

Engineering data

Official evidence organized for exact-model review

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Input channels	16 common current-input channels
Input span	4 to 20 mA
Transmitter loop supply	24 V from the backplane, individually fused per channel
DPU4A/B mode	16 addresses and 15 available channels
DPU4E mode	2 addresses and 16 available channels
Frequency-selection jumper	W1 installed for 50 Hz; removed for 60 Hz
DPU-selection jumper	W6 installed for DPU4A/B; removed for DPU4E
Conversion method	Sigma-delta oversampling with one A/D per channel

Resolution	15 bits plus sign
Scan rate	20 ms
Accuracy	±0.1% of reading at 25 °C
Input impedance	300 ohms
Normal-mode voltage	50 V
Normal-mode rejection	60 dB at 50/60 Hz
Input power	125 mA from the 24 V system supply
Calibration	Self-calibration at power-up and periodically online
Field connectors	P2 for channels 1-8; P3 for channels 9-16

EVIDENCE BOUNDARY

Confirm the complete IOP302 marking, installed DPU type, W1/W6 jumper positions and every P2/P3 field connection before energization.

Applications and system role

Four distinct documented operating contexts

SIXTEEN-LOOP CURRENT ACQUISITION

Collects sixteen common 4-20 mA field signals through one maxPAC analog input module.

DPU4E INPUT EXPANSION

Provides all sixteen channels while occupying two bus addresses in the documented DPU4E mode.

DPU4A/B CABINET SERVICE

Supports the legacy operating mode with fifteen available channels and sixteen assigned addresses.

CONTROLLED ANALOG-MODULE REPLACEMENT

Restores recorded jumper, address and P2/P3 wiring arrangements before functional testing.

Integration control

The installed DPU determines the address and channel arrangement: DPU4A/B operation uses sixteen addresses for fifteen channels, while DPU4E operation uses two addresses for all sixteen channels. The W1 and W6 jumpers, P2/P3 field connections, loop-power path and bus position must therefore be preserved during replacement. Commissioning should confirm the Active LED state, diagnostic codes, channel readings and the intended 50/60 Hz rejection setting.

Verified related ApterPower product pages

ABB TU831V1 3BSE013235R1

ABB DSBC174 3BSE012211R1

Technical questions

Complete model-specific answers from the approved evidence set

How many current inputs does Metso IOP302 provide?

Metso IOP302 provides sixteen common 4-20 mA analog input channels in its DPU4E operating mode.

Which address arrangement applies when Metso IOP302 operates with DPU4A/B?

The DPU4A/B configuration assigns sixteen addresses to Metso IOP302 and makes fifteen input channels available.

What changes when Metso IOP302 is configured for DPU4E?

DPU4E operation reduces the Metso IOP302 address requirement to two while enabling all sixteen channels.

How does jumper W6 configure Metso IOP302?

Jumper W6 selects the DPU interface: the installed position is for DPU4A/B, and the removed position is for DPU4E.

Which frequency setting is controlled by W1 on Metso IOP302?

W1 configures Metso IOP302 for 50 Hz rejection when installed and for 60 Hz rejection when removed.

How is transmitter loop power distributed by Metso IOP302?

The backplane supplies 24 V transmitter power to Metso IOP302, and an individual electronic fuse protects each channel's loop-power path.

What conversion performance is specified for Metso IOP302?

Metso IOP302 uses sigma-delta oversampling with one A/D per channel, 15-bit-plus-sign resolution and a 20 ms scan rate.

Which checks complete commissioning of Metso IOP302?

Commissioning should confirm the DPU mode, W1/W6 positions, P2/P3 channel mapping, Active LED behavior, diagnostic status and every used 4-20 mA input.

Product precautions

Eight aligned controls before return to service

1. Record the complete Metso IOP302 marking, rack position and DPU type.
2. Place every connected 4-20 mA loop and the controller in the approved maintenance state.
3. Isolate the 24 V system and transmitter-loop supplies before moving field wiring.
4. Label all P2 and P3 conductors so channels 1-16 retain their recorded assignments.
5. Match W6 to DPU4A/B or DPU4E operation and restore the correct bus-address plan.
6. Set W1 for the installed 50 Hz or 60 Hz rejection requirement.
7. Inspect the individually fused loop-power paths, connectors and channel wiring before energization.
8. Review the Active LED, diagnostic code behavior and every used channel value before release.

Verified related ApterPower product pages

- ABB SR511 3BSE000863R1
- Allen-Bradley 2711P-RN15S
- Allen-Bradley 1762-L40BWA
- Allen-Bradley 2711P-B15C22D9P

Evidence and support

Manufacturer references, related products and direct contact

Manufacturer evidence used

- Metso Automation maxPAC Hardware Reference Guide, publication 277596, Chapter 3.
- Metso Automation IOP302 module operation, diagnostics and specification tables.
- Metso Automation IOP302 P2/P3 field-wiring diagrams.

Verified related ApterPower product pages

Fuji Electric 2MBI600VXA-120E-51

Fuji Electric NP1L-TMB

ABB 07KR91 GJR5250000R0101

ABB 07DI92

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ABB 07EB62R1 GJV3074342R1

ABB 07KP60R101 GJV3074360R101