Sure Coat® Modular Gun Control System

Part C:
Purge Timer Interface Card

Customer Product Manual
Part 334659B
Issued 4/03

For parts and technical support, call the Industrial Coating Systems Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

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Section C 1
Description

Introduction

The purge timer interface card allows an external PLC and the optional gun purge module to interface with the Sure Coat modular gun control system. The purge timer interface card is installed in slot 9 of the main control cabinet's card cage.

NOTE: The purge timer interface card allows the triggering controller or external PLC to control triggering functions of four groups of guns. Purging functions and individual gun set points cannot be controlled through the triggering controller or external PLC.

The purge timer interface card allows the Sure Coat modular gun control system to purge guns and trigger guns in groups through an external PLC.

I/O Signals

The purge timer interface card uses four input signals and one output signal to control triggering and purging.

Signal	Function
Inputs	The purge timer interface card can accommodate up to four inputs from the external PLC for triggering gun groups.
Outputs	The purge timer interface card has one output that controls the optional gun purge module. The output controls the purge panel's pilot air solenoid, which activates the gun purge module.

I/O Terminal Functions

Refer to Table C 1-1 and see Figure C 1-3 for a description of the functions of the inputs and outputs available on the purge timer interface card. Inputs and outputs are connected to the terminal blocks on the front edge of the purge timer interface card.

Table C 1-1 I/O Terminal Functions

Terminal	Type	Function	Terminal	Type	Function
1	Input	Trigger group C	7	Input	Trigger group D
2	Input	Trigger group A	8	Input	Trigger group B
3	N/A	Trigger common	9	Output	Gun purge (positive)
4	N/A	Chassis ground	10	Output	Gun purge (negative)
5	N/A	Not used	11	N/A	Not used
6	N/A	Not used	12	N/A	Not used

Theory of Operation

Triggering

The triggering controller or external PLC activates the purge timer interface card's trigger inputs in response to information from photo eyes or switches. When the photo eyes sense a large gap between parts, the guns turn off to conserve powder.

The guns may be programmed into four groups (A, B, C, and D) through the central control unit. Four PLC outputs may be wired to the four inputs on the interface card. The PLC outputs may be either current sinking outputs or relay contacts.

Trigger Signal	Description
Current Sinking	See Figure C 1-1. One of the sixteen inputs activates when a triggering controller/PLC output sinks current from the trigger input through the triggering controller/PLC output to the common ground, causing the corresponding gun to trigger.
Relay Contacts	See Figure C 1-2. One of the inputs activates when a triggering controller/PLC relay contact closes, which shorts the corresponding input together to the trigger common pin. When a trigger input is shorted to the trigger common pin, the gun associated with the corresponding input is triggered.

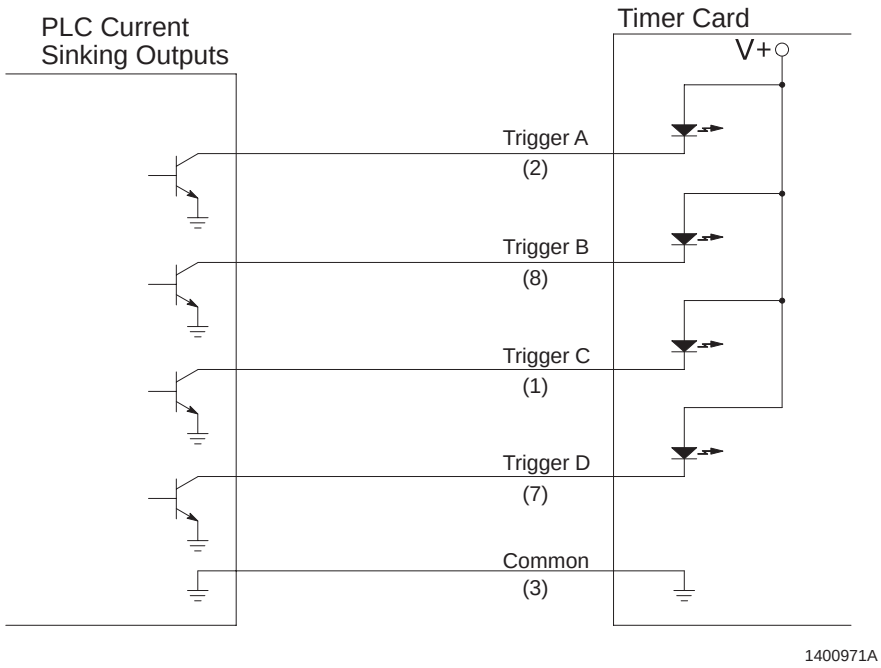

Figure C 1-1 PLC Current Sinking Operation Schematic

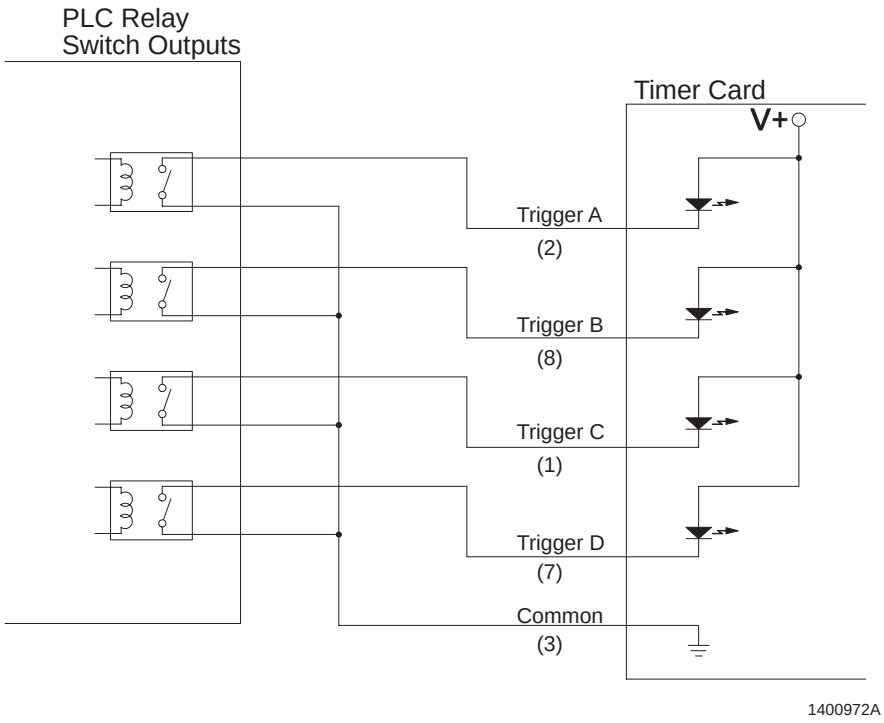

Figure C 1-2 PLC Relay Contact Operation Schematic

Purging

The purge output is wired to the purge panel solenoid numbered 1. The central control unit sends a command signal through the interface card to the purge panel solenoid. The solenoid opens, sending a pneumatic signal to activate the gun purge module.

The gun purge output is activated by pressing the GUN PURGE key on the central control unit. The gun purge function remains active for as long as the operator presses the GUN PURGE key.

LEDs

The four LEDs on the purge timer interface card indicate system status.

Refer to Table C 1-2 and see Figure C 1-3 for a description of the LEDs on the front edge of the purge timer interface card.

Table C 1-2 LED Identification

Item	Color	Function	Meaning
1	Red	Fault	Lit when there is no communication with the central control unit
2	Green	Status	Flashes when communicating properly with the central control unit
3	Green	Power	Lit when power is applied to the card
4	Yellow	Service	Lit continuously: Bad node hardware Flashes once every 2 seconds: Power up/reset Flashes repeatedly: Watchdog timer resets occurring Flashes once every second: Node is unconfigured Flashes once, then off continuously: Normal at startup

Switches

There are two push-button switches on the purge timer interface card. Refer to Table C 1-3 for a description of the switches.

NOTE: See Figure C 1-3. The switches are located behind the dials on the front edge of the card. The Reset switch is closest to the top of the card.

Table C 1-3 Switches

Switch	Function
Reset	Resets the interface card
Service	Informs the system that new software is installed.

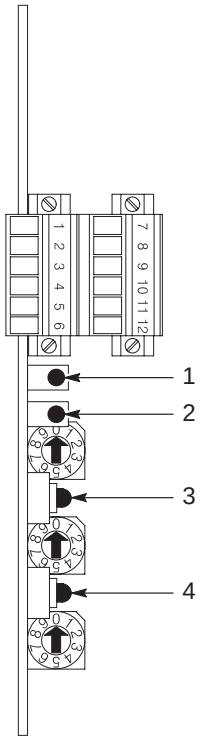

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Figure C 1-3 Purge Timer Interface Card Components

Specifications

Maximum voltage:	26.4 Vdc
Maximum current:	7.4 mA
Trigger/Auxiliary Input Type:	Current sinking, open collector/drain or relay/switch contact closure input
Input States:	Off: input high (open)
	On: input low (shorted to trigger input common)
Maximum On State Current:	5 mA
Maximum On State Voltage:	2.5 Vdc
Maximum Off State Current:	2 mA
Minimum Off State Voltage:	17.5 Vdc

Section C 2
Installation

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

WARNING: Risk of electric shock. Shut off and lock out system electrical power before performing the following procedures.

Installation

1. Open the main control cabinet door.

WARNING: This unit contains electrostatic sensitive devices (ESD). To prevent damage to ESD parts, wear a grounding wrist strap.

2. Orient the card in the position shown in Figure C 1-3.

   NOTE: The terminal blocks and dials must be facing the front of the main control cabinet.

3. Carefully slide the interface card into slot 9 of the main control cabinet's card cage.

Wiring

1. Make sure that the PLC and purge panel wiring is routed through the rubber grommet to the lower right of the card cage.
2. See Figure C 2-1. Connect the PLC and purge panel wires to the terminal blocks on the interface card in the sequence listed in Table C 2-1.

NOTE: Terminals 5, 6, 11, and 12 are not used.

Table C 2-1 Wiring

Terminal	Function	Terminal	Function
1	Trigger group C	7	Trigger group D
2	Trigger group A	8	Trigger group B
3	Trigger common	9	Gun purge—solenoid 1 (positive)
4	Chassis ground	10	Gun purge—solenoid 1 (negative)
5	Not used	11	Not used
6	Not used	12	Not used

Wiring *(contd)*

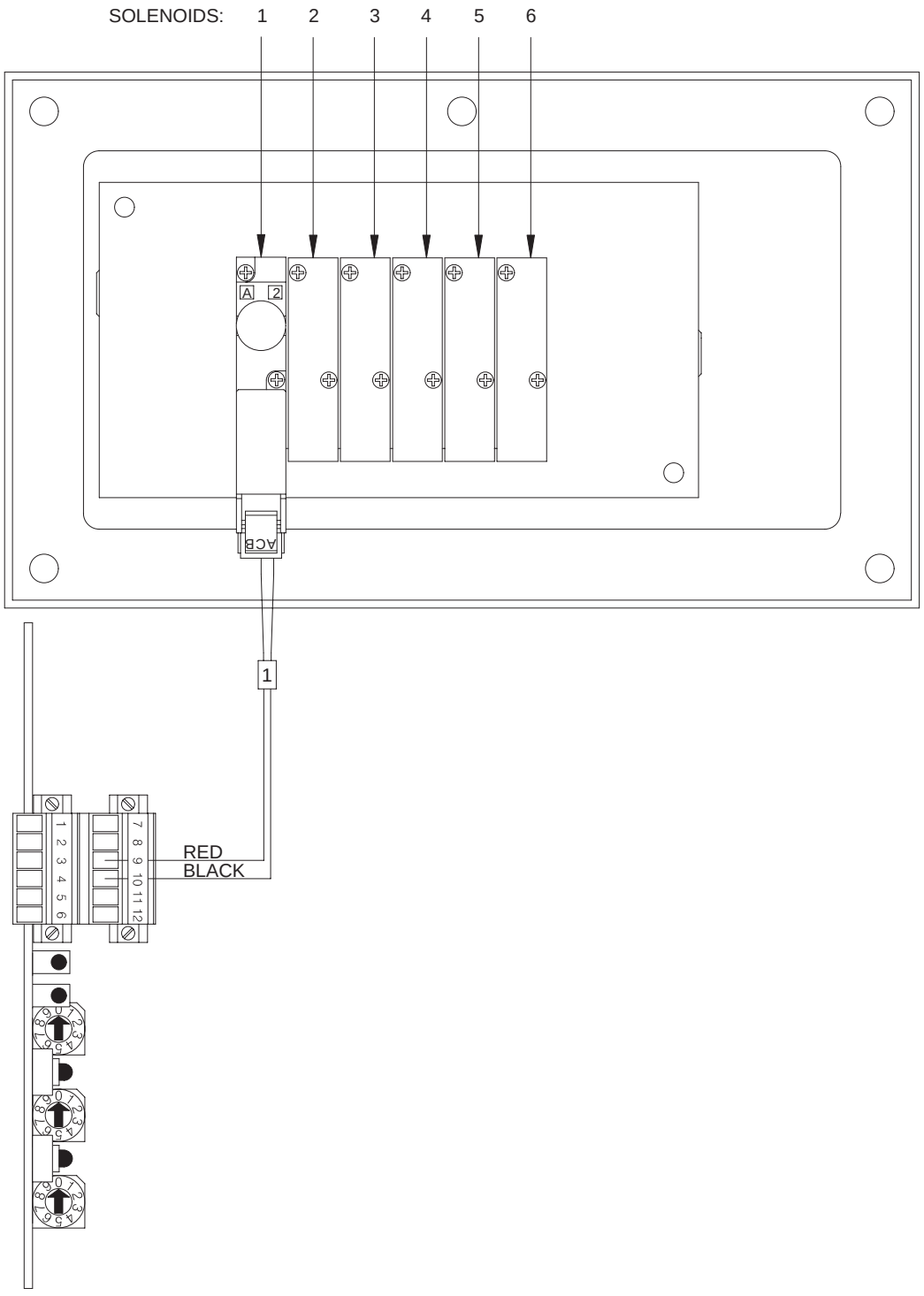

Figure C 2-1 Purge Timer Interface Card Wiring Diagram