

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	∅ 1 1A	∅ 2 2A	∅ 2 2C	∅ 2 2E	∅ 3 3A	∅ 4 4A	∅ 4 4C	∅ 4 4E	SYS. DET. S1	SLOT EMPTY	SLOT EMPTY	∅ 2 PED DC ISOLATOR	∅ 6 PED DC ISOLATOR	FS DC ISOLATOR
	L	NOT USED	∅ 2 2B	∅ 2 2D	NOT USED	NOT USED	∅ 4 4B	∅ 4 4D	NOT USED	SYS. DET. S2	EMPTY	EMPTY	∅ 4 PED DC ISOLATOR	∅ 8 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	∅ 5 5A	∅ 6 6A	∅ 6 6C	∅ 6 6E	∅ 7 7A	∅ 8 8A	∅ 8 8C	∅ 8 8E	SYS. DET. S3	SLOT EMPTY	SLOT EMPTY	PRE3 DC ISOLATOR	PRE4 DC ISOLATOR	PRE1 AC ISOLATOR
	L	NOT USED	∅ 6 6B	∅ 6 6D	NOT USED	NOT USED	∅ 8 8B	∅ 8 8D	NOT USED	SYS. DET. S4	EMPTY	EMPTY	PRE5 DC ISOLATOR	PRE6 DC ISOLATOR	PRE2 AC ISOLATOR

EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	∅ 1 1A	∅ 2 2A	∅ 2 2C	SLOT EMPTY	∅ 3 3A	∅ 4 4A	∅ 4 4C	SLOT EMPTY	SYS. DET. S1	SLOT EMPTY	SLOT EMPTY	∅ 2 PED DC ISOLATOR	∅ 6 PED DC ISOLATOR	FS DC ISOLATOR
	L	∅ 1 1B	∅ 2 2B	∅ 2 2D	EMPTY	NOT USED	∅ 4 4B	NOT USED	EMPTY	SYS. DET. S2	EMPTY	EMPTY	NOT USED	NOT USED	ST DC ISOLATOR
FILE "J"	U	∅ 5 5A	∅ 6 6A	∅ 6/SYS 6C/S3	SLOT EMPTY	∅ 7 7A	∅ 8 8A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	PRE1 AC ISOLATOR
	L	NOT USED	∅ 6 6B	∅ 6/SYS 6D/S4	EMPTY	NOT USED	∅ 8 8B	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	NOT USED

EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

2070 Input File Layout (332)

NCDOT uses 2070L controllers in type 170 cabinets. Each cabinet has one or two input files to accept inputs for traffic detection, pedestrian pushbuttons, preempt calls or other functions deemed necessary. The base mounted 332 cabinet has two input files, labeled 'I' and 'J'. The pole mounted 336 cabinet has only the 'I' file.

Each input file has 14 slots. Each slot can hold a 2-channel inductive loop detector, AC isolator or DC isolator. Each slot has two output terminals, but not every output terminal is independently connected to the controller. Slots 1, 4, 5 and 8 have the two output pins jumpered together and wired to a single controller harness pin. Neither of the output pins for slot 10 are connected to the controller.

Two examples of the input file layout for the base mounted 332 cabinet are shown left. The upper example shows how the rack is represented on the start drawings. The functions shown for slots 1-8 and 12-14 correspond to the default input assignments in the Econolite Oasis software. The controller detectors for slot 9 are assigned as local detectors by default, but NCDOT reserves them for system detectors instead. Slot 10 is not wired to the controller and is therefore unused. The upper and lower channels of Slot 11 in the I-File are assigned to Manual Advance and Manual Control Enable, respectively. Both channels of J11 are spares.

Features:

- ① Inductive Loop Detectors - Input file slots 1-9 are set up for inductive loop detector cards. Each card has two channels. Each channel is represented on the electrical detail by a block in the layouts shown on the left. For each channel, the function of the loop is shown in the upper half of the block while the loop name is shown in the lower half. A channel can be assigned to a local detector, a system detector, or both. While the default phase settings should be followed as much as practical, controller detectors can be easily reassigned as needed.

2070 Input File Layout

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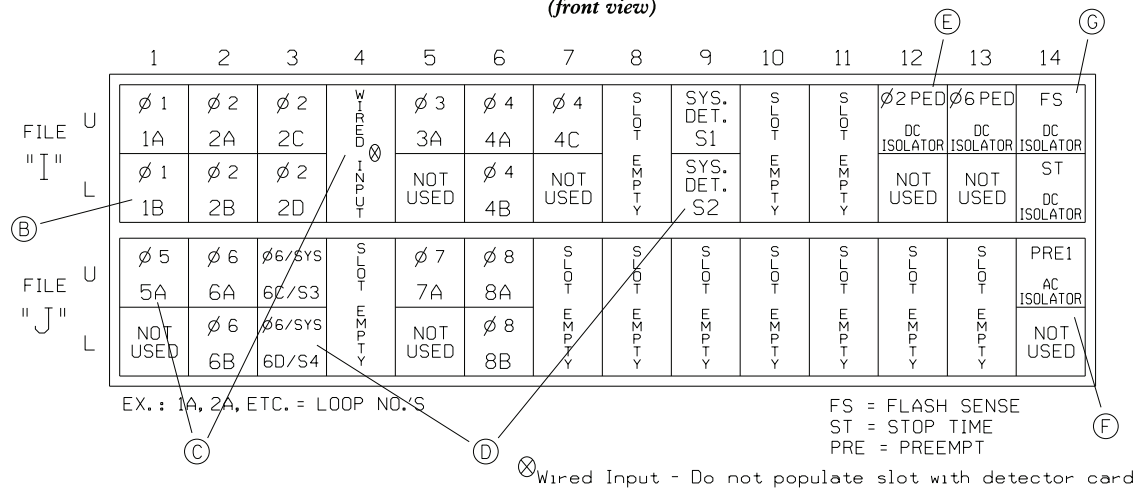
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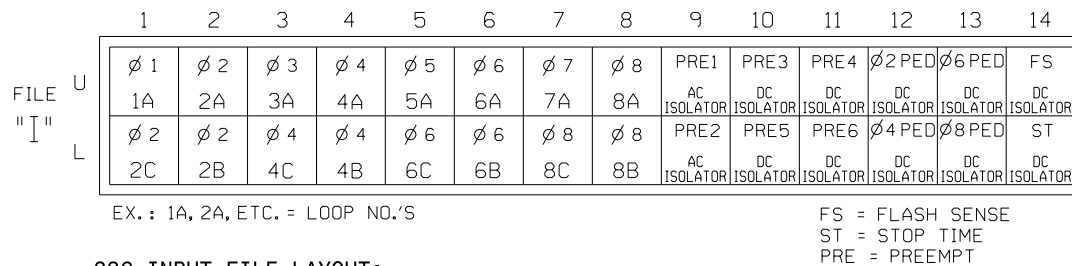
INPUT FILE POSITION LAYOUT

(front view)



INPUT FILE POSITION LAYOUT

(front view)



336 INPUT FILE LAYOUT:

The pole mounted 336 cabinet has only one input file. Both channels of all 14 slots are connected to the controller. The example shown above shows the default setup for the 336 input file. Slots 1-8 are set up for inductive loop detectors, slots 9-11 for preempts and slots 12 and 13 for pedestrian pushbuttons. Slot 14 is reserved for flash sense and stop time, just like on the 332 cabinet. Due to the space limitations, no slots are reserved for system detectors. System loops must be placed on unused local detector channels, with preference given to the lower channel (detector channel #2).

FEATURES (cont.):

- Ⓑ Slots 1, 4, 5 and 8 have only one controller input pin. The lower channel is normally unused. However, the lower channel of these slots may be used if neither the loop on the upper channel nor the loop proposed for use on the lower channel have any associated delay timing and all other settings for both loops are identical. The controller will view the two loops as if they are one.
- Ⓒ Loops That Call Two Phases - Sometimes a left turn loop will call both the left turn phase and the adjacent through movement with different timings or attributes for each. In this case, two detector channels are needed for the single loop. Utilize the default programmed detector settings. Populate the turn phase detector slot with a detector card. Then jumper the controller turn phase input pin to the through movement controller input pin that is associated with slot(s) 4 or 8. The through movement slot is not populated with a detector card as shown in the example at left.
- Ⓓ System Detectors - Detector cards for system loops are normally placed in slots I9 and J9. If more than four dedicated system loops are needed, an unused channel from slots 1-8 may be used. A detector may also serve as both a local and a system detector, as shown in slot J3 in the example at left.
- Ⓔ Ped Detectors - Pedestrian pushbuttons interface to the controller through DC isolator cards in slots I12 and I13.
- Ⓕ Preempt Inputs - The default setup can accommodate six preempt inputs. Preempts 1 and 2 interface the controller through an AC isolator card in slot J14. Preempt 1 is normally reserved for railroad preempt, while preempt 2 can be used for a second railroad preempt or (more commonly) for pushbutton style emergency vehicle preempt. Preempts 3-6 are normally reserved for vehicle initiated EV preemptions and interface the controller through DC isolator cards. For more information on preempt, see STD. No. 9.0.
- Ⓖ Slot I14 is reserved for flash sense and stop time. This DC isolator card is equipped from the factory, and this slot always appears on electrical details without modification.
Using these slots for purposes other than those shown here may require reassignment of inputs in the controller software and/or modification of the surge protection on the cabinet input panel.

2070 Input File Layout

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INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE	∅ 1	∅ 2	SLOT	∅ 4	SLOT	∅ 6	SLOT	∅ 8	SLOT	SLOT	SLOT	SLOT	SLOT	FS
U	1A	2A		4A		6A		8A						DC ISOLATOR
"I"	⊗	∅ 2		NOT USED		∅ 6		NOT USED						ST
L	WIRED INPUT	2B	EMPTY		EMPTY		EMPTY		EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	DC ISOLATOR

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

⊗ Wired Input - turn off Channel 2.

¹ ADD JUMPER FROM I1-F TO I1-W, ON REAR OF INPUT FILE. ———— ①

FEATURES (cont.):

- ⑨ Loops That Call Two Phases - Loops that call two phases in a 336 pole mounted cabinet require special wiring. A jumper must be added from the controller input pin of the first phase to the controller input pin of the second phase in the same slot that the loop detector is installed. Also, the second channel for the loop detector plugged into the slot must be turned OFF so that the detector can not inadvertently place a call to the controller on the second channel.
- ① Jumper Note - If a single loop requires two controller detector inputs, a note is placed below the Input File Connection & Programming Chart detailing which controller input pins should be jumpered together. Reference STD. NO. 8.1 sheet 1 for 332 and 336 cabinets.

2070 Input File Layout

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INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB2-1,2	I1U	56	18	1	1	Y	Y			
1B	TB2-3,4	I1L	56	18	1	1	Y	Y			
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
2C	TB2-9,10	I3U	63	25	32	2	Y	Y			
2D	TB2-11,12	I3L	76	38	42	2	Y	Y			
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			3
4A	TB4-9,10	I6U	41	3	4	4		Y		2.8	
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			15
4C	TB6-1,2	I7U	65	27	34	4	Y	Y			15
* S1	TB6-9,10	I9U	60	22	11	SYS					
* S2	TB6-11,12	I9L	62	24	13	SYS					
5A ¹	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9	22	2	Y	Y	Y		3
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
6C/S3	TB3-9,10	J3U	64	26	36	6/SYS	Y	Y			
6D/S4	TB3-11,12	J3L	77	39	46	6/SYS	Y	Y			
7A	TB5-5,6	J5U	57	19	7	7	Y	Y			3
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			
PED PUSH BUTTONS							NOTE:				
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED	INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.				
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					

(A) ¹ ADD JUMPER FROM J1-W TO I4-W, ON REAR OF INPUT FILE. (B)

* SYSTEM DETECTOR ONLY. REMOVE THE VEHICLE PHASE ASSIGNED TO THIS DETECTOR IN THE DEFAULT PROGRAMMING.



336 Cabinet Chart:

The Input File Connection & Programming Chart for the 336 cabinet works the same as the chart for the 332 cabinet. The only differences are the loop terminal numbers and the relationship of the input file position with the controller pin number. The 336 cabinet start drawings have the correct values in their charts.

2070 Input File Connection & Programming Chart (332)

The purpose of the Input File Connection & Programming Chart is to provide the installer with a convenient reference for connecting inductive loops and pedestrian pushbuttons to the cabinet as well as for programming controller detectors. The example shown at left is set up to match the example shown in the 2070 Input File Layout section (STD. No. 8.0).

The key value to each row is the input file position (third column from the left). The first six values in the row should be considered attributes of the input file position. The relationship of the input file position with a specific inductive loop (first column) is decided during the preparation of the input file layout. Also, once the input file layout is established, all rows corresponding to unused input file positions can be deleted.

The relationship of the input file position with the loop terminal and pin numbers is fixed in the cabinet hardware. Changing these values entails rewiring the cabinet and should be avoided. The relationship of the input file position with the input assignment and controller detector numbers is set in the controller software. The values shown on the start drawings are the controller defaults. Changing them is only necessary if the detector is to be reassigned to another function.

The remaining (right-most) six columns contain attributes that apply to the specific loop associated with the input file position in question. These values can be found in the '2070L Loop Detector and Installation' chart on the signal plan and should be duplicated in this chart.

Additional Features:

- (A) Pedestrian Pushbuttons - If the design utilizes pedestrian pushbuttons, an extension is added to the Input File Connection & Programming Chart that contains the appropriate values for those detector channels. The values in the last five columns of the main chart do not apply to pedestrian detectors. The CADD cell containing the pedestrian detectors also includes a note reminding the installer to equip the appropriate slots with a DC isolator.
- (B) Jumper Note - If a single loop requires two controller detector inputs (see STD. NO. 8.0 sheets 2 and 3), a note is placed below the chart detailing which controller input pins should be jumpered together.
- (C) System Detector Note - If a detector channel is to serve as a system detector only, this note is included to remind the installer to remove the vehicle phase assigned to that detector in the default programming.

2070 Input File Connection & Programming Chart

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STD. NO.

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