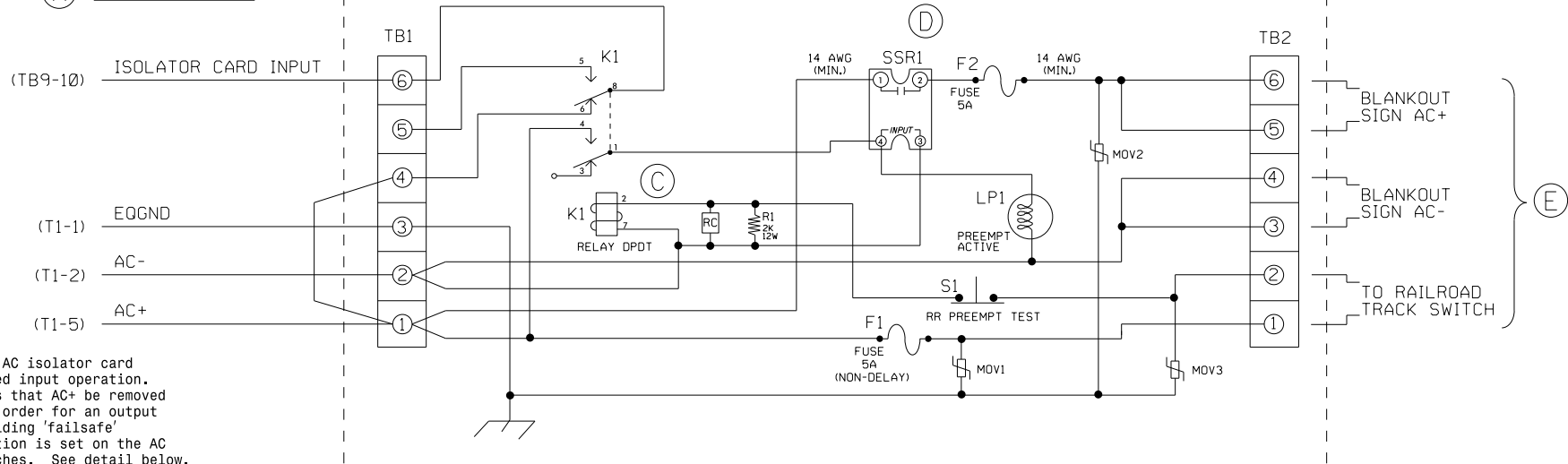


**(B) NOTES**

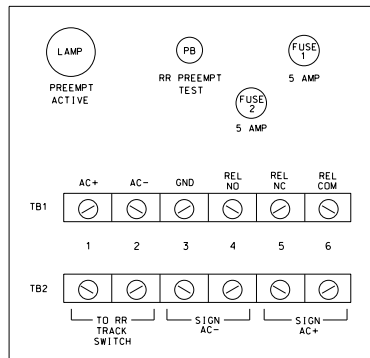
1. Relay K1 is shown in the energized (Preempt not active) normal operation state.
  2. Relay K1 is a DPDT with 120VAC coil with an octal base.
  3. Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
  4. AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card.
5. **IMPORTANT!!** A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

Note #4 indicates that the AC isolator card is to be set-up for inverted input operation. Inverted operation requires that AC+ be removed from the isolator input in order for an output to be generated, thus providing 'failsafe' operation. Inverted operation is set on the AC isolator card via dip switches. See detail below.

**(A) CABINET WIRING**

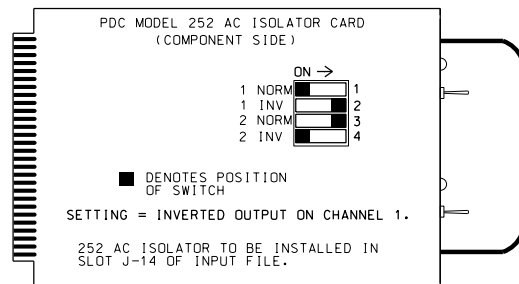


**FRONT VIEW**



**PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL**

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

**Explanation of major components:**

- (A) Cabinet wiring termination points - tells the installer where to make the connections in order to interface the box with the cabinet. These connections supply AC power to the box, as well as tie the preempt relay output to an AC isolator.
- (B) Notes section - describes the component types and part numbers used in the box. Any special wiring instructional notes are placed here.
- (C) Preempt relay - the coil of this relay (K1) is tied to the RR cabinet contacts which, when opened, indicate the presence of a train. When the RR contacts open, this relay de-energizes and removes AC+ from the isolator card, thus causing a preempt input to be placed on the controller. The other set of contacts on this relay cause AC+ to be applied to the input of SSR1 (which illuminates the blankout signs).
- (D) Blankout sign relay - this relay is a SPST, solid state relay which controls the illumination of the blankout signs. When this relay is activated by the preempt relay (K1), the signs will be switched "ON".
- (E) Field wiring termination points - tells the installer where the connections are made in order to interface the preempt box with the RR crossing signal equipment. Terminations for blankout sign AC+ and AC- are included here as well.

**2070 RR Preemption and Blankout Sign Control Box**

The 2070 Preemption and Blankout Sign Control Assembly/Box provides the following functionality:

1. Provides the interface between the railroad crossing signal equipment and the traffic signal equipment, which includes, termination points for the interconnect cable, surge protection, and termination points for blankout signs.
2. Provides an output which directs the controller to begin the preemption sequence. A test switch is present to manually test this output.
3. Provides the control circuitry for the operation of any blankout signs required by the preemption sequence. This circuitry allows the blankout signs to operate normally, even when cabinet is in the flash mode.

**2070 RR Preemption and Blankout Sign Control Box**

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## Preemption Programming Detail

### PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTION).

PREEMPTION #1	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 12 4.0 3.5	X X
2 255 0.0 0.0	X
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X X
EXIT CALLS	
OPTIONS	
PRIORITY (Y/N TO SELECT) .....	HIGH
DELAY TIMER (0-255 SEC) .....	0
MIN GREEN BEFORE PRE (0= DEFAULT)...	1
PED CLEAR BEFORE PRE (0= DEFAULT)...	0
YELLOW CLEAR BEFORE PRE (0= DEFAULT)...	4.0
RED CLEAR BEFORE PRE (0= DEFAULT)...	3.5
DWELL MIN TIMER (0-255 SEC) .....	7
DWELL MAX TIMER (0=OFF,1-255MIN) ....	0
DWELL HOLD-OVER TIMER (0-255) .....	0
LATCH CALL? .....	N
LINK TO NEXT PREEMPT? .....	N
ENABLE BACKUP PROTECTION? .....	N
HOLD CLEAR 1 PHASES DURING DELAY? ...	N
FAST GREEN FLASH DWELL PHASES? .....	N
PED CLEARANCE THROUGH YELLOW? .....	N
INHIBIT OVERLAP GREEN EXTENSION? ...	N
SERVICE DURING SOFTWARE FLASH? .....	N
REST IN RED DURING DWELL INTERVAL? ..	N
FLASH DWELL INTERVAL? .....	N
ALLOW PEDS IN DWELL INTERVAL? .....	N
RE-TIME DWELL INTERVAL? .....	N
OVERLAPS:	ABCDEFGHIJKLMNPO
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	

The image to the left is an exact duplication of the preempt programming display found on a 2070 controller running Oasis control software.

When a signal plan requires preemption, this detail is to be used on the electrical detail to instruct the installer on setting the different operational parameters required to operate the preempt sequence per the signal design plans.

Below is a brief description of the most commonly used features:

- Ⓐ Interval programming - this is the section in which interval phase selection and timing are programmed. Each interval consists of green, yellow clear, and red clear times. A section where phases are selected for each interval are positioned to the right of each set of timings. An interval time of 255 sec. is a special flag to the controller instructing it to use that interval as the "dwell" interval. The exit interval is designated when a 1 sec. green is selected following the dwell interval. Always use interval 5 as the exit interval.
  - Dwell interval - the dwell interval is the interval that the controller will rest in until the following two events occur:
    1. The dwell minimum timer has expired, and
    2. The preempt call is removed.
- Ⓑ Priority settings - there are four priority settings:
  1. OFF - indicates the preemptor is not used.
  2. LOW - use for low priority preempts such as transit vehicle preempts.
  3. MED - use for emergency vehicle preempts.
  4. HIGH - use for railroad preempts.

Railroad preempt should always be set to be the highest priority. If multiple preempts are set to the same priority, preempts will be served on a first come, first served basis.
- Ⓒ Dwell hold-over timer - this timer begins to time after the preempt call is removed. If this timer expires, the dwell interval will be released. If this timer does not expire before a second preempt call is received, the dwell interval will be retimed. Normally used with vehicle initiated EV preemption systems.
- Ⓓ Latch call - used in conjunction with the delay timer. The application for this feature is normally the fire house push button style of preempt. These types of preempts normally have a delay interval. This feature will allow the preempt call to latch and not release until the preempt is served.
- Ⓔ Hold clear 1 phases during delay - this feature is used in conjunction with the delay interval. If clear 1 phases are used in normal operation, and those phases just happen to be served during the delay interval, this feature will apply a hold on the clear 1 phases during the remainder of the delay interval.

(continued on next page)

## 2070 OASIS Preemption Programming Detail

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**PREEMPTION PROGRAMMING DETAIL**

(program controller as shown below)

FROM MAIN MENU PRESS 'A' (PREEMPTION), THEN '1' (STANDARD PREEMPTION).

PREEMPTION #1	SETTINGS (NEXT:1-10)											
INTERVAL/TIMING	CLEAR/DWELL PHASES											
GRN	YEL	RED	1	2	3	4	5	6	7	8	9	10
1	12	4.0	3.5	X								
2	255	0.0	0.0		X							
3	0	0.0	0.0			X						
4	0	0.0	0.0				X					
5	1	0.0	0.0	X				X				

EXIT CALLS	OPTIONS
PRIORITY (Y/N TO SELECT) .....	HIGH
DELAY TIMER (0-255 SEC) .....	0
MIN GREEN BEFORE PRE (0= DEFAULT)....	1
PED CLEAR BEFORE PRE (0= DEFAULT)...	0
YELLOW CLEAR BEFORE PRE (0= DEFAULT).4.0	
RED CLEAR BEFORE PRE (0= DEFAULT)....	3.5
DWELL MIN TIMER (0-255 SEC) .....	7
DWELL MAX TIMER (0=OFF,1-255MIN) ....	0
DWELL HOLD-OVER TIMER (0-255) .....	0
LATCH CALL? .....	N
LINK TO NEXT PREEMPT? .....	N
ENABLE BACKUP PROTECTION? .....	N
HOLD CLEAR 1 PHASES DURING DELAY? ...	N
FAST GREEN FLASH DWELL PHASES? .....	N
PED CLEARANCE THROUGH YELLOW? .....	N
INHIBIT OVERLAP GREEN EXTENSION? ....	N
SERVICE DURING SOFTWARE FLASH? .....	N
REST IN RED DURING DWELL INTERVAL? ..	N
FLASH DWELL INTERVAL? .....	N
ALLOW PEDS IN DWELL INTERVAL? .....	N
RE-TIME DWELL INTERVAL? .....	N
OVERLAPS:	ABCDEFGHIJKLMNPO
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	

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**Preemption Programming Detail (continued)**

- Ⓕ Inhibit overlap green extension - affects how green extension overlaps (a.k.a. timed overlaps) transition into preemption. If a green extension overlap will not be used in the preemption, this setting is typically "YES". This will inhibit the overlap green extension from timing and allow transition to preemption to be accomplished in the quickest possible time. This is most important in RR preemption applications. If the overlap is used in the first interval of the preempt, the setting should be programmed as "NO".
- Ⓖ Service during software flash - this feature is normally used in conjunction with EV preemption. This allows the controller to come out of late night flash in order to serve the EV preempt.
- Ⓕ Rest in red during dwell interval - if the signal plan calls for the preempt dwell to be an all red rest state, this feature should be enabled. In addition, do not select any phases for the dwell interval.
- Ⓕ Re-time dwell interval - used in conjunction with dwell hold-over timer. Allows the controller to re-time the dwell interval if a second preempt call is received before the hold-over timer times out. Normally used with EV preemption. Do not use this feature with railroad preemption unless there are special circumstances.
- Ⓕ Omit overlaps - this feature allows overlaps to be omitted during preemption when the overlap parents are active during preempt, but the overlap is not desired. Overlaps will return during exit interval 5.

Note: description of features is not complete. This section is intended to address applicational use. Consult the Signal Design Section of this design manual and/or the Econolite Oasis manual for more details.

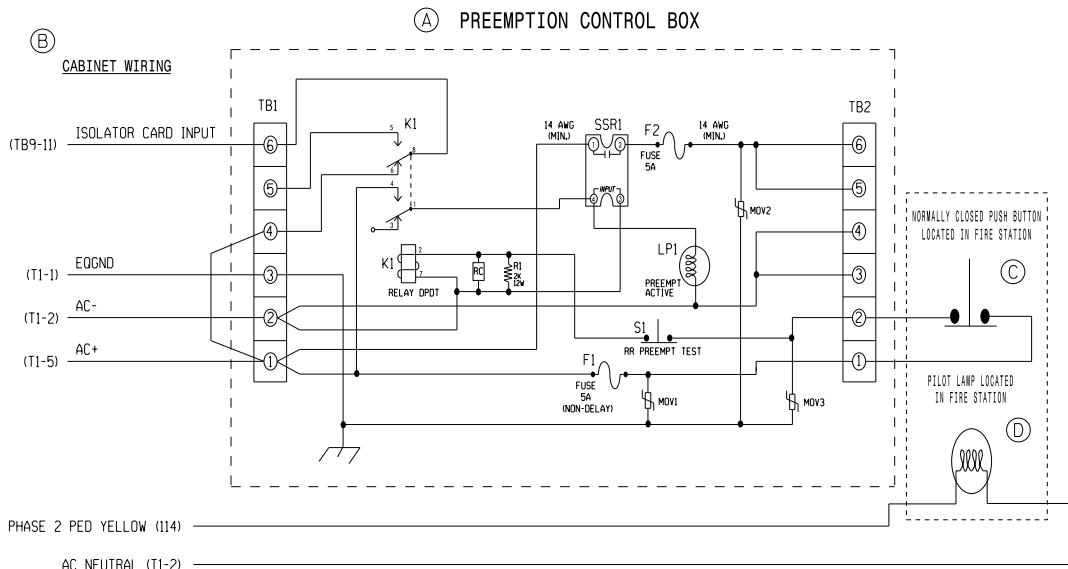
**2070 OASIS Preemption Programming Detail**

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PHASE 2 PED YELLOW (114)

AC NEUTRAL (T1-2)

**LAMP NOTES**

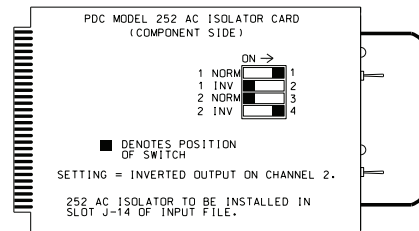
If the ped movement associated with the loadswitch being used to operate the lamp is not used, a load resistor will have to be placed on the ped walk field terminal to drain off loadswitch leakage current. This resistor is shown in the load resistor installation detail.

1. If field terminal 114 has a conflict monitor wire attached, remove, tape, and label wire.
2. Make sure load resistors are in place as shown in the Load Resistor Installation Detail.
3. Install a loadswitch in Output File Slot S3.

(E)

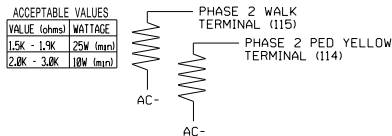
**PREEMPT 2 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL**

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

**LOAD RESISTOR INSTALLATION DETAIL**



**Emergency Vehicle Preemption Push Button And Indicator Lamp Wiring Detail**

This wiring detail gives the installer the information needed to interface the controller/cabinet assembly with a firehouse push button. The function of this button is to generate a controller input to initiate the EV preemption sequence.

Usually, there is also an indicator (pilot) lamp to be installed in the firehouse. The purpose of this lamp is to give the user positive feedback from the controller that the traffic signal has been preempted. The wiring for the indicator lamp is also shown on this detail.

Major components:

- Preemption Control Box** - this box essentially serves the same purpose in fire preemption applications as it does in railroad preemption applications. See STD. NO. 9.0 sheet 1 for a detailed description of the preempt control box.
- Cabinet wiring termination points** - tells the installer where to make the connections in order to interface the box with the cabinet. These connections supply AC power to the box, as well as tie the preempt relay output to an AC isolator.
- Firehouse Push Button** - this is a momentary, normally closed, push button switch. The contacts of this switch are opened when the button is pressed, causing preempt to be activated.
- Indicator Lamp** - the function of this lamp is described above. This lamp is normally controlled by the yellow circuit of a pedestrian loadswitch. The function of the C1-pin associated with this ped yellow will have to be changed to operate this lamp correctly. A load resistor is normally tied in parallel with the lamp to drain off any induced voltage. Special programming notes are necessary to alert the installer of these changes. If delay before preempt interval is used, special logic processor programming is necessary for proper operation.
- When the push button in the fire station is pressed, the preempt relay in the preempt control box de-energizes and removes AC+ from the AC isolator card. As such, the AC isolator card needs to have its switches set to the inverted position for channel 2.

**Emergency Vehicle Preemption (Push Button Style) Wiring Detail**

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