

The 1241-15 option and 1242-15 (configured for two single resolvers only) can perform all of the functions of the standard 1241 and 1242 modules and also includes a fault output that can be programmed to activate on any or all of the following conditions.

- If there is a module fault
- If there is a transducer fault
- If the motion detect time is exceeded
- If the stop time is exceeded

Input

The two Input terminals accept a 24Vdc or a 120Vac signal across the two terminals. The input is bipolar, that is, positive voltage can be applied to either pin. The following table shows the input's specifications.

	DC	AC
On State	10 to 30Vdc	79 to 132Vac
Off State	0 to 2Vdc	0 to 2Vac
Current Draw	5mA @ 24Vdc	10mArms @ 120Vac

The input has two functions.

First, it measures the time between when power is removed and when the resolver's shaft stops moving. This is the *Stop Time* of the press and can be used to measure brake wear. The resolver position where the signal was removed is also captured and placed in the input registers. This is the *Brake Applied Position*.

The second function of the input is to check for resolver's shaft movement when power is applied (brake released). This is the Motion Detect function and is used to determine if the press is moving when the brake is released. Motion is detected by measuring the time it takes for the resolver position to change more than 4 counts out of 8192 counts/turn.

A message instruction can be used to program the 1241-15 and 1242-15 modules and either enable or disable both the Stop Time and Motion Detect functions.

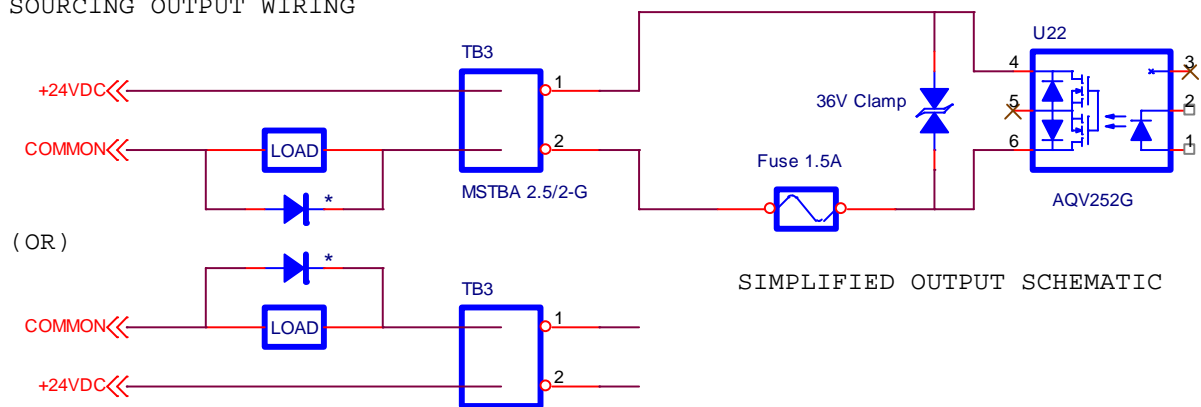
Fault Output

The 1241-15 and 1242-15 module's fault output use negative logic. That is, it is on (conducting) when there is no fault, and off (not conducting) when there is a fault. The Fault Output has the following specifications.

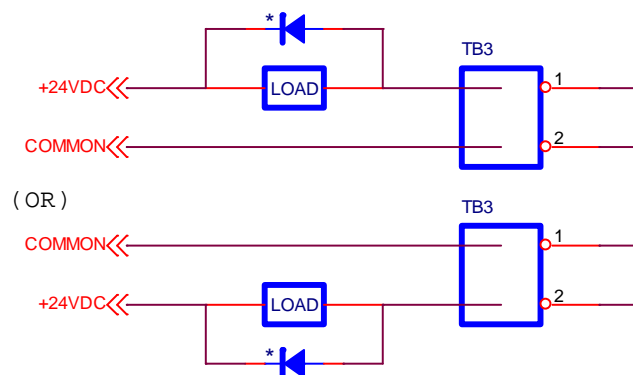
Output Type:	DC Voltage, Sinking or Sourcing, Opto-Isolated
Nominal Voltage:	12/24 Vdc
Operating Range:	10 to 30 Vdc
Rated Load Current:	1A Continuous
Short Circuit (Overcurrent) Protection:	1.5A Fuse
Oversvoltage Protection:	Yes (Current limited)

Output Wiring Diagrams

SOURCING OUTPUT WIRING



SINKING OUTPUT WIRING



* NOTE: ANTI-PARALLEL (FLY-BACK) DIODE OR SIMILAR SURGE SUPPRESSION DEVICE IS REQUIRED WHEN SWITCHING INDUCTIVE LOADS

Input Status Bits

Three new status bits have been added to the status bits in input word 0. They are bits 8, 10, and 11. The functions and descriptions of the remaining status bits have not changed and can be found in the standard 1241 and 1242 module manuals.

Status Word (Input Word 0)

Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 09	Bit 08	Bit 07	Bit 06	Bit 05	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
Acknowledge Bit	Velocity at Zero ch 2	Velocity at Zero ch 1	Brake Input State	Stop Time Error	Motion Detect Error	0	Fault Output State	0	0	0	0	0	Transducer Fault ch 2	Transducer Fault ch 1	Module Error

Bit 8: Fault Output State: “0” when the output is conducting
“1” when the output is open

Bit 10: Motion Detect Error: This bit will be set when the time it takes for the resolver position to change by more than 4 counts out of 8192 counts/turn exceeds the Motion Detect Time programmed into the module. It is possible to program the 1241-15 module so that only this bit will be set if a Motion Detect Error is detected. That is, the Fault Output will not be affected by a Motion Detect Error.

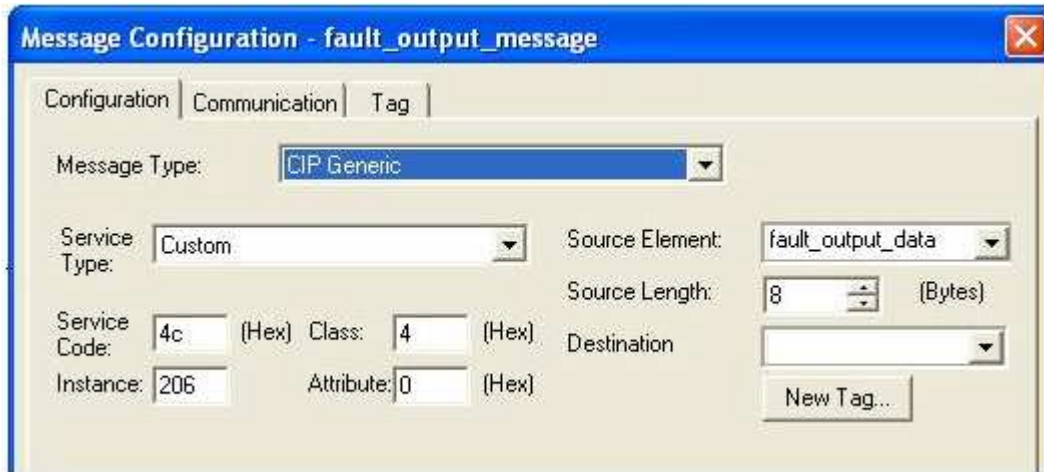
Bit 11: Stop Time Error: This bit will be set when the time between when the brake was applied and motion stopped exceeded the Stop Time programmed into the module. It is possible to program the 1241-15 module so that only this bit will be set if a Stop Time Error is detected. That is, the Fault Output will not be affected by a Stop Time Error.



The Clear Error Message instruction (Instance 205) can be used to reset the Motion Detect and Stop Time Error bits.

Fault Output Setup Message Instruction

A new message instruction has been added to the 1241-15 and 1242-15 modules. This message instruction sends four 16 bit words from the PLC to the 1200-15 module and is used to configure the Stop Time, Motion Detect, and how the fault output will be used. The following image shows the parameters used to configure this message instruction.



The following table shows the four 16 bit words used to configure how the 1200-15 module's fault output will be used.

16 Bit Word	Function	Range
0	Setup Bits	See Description Below
1	Maximum Stop Time	0 or 34 to 32767ms 0 to disable Stop Time test
2	Maximum Motion Detect Time	0 or 34 to 32767ms 0 to disable Motion Detect test
3	Reserved	Must be zero

Setup Bits

Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 09	Bit 08	Bit 07	Bit 06	Bit 05	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
Fault Output State when PLC is in Program Mode	0	0	0	Fault on Stop Time Error	Fault on Motion Detect	0	0	0	0	0	0	0	Fault on Transducer Fault ch 2	Fault on Transducer Fault ch 1	Fault on Module Fault



1200-15 Option

Resolver input module with brake input and fault output

- bit 0 = Set to have the fault output turn off when there is a Module Fault. The 1200-15 module will leave the factory configured to have the Fault Output turn off if there is a Module Fault.
- bit 1 = Set to have the fault output turn off when there is a Transducer Fault on channel 1. The fault output will not turn back on if the transducer fault condition is removed because the module has been programmed to be self clearing. That is, you must send the clear error command to cause the Fault Output to turn back on.
- Bit 2 = reserved on 1241-15 modules, must be zero.

On 1242-15 modules, set to have the fault output turn off when there is a Transducer Fault on channel 2. The fault output will not turn back on if the transducer fault condition is removed because the module has been programmed to be self clearing. That is, you must send the clear error command to cause the Fault Output to turn back on.

- bits 3 to 9 = reserved, must equal zero
- bit 10 = Set to have the fault output will turn off when the programmed Maximum Motion Detect Time is exceeded.
- bit 11 = Set to have the fault output turn off when the programmed Stop Time is exceeded.
- bits 12 to 14 = reserved, must equal zero
- bit 15 = Reset to zero to have the fault output remain in its last state when the PLC is switched from Run to Program Mode.

Set to 1 when the fault output will be off (not conducting) when the PLC is in Program Mode.

NOTE: When bit 15 is set to 1, and assuming that there are no other faults present, the Fault Output will automatically be reset, that is it will turn on, when the PLC switches from Program to Run Mode.

Extended Error Codes

The Message Instructions used to communicate with the 1200-15 module have an error register that can be used to obtain diagnostic information from the module. This register's address is *user_tag.exerr*. The following table shows the values that will be displayed in this register if the Fault Output Setup data sent to the 1200-15 module is not valid.

Extended Error Codes	Meaning
1	<ul style="list-style-type: none"> • Setting an unused bit in the setup word • Setting bit 2 in the setup word when using a 1241-15 module • Sending the Fault Output message instruction (instance 206) to a 1242 module configured for one dual resolver transducer
2	The stop time value is not 0 or within the 34 to 32767 range
3	The motion detect value is not 0 or within the 34 to 32767 range

- These error codes are only valid when register address *user_tag.err* is equal to 9.
- The Message Instructions Error bit and the Extended Error Code can only be cleared by sending valid data to the 1200-15 module.