

3805E

Eight-Point 4-20 mA Analog Output Module

Triconex 3805E is an eight-point TMR analog output module. It generates voted 4-20 mA commands for field control loops and supervises output-current integrity.

PRODUCT SNAPSHOT

BRAND

Triconex

FAMILY

Tricon v9-v10 analog output

PART

3805E

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PRODUCT OVERVIEW

Triconex 3805E is an eight-point TMR analog output module. It generates voted 4-20 mA commands for field control loops and supervises output-current integrity.

1 Votes three internal channels and selects a healthy channel to drive eight current loops

2 Monitors each current output with loopback diagnostics independent of the field load

3 Supports redundant external loop-power sources with PWR1 and PWR2 indication

4 Reports open-loop conditions through the module LOAD diagnostic

SYSTEM COMPONENTS

9853-610 or 9861-610 termination panel

24-42.5 VDC loop-power source

Tricon main and I/O chassis

4-20 mA field loads

RELATED PRODUCTS ON APTER POWER

MODEL	SYSTEM ROLE	APTER POWER PAGE
Triconex 3664	Dual Digital Output Module	Open product page
Triconex 9662-610	24 VDC Digital Output Termination Panel	Open product page
Triconex 3008	Main Processor Module	Open product page
Triconex 8312	230 VAC Power Module	Open product page

TECHNICAL DATA

PARAMETER	VALUE
Module type	TMR analog output
Output points	8
Output current	4 to 20 mA (+6% overrange)
Return arrangement	Commoned return; DC coupled
Resolution	12 bit
Output accuracy	<0.25% FSR, 0 to 60 degC
External loop power	24 VDC nominal; 42.5 VDC maximum
Loop-power current	1 A minimum
Load at >20 VDC	250 Ohm

PARAMETER	VALUE
Load at >25 VDC	500 Ohm
Load at >30 VDC	750 Ohm
Load at >35 VDC	1000 Ohm
Oversrange protection	+42.5 VDC continuous
Leg-failure switch time	<10 ms typical
Indicators	PASS; FAULT; ACTIVE; LOAD; PWR1; PWR2
Compatible basic panel	9853-610
Compatible nonincendive panel	9861-610

TECHNICAL NOTE

Match 3805E to the documented termination panel and redundant loop-power arrangement, then command controlled output values and verify measured current, LOAD status, and leg-failure behavior.

APPLICATIONS & PRECAUTIONS

COMMON APPLICATIONS

Safety-related control-valve command loops

Votes three internal channels and selects a healthy channel to drive eight current loops

Voted analog setpoint delivery

Monitors each current output with loopback diagnostics independent of the field load

Redundant loop-power output cabinets

Supports redundant external loop-power sources with PWR1 and PWR2 indication

Online hot-spare analog-output maintenance

Reports open-loop conditions through the module LOAD diagnostic

PRODUCT PRECAUTIONS

- 1 Verify 3805E and the assigned analog-output slot before removing the module.
- 2 Place every connected final element in its approved safe maintenance condition.
- 3 Isolate both external loop-power sources and record PWR1/PWR2 polarity.
- 4 Confirm the field load and loop voltage remain inside the published operating table.
- 5 Keep the commoned return and termination-panel wiring unchanged during replacement.
- 6 Use ESD controls and inspect the keyed module and backplane connectors.
- 7 Command several current points across the operating range and compare measured loop current.
- 8 Clear LOAD or FAULT indications and prove the intended process response before service.

ENGINEER FAQ

Q1 How should an engineer verify 9853-610 current-output termination for 3805E?

Use the approved connection drawing and the model-specific values in Tricon Systems Technical Product Guide; preserve the as-found terminal, connector, polarity, shield, and channel identity.

Q3 Which installation error is most important to prevent on 3805E?

Do not interchange 3805E with an adjacent execution or alter its matched 9853-610 or 9861-610 termination panel; the exact electrical, channel, and connector arrangement must be retained.

Q5 Which diagnostics should be reviewed after installing 3805E?

Review the applicable point, module, power, communication, or load indicators for 3805E, then confirm the intended role: votes three internal channels and selects a healthy channel to drive eight current loops.

Q7 What evidence should be retained after hot-spare current-loop commissioning testing on 3805E?

Retain the full 3805E identity, as-left connections or settings, final diagnostics, measured functional-test result, and authorization to return the affected process function to service.

Q2 What check is required for loop-power and load-resistance pairing when commissioning 3805E?

Apply a controlled signal or command within the documented range and compare the field result, controller indication, and product diagnostics before normal operation.

Q4 How is LOAD diagnostic investigation handled during a 3805E replacement?

Record the installed state first, isolate the associated process function, reproduce only the approved model-specific arrangement, and verify it before energization.

Q6 Can 3805E be substituted for a similar Triconex model without a configuration review?

No. Confirm the exact model, companion hardware, signal execution, system version, and approved configuration before any substitution.

Q8 Which installed hardware must be matched before fitting 3805E?

Match 3805E to 9853-610 or 9861-610 termination panel and 24-42.5 VDC loop-power source, then confirm the complete physical marking and assigned Tricon v9-v10 analog output position.