



EMERGENCY TRANSFER CONTROLS

DESIGNS - CONTROLS - APPLICATIONS

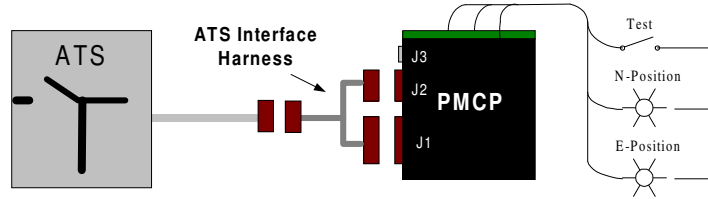
251 Nuthatch Court Three Bridges, New Jersey 08887 Office: 908-782-1794 Fax: 908-782-0749

Applications

Transfer Schemes: ATS Manufacturers:

Open Transition
 Closed Transition
 SoftLoad Transition
 Delayed Transition
 Load Dump
 Load Disconnect
 Custom Schemes

ASCO
 Zenith
 Kohler
 Generac
 Russel
 Onan
 Hubbel



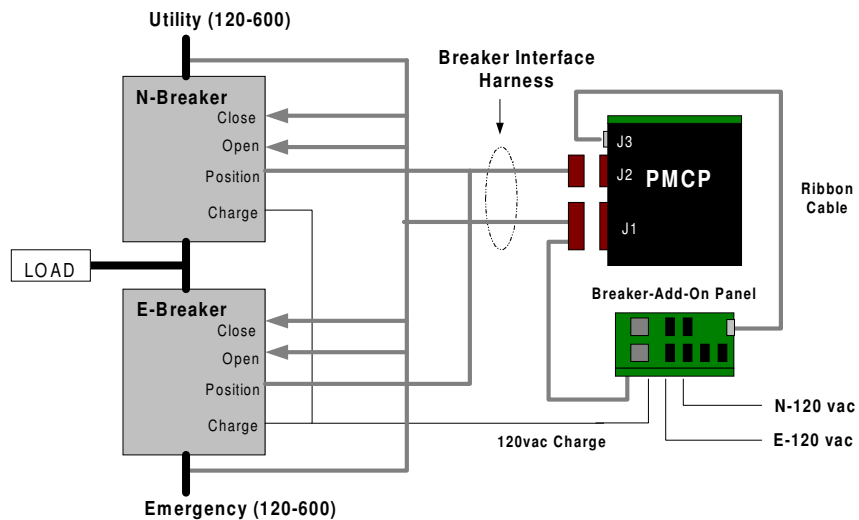
PMCP operating an ATS

Manufacturers

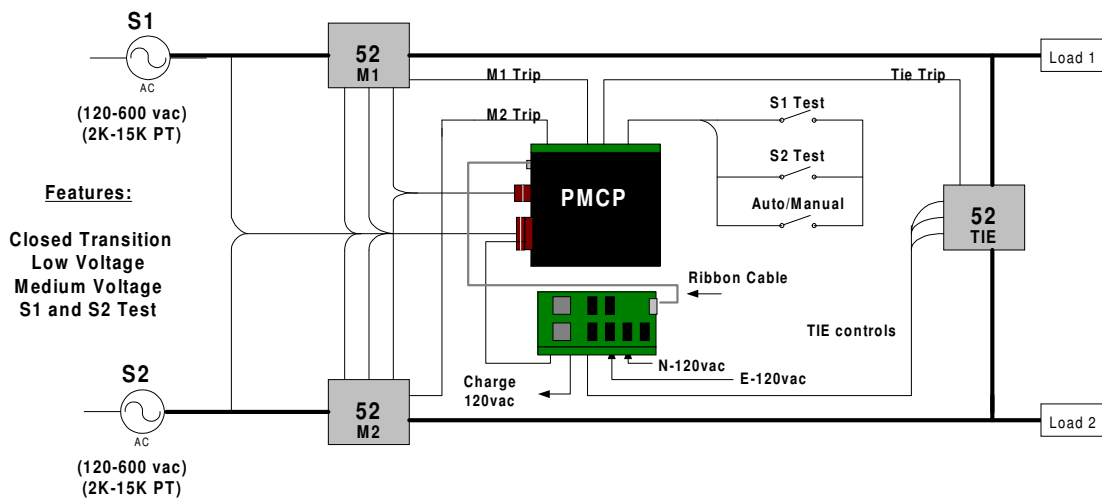
ABB
 Siemens
 Cutler Hammer
 Square-D
 GE
 Westinghouse

Transfer Schemes:

Open Transition
 Closed Transition
 SoftLoad Transition
 Delayed Transition
 Load Dump
 Load Disconnect



PMCP operating a Breaker Pair Transfer Scheme



Features:
 Closed Transition
 Low Voltage
 Medium Voltage
 S1 and S2 Test

PMCP operating a Main-Tie-Main

**PMCP Terminal Block (TB)**

<i>TB #</i>	<i>Function</i>	<i>Description</i>
1	Ground	Ground
2	Load Dump	Load Dump
3	9A	Load on Normal
4	9C	Normal Available
5	24V	24 Volts
6	9B	Load on Emergency
7	9D	Emergency Available
8	24V	24 Volts
9	31	Load Disconnect
10	CTR	CTR output
11	VOUT	VOUT: KW trip feature & MTM
12	34A	Inhibit to Normal
13	34B	Inhibit to Emergency
14	GND	Ground
15	6C FLT2	Retransfer back to Normal
16	6B	Manual Retransfer/ATS LO Reset
17	GND	Ground
18	TEST	Transfer Test
19	INA SL	Gen Input A/Soft Load/Load Bypass
20	INB FLT1	Gen Input B/Fault 1/ATS Isolated
21	GND	Ground
22	TD BYPASS	Time Delay Bypass/ATS LO Reset
23	+RS485	+RS485
24	-RS485	-RS485
25	SHIELD IN	Shield In
26	SHIELD OUT	Shield Out

Table 1



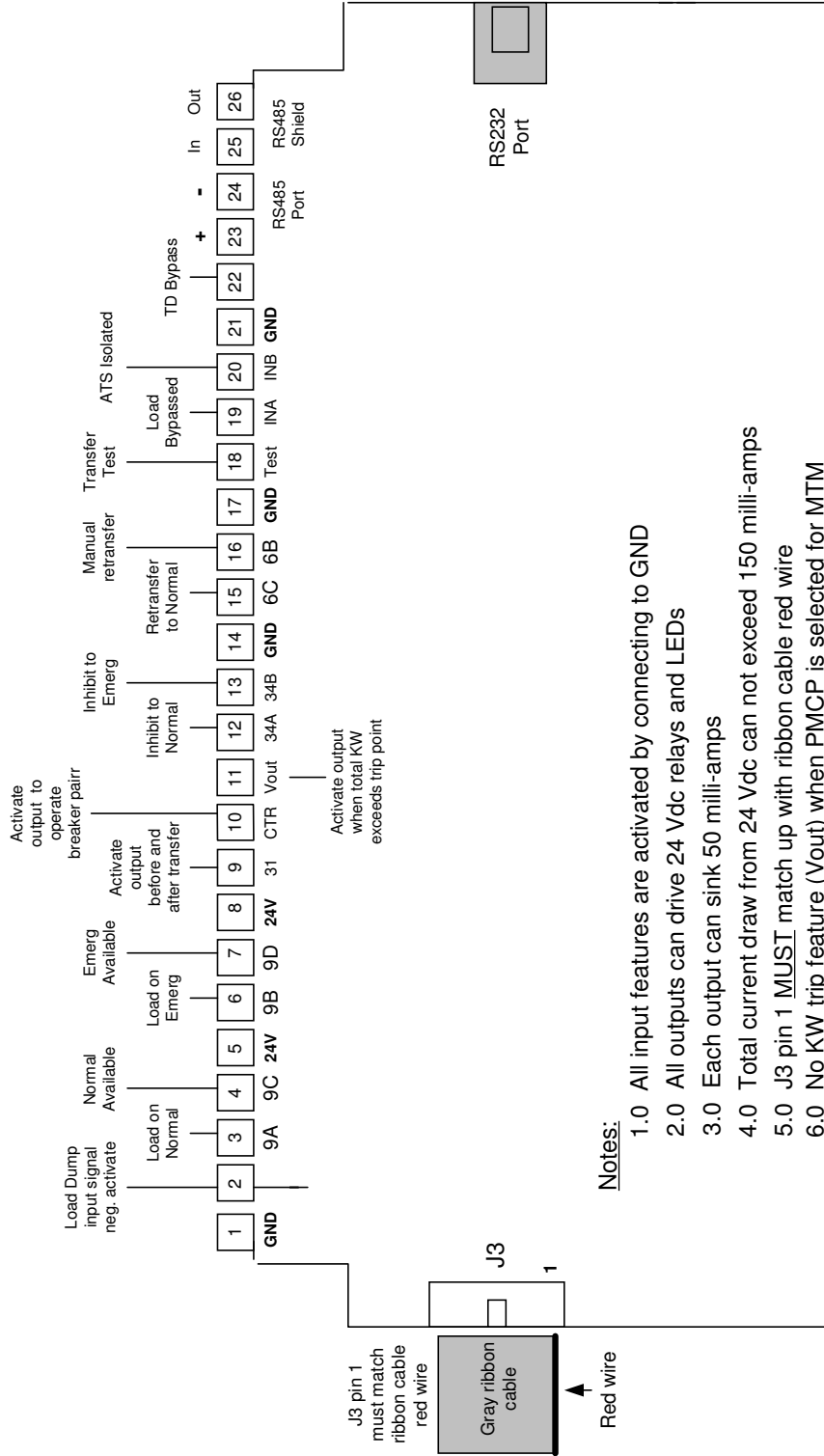
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ETC, Inc.
November 2009

PMCP ATS Connections



Notes:

- 1.0 All input features are activated by connecting to GND
- 2.0 All outputs can drive 24 Vdc relays and LEDs
- 3.0 Each output can sink 50 milli-amps
- 4.0 Total current draw from 24 Vdc can not exceed 150 milli-amps
- 5.0 J3 pin 1 **MUST** match up with ribbon cable red wire
- 6.0 No KW trip feature (Vout) when PMCP is selected for MTM
- 7.0 If 6C is activated, no retransfer shall occur unless Emergency fails or 6B is activated



PMCP Breaker Interface (J1)

<i>J1 pin#/label ID</i>	<i>Function</i>	<i>Description</i>
1		E-Trip
2		-----
3		N-Close
4		-----
5		N-Trip
6		-----
7		Add-On Panel... TB-17
8		-----
9		E-Close
10		EC
11		NA
12		NC
13		NB
14		-----
15		EA
16		-----
17		Add-On Panel... TB-18
18		-----
19		EB

Table 2



PMCP Breaker Interface (J2)

<i>J2 pin#</i>	<i>Label ID</i>	<i>Description</i>
1	A	N-Position (Normal Breaker)
2	B	E-Position (Emergency Breaker)
3	C	Position Common
4		-----
5	E	Engine Start Signal (ESS)
6	F	Engine Start Signal (ESS)
7	G	CT Common
8	H	IA
9	I	IB
10	J	IC

Table 3



Monitoring Transfer Switch position:

The PMCP Controller is position sensitive. A Form C configuration must be provided to the J2 Connector of the PMCP as shown in Figure 2.

If the position is incorrect, the PMCP shall activate a transfer switch failure alarm and then go into a shutdown or sleep mode. The controller will remain in the sleep mode until the alarm reset feature is activated. The alarm reset feature can be performed by applying a momentary short across terminals 21 and 22 on the Terminal Block. The user may also reset the alarm from the Laptop, Display, Scada, and Handheld.

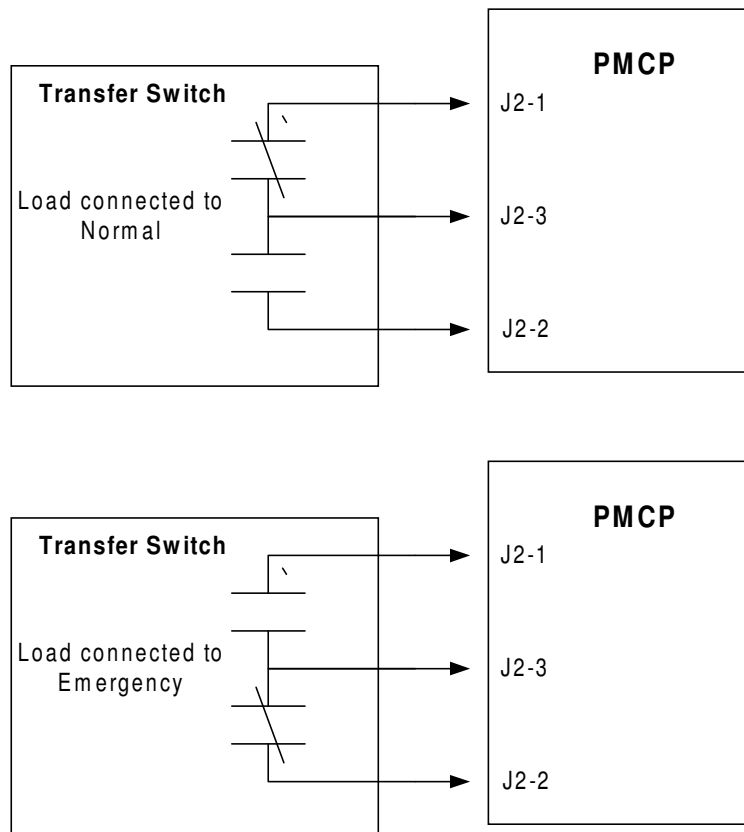


Figure 2



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1.7 Engine Start Signal (ESS):

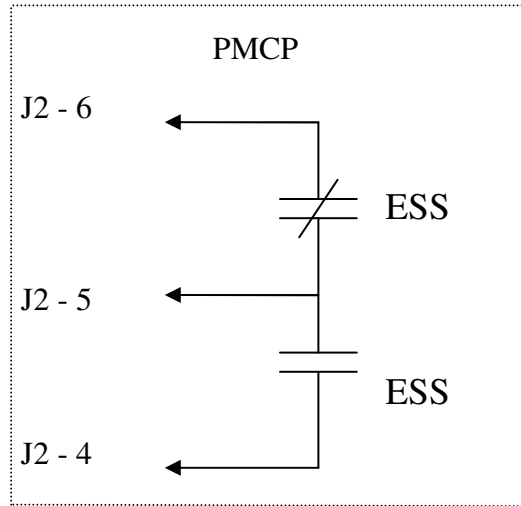


Figure 3A Call for engine start using J2-5 & J2-6 (ESS contacts are closed)

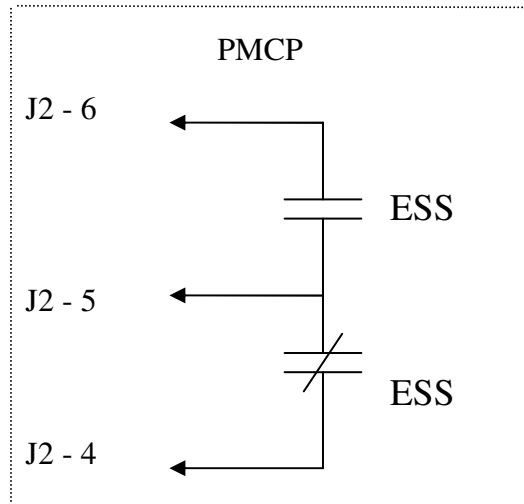


Figure 3B Shut down engine using J2-5 & J2-6 (ESS contacts are opened)



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PMCP/Asco Harness Interface (std 24 pin plug)

<i>Asco pin #</i>	<i>PMCP J2</i>	<i>PMCP J1</i>
1 TS-8		5
2 COIL A		17
3 TS-6		3
4 NC		12
5 COIL B		7
6 EC		10
7 EA		15
8 FEA 7 COMM	5	
9 FEA 7	6	
10 14 COMM	3	
11 NB		13
12 NA		11
13 14B	2	
14 14A	1	
15 TS-70		1
16 TS-72		9
17 FEA 8	4	
18 EB		19
19		
20		
21		
22		
23		
24		

Table 4



PMCP/Asco Harness Interface (std 24 pin w/30)

<i>Asco pin #</i>		<i>PMCP J2</i>	<i>UAP J1</i>
1	TS-8		9
2	COIL A		5
3	TS-6		3
4	NC		11
5	COIL B		15
6	EC		7
7	EA		10
8	FEA 7 COMM	5	
9	FEA 7	6	
10	14 COMM	3	
11	NB		14
12	NA		1
13	14B	2	
14	14A	1	
15	TS-70		13
16	TS-72		17
17	FEA 8	4	
18	EB		19
19	TS-7		2
20	TS-69		12
21			
22			
23			
24			

Table 5



Breaker Add-On Panel (TB)

<i>TB #</i>	<i>Function</i>	<i>Description</i>
1	Alarm	Input to reset all alarm functions
2	24 VDC	24 VDC
3	Ground	Ground
4	SYS-	LDCR pickup negative
5	SYS+	LDCR pickup positive
6	62F	Overlap Form A contact
7	62F	Overlap Form A contact
8	LDRV2	Form A contact (call factory)
9	LDRV2	Form A contact
10	Load Disconnect	Form A
11	“	Common (Load disconnect)
12	“	Form B Load Disconnect
13	VOUT	Form A (KW trip feature)
14	VOUT	Form A (KW trip feature)
15	ALARM	Form A (any alarm features active)
16	ALARM	Form A (any alarm features active)
17	CTR	Hot Normally opened
18	CTR	Hot Normally closed
19	120 HOT	120 vac
20	120 HOT	120 vac
21	NEUTRAL	Neutral (120)
22	NEUTRAL	Neutral (120)
23	E-NEU	Neutral from Emergency transformer
24	E-120	120 vac from Emergency transformer
25	N-NEU	Neutral from Normal transformer
26	N-120	120 vac from Normal transformer

Table 8



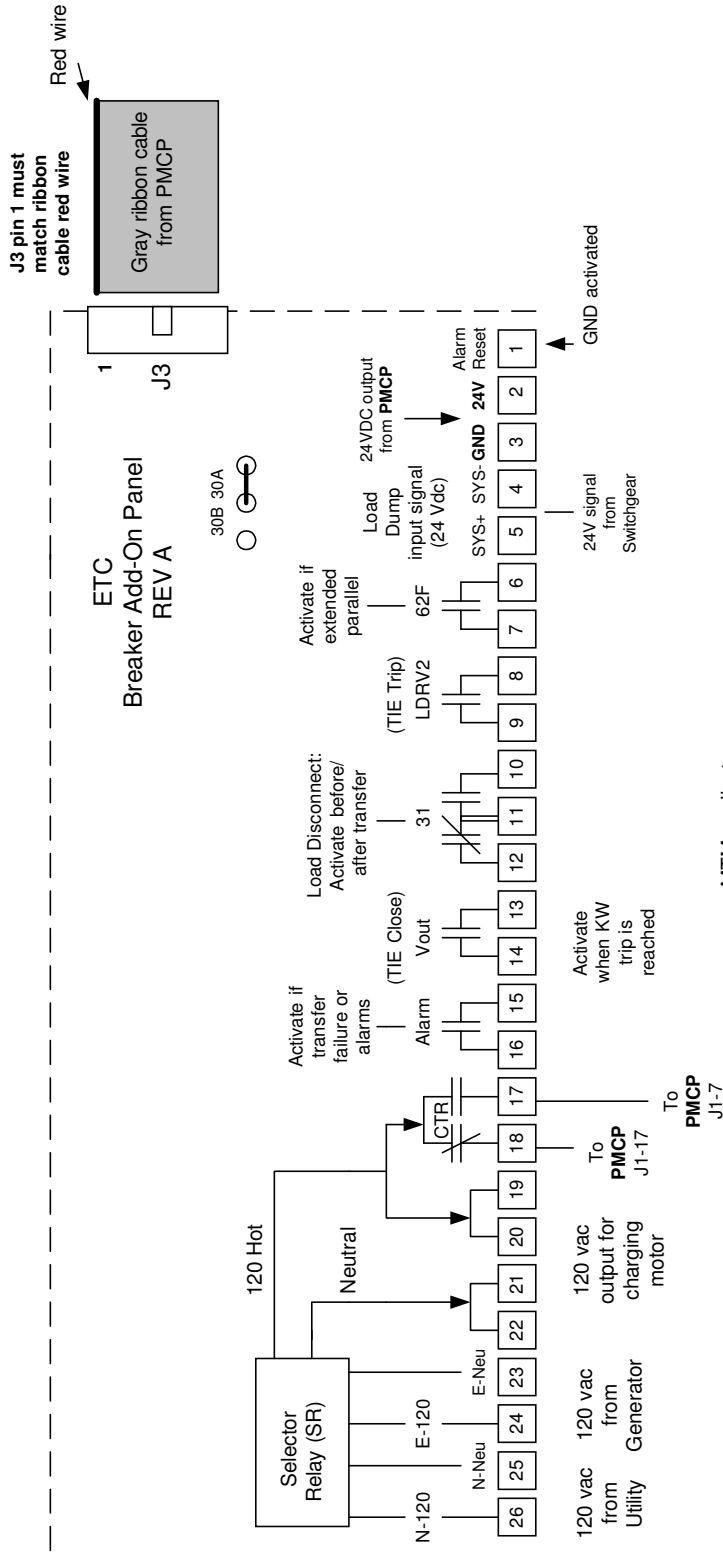
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ETC, Inc.
September 2008

Breaker Add-On Panel Connections



MTM application:

- 1.0 Wire TB-19, TB-14 & TB-9 together
- 2.0 Connect TB-13 to TIE Close coil
- 3.0 Connect TB-8 to TIE Trip coil
- 4.0 No KW trip feature when MTM is selected



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PMCP/ ASCO 300 Series ATS Interface

ASCO function	300 J2	PMCP J2	300 J1	PMCP J1
1 TS-8			8	5
2 COIL A			15	17
3 TS-6			2	3
4 NC			4	12
5 COIL B			17	7
6 EC			12	10
7 EA			7	15
8 FEA 7 COMM	3	5		
9 FEA 7	2	6		
10 14 COMM	8	3		
11 NB			10	13
12 NA			1	11
13 14B	9	2		
14 14A	10	1		
15 TS-70			5	1
16 TS-72			13	9
17 FEA 8		4		
18 EB				19
19				
20				
21				
22				
23				
24				

TABLE 9



EMERGENCY TRANSFER CONTROLS

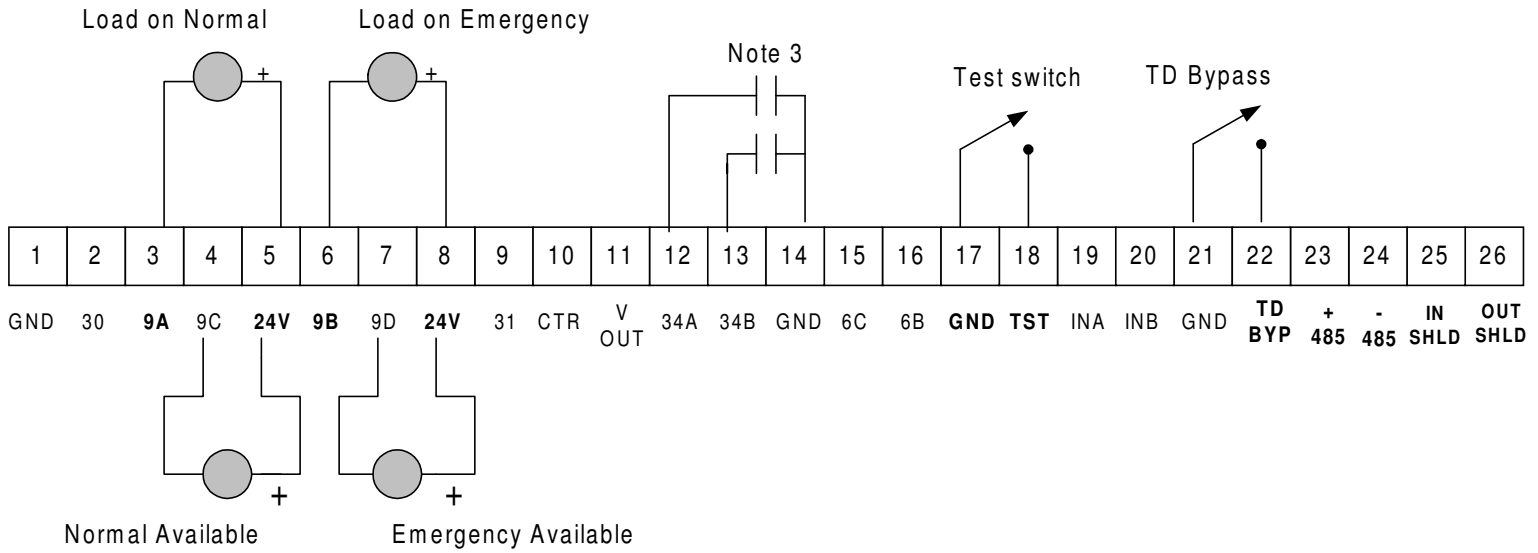
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PMCP TERMINAL BLOCK CONNECTIOS

(white dot on LED base connects to 24V)

A closure activates test



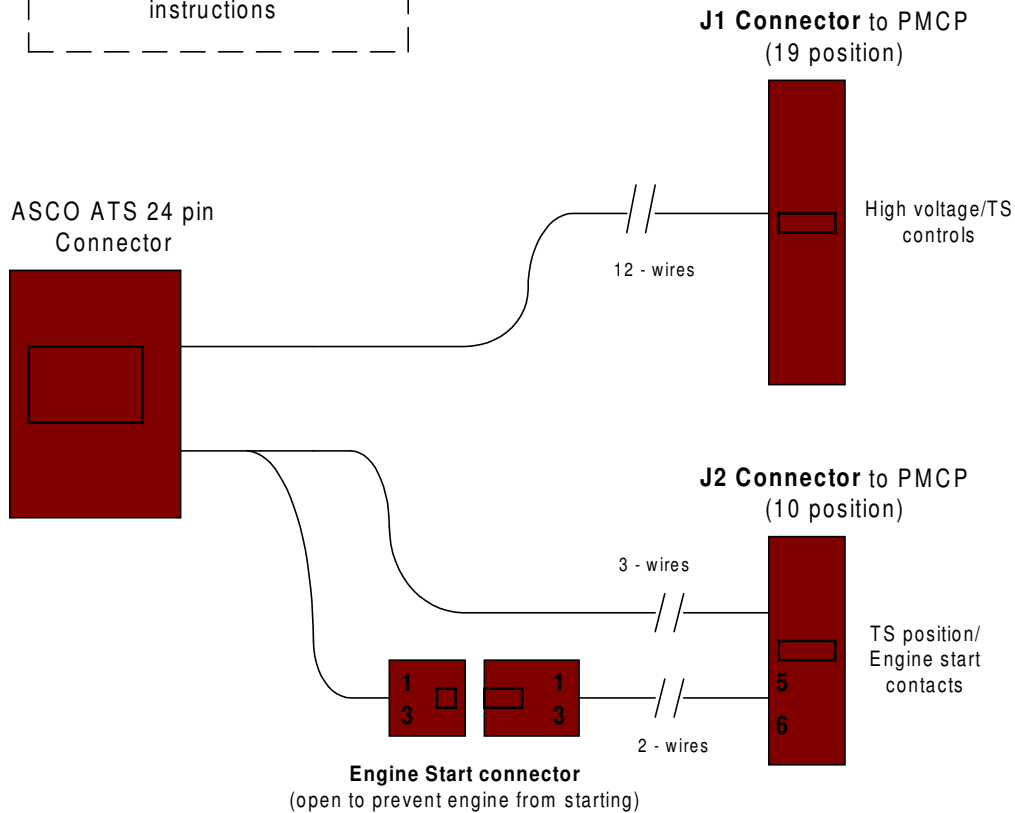
- 1.0 The last ATS on the line requires a 120 ohm resistor across terminals 23 & 24
- 2.0 The LEDs for position of ATS are polarized: the white dot on the base connects to 24V
- 3.0 A closure across 34A will inhibit transfer to Normal
- 4.0 A closure across 34B will inhibit transfer to Emergency



ETC, Inc.
October 24, 2008

**ASCO ATS Interface Harness
(Interface PMCP Controller to ASCO ATS)**

See note below for installation instructions



NOTE:

1.0 Install harness in this order:

- 1.1 Disconnect Engine Start Connector. This prevents engine from starting
- 1.2 Connect ASCO ATS connector first
- 1.3 J2 Connector second
- 1.4 J1 Connector third
- 1.5 Connect Engine Start connector last: engine should not start

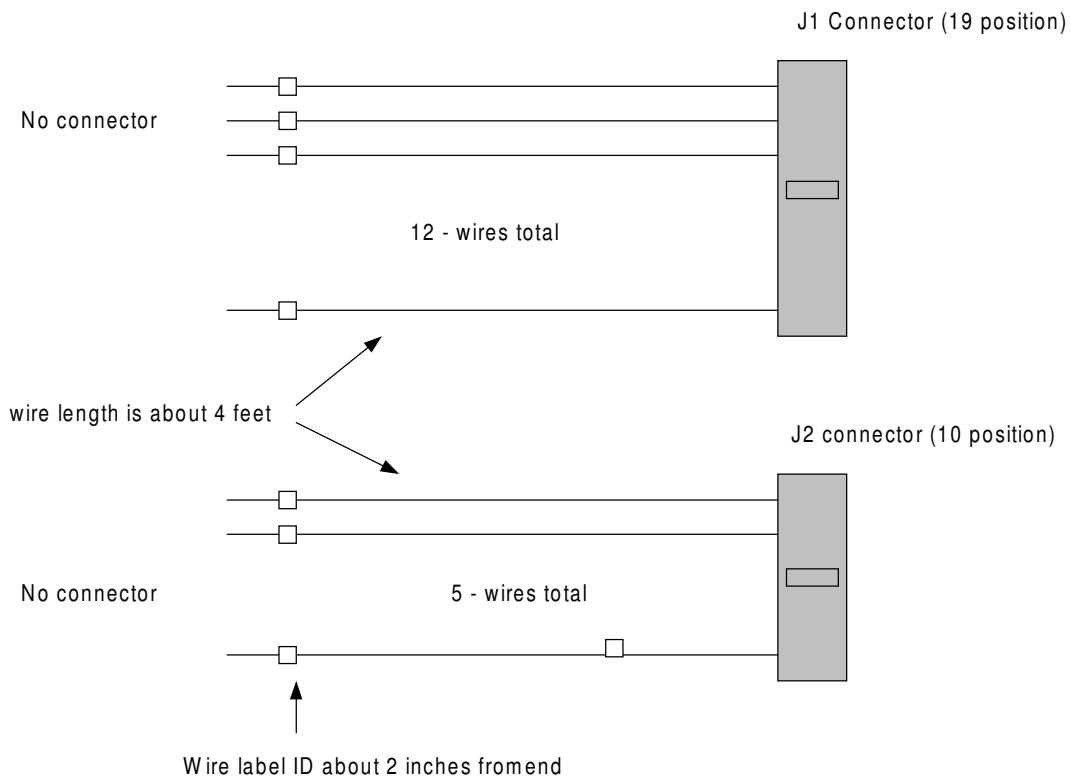
2.0 Always disconnect J1 Connector before disconnecting J2 Connector when removing harness



Breaker Pair/MTM Interface Harness

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Reference to: Breaker Harness sketch



Note: Add label ID on each wire as per drawing

Figure 13