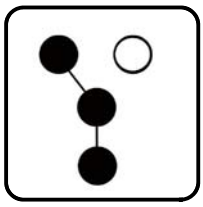
Wiring Diagrams

Automatic Transfer Switches



Models:

KSS/KSP
KGS/KGP

Controls:
MPAC™ 750
MPAC™ 1200
MPAC™ 1500

ISO 9001
KOHLER POWER SYSTEMS
NATIONALLY REGISTERED

KOHLER®
Power Systems

TP-6918 2/16a

Product Identification Information

Product identification numbers determine service parts. Record the product identification numbers in the spaces below immediately after unpacking the products so that the numbers are readily available for future reference. Record field-installed kit numbers after installing the kits.

Transfer Switch Identification Numbers

Record the product identification numbers from the transfer switch nameplate.

Model Designation _____

Serial Number _____

Accessory Number	Accessory Description

Introduction

This manual provides wiring diagrams for the automatic transfer switch models listed on the front cover. Use the chart on the next page to identify the diagrams for your model. Diagrams are arranged in alphanumeric order on the pages following the chart.

Information in this publication represents data available at the time of print. The manufacturer of Kohler Co. products reserves the right to change this publication and the products represented without notice and without any obligation or liability whatsoever.

Service Assistance

For professional advice on generator set power requirements and conscientious service, please contact your nearest Kohler distributor or dealer.

- Consult the Yellow Pages under the heading Generators—Electric.
- Visit the Kohler Power Systems website at KOHLERPower.com.
- Look at the labels and decals on your Kohler product or review the appropriate literature or documents included with the product.
- Call toll free in the US and Canada 1-800-544-2444.
- Outside the US and Canada, call the nearest regional office.

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(91) 80 3366231
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North Asia Regional Office
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Fax: (813) 3440-2727

Latin America
Latin America Regional Office
Lakeland, Florida, USA
Phone: (863) 619-7568
Fax: (863) 701-7131

Schematics and Wiring Diagrams

Model	Description	Part Number	
		Schematic	Wiring Diagram
KSS	Standard Transition, Specific Breaker, 40–260A	GM89713	GM89714
	Standard Transition, Specific Breaker, 400–600A	GM89715	GM89716
	Standard Transition, Specific Breaker, 800–1000A	GM89717	GM89718
KSP	Programmed Transition, Specific Breaker, 100–400A, 208–240V	GM89719	GM89720
	Programmed Transition, Specific Breaker, 100–400A, 380–480V	GM89722	GM89721
	Programmed Transition, Specific Breaker, 600A, 208–240V	GM89719	GM89723
	Programmed Transition, Specific Breaker, 600A, 380–480V	GM89722	GM89724
KGS	Standard Transition, Bypass, 150–400A	GM89695 (2 sheets)	GM89696 (4 sheets)
	Standard Transition, Bypass, 600–1200A	GM89697 (2 sheets)	GM89698 (4 sheets)
	Standard Transition, Bypass, 1600–3000A	GM89699 (2 sheets)	GM89700 (4 sheets)
KGP	Programmed Transition, Bypass, 150–400A	GM89701 (2 sheets)	GM89702 (4 sheets)
	Programmed Transition, Bypass, 600–1200A	GM89705 (2 sheets)	GM89706 (4 sheets)
	Programmed Transition, Bypass, 1600–3000A	GM89709 (2 sheets)	GM89710 (4 sheets)

Note: Drawings are arranged in alphanumeric order on the following pages.

REV	DATE	REVISION	BY	W F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

MEMBRANE SWITCH
LCD DISPLAY
ETHERNET INTERFACE
STANDARD ON MPAC1500
OPTIONAL ON MPAC750 & MPAC1200

MPAC POWER/ CONTROL BOARD
P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)
TB2 (MODBUS)
4 5 6 GND + –
1 2 3 GND + –
P12 USB PORT (ON BACK OF BOARD)
P16 (OPTION BOARDS)
1 2 3 4 5
TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
OUT 1 NC C NO 4 5 6
IN2 7 8
IN1 1 2
OUT 2 NC C NO 10 11 12
SW1
1 2 3 4
PASSWORD MAITENANCE POWER DISABLE SPARE

P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
CURRENT SENSING

(GEN_START_1) P1–5
(GEN_START_2) P1–10
(POSITION_SOURCE1) P1–12
(GROUND) P1–11
(POSITION_SOURCE2) P1–13

TP2–8 TP2–1 TP2–7
SE SN
NO NO
POSITION INDICATION

P1–10 58 P1–5 57
P4–13 TBF–1
P4–14 TBF–2
ENGINE START

SOURCE 2 AC VOLTAGE SENSING
(SOURCE2_A) P1–6
(SOURCE2_B) P1–7
(SOURCE2_C) P1–8
(SOURCE2_N) P1–9
TP1–11
TP1–12
TP1–14

SOURCE 1 AC VOLTAGE SENSING
(SOURCE1_A) P1–1
(SOURCE1_B) P1–2
(SOURCE1_C) P1–3
(SOURCE1_N) P1–4
TP1–20
TP1–22
TP1–24

FROM NORMAL SOURCE
NN NC NB NA
TP1–5 TP1–3 TP1–1
NTS
LN LC LB LA
ETS
TP2–5 TP2–3 TP2–1
EN EC EB EA
FROM EMERGENCY SOURCE

(RELAY_COIL_K1) P5–2
(RELAY_VDC_1) P5–1
P5–3
P5–5
(RELAY_VDC) P5–7
(RELAY_COIL_K4) P5–8

801 P11–2 TP2–14
800 P11–1 TP2–13
900 P11–7 TP2–16
901 P11–6 TP2–17

NB NA
DS
502
TP2–25
209R
AC AC C.V.
206R
SCR (CN)
CN
801
800

EB EA
DS
201
TP2–23
306R
AC AC C.V.
307R
SCR (CE)
CE
900
901

AUXILIARY CONTACTS *
A4–1 PD1–1 P4–1 TBF–4
PD1–2 P4–2 TBF–5
A4–2 PD1–3 P4–3 TBF–6
PD1–4 P4–4 TBF–7
A3–1 PD1–5 P4–5 TBF–8
PD1–6 P4–6 TBF–9
A3–2 PD1–7 P4–7 TBF–10
PD1–8 P4–8 TBF–11
A4–3 PD1–9 P4–9 TBF–12
PD1–10P4–10 TBF–13
A3–3 PD1–11P4–11 TBF–14
PD1–12P4–12 TBF–15

* A4–(#) CLOSE ON NORMAL
A3–(#) CLOSE ON EMERGENCY

LEGEND

DS – DISCONNECT SWITCH
ETS – EMERGENCY–TRANSFER SWITCH
LCD – LIQUID CRYSTAL DISPLAY
NTS – NORMAL–TRANSFER SWITCH
P(#) – PLUG
SCR(#) – SILICON CONTROLLED RECTIFIER
SW(#) – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TBF – FIELD CONNECTION TERMINAL BLOCK
TP(#) – TEST PLUG

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KGS
150–400A
BYPASS MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89696

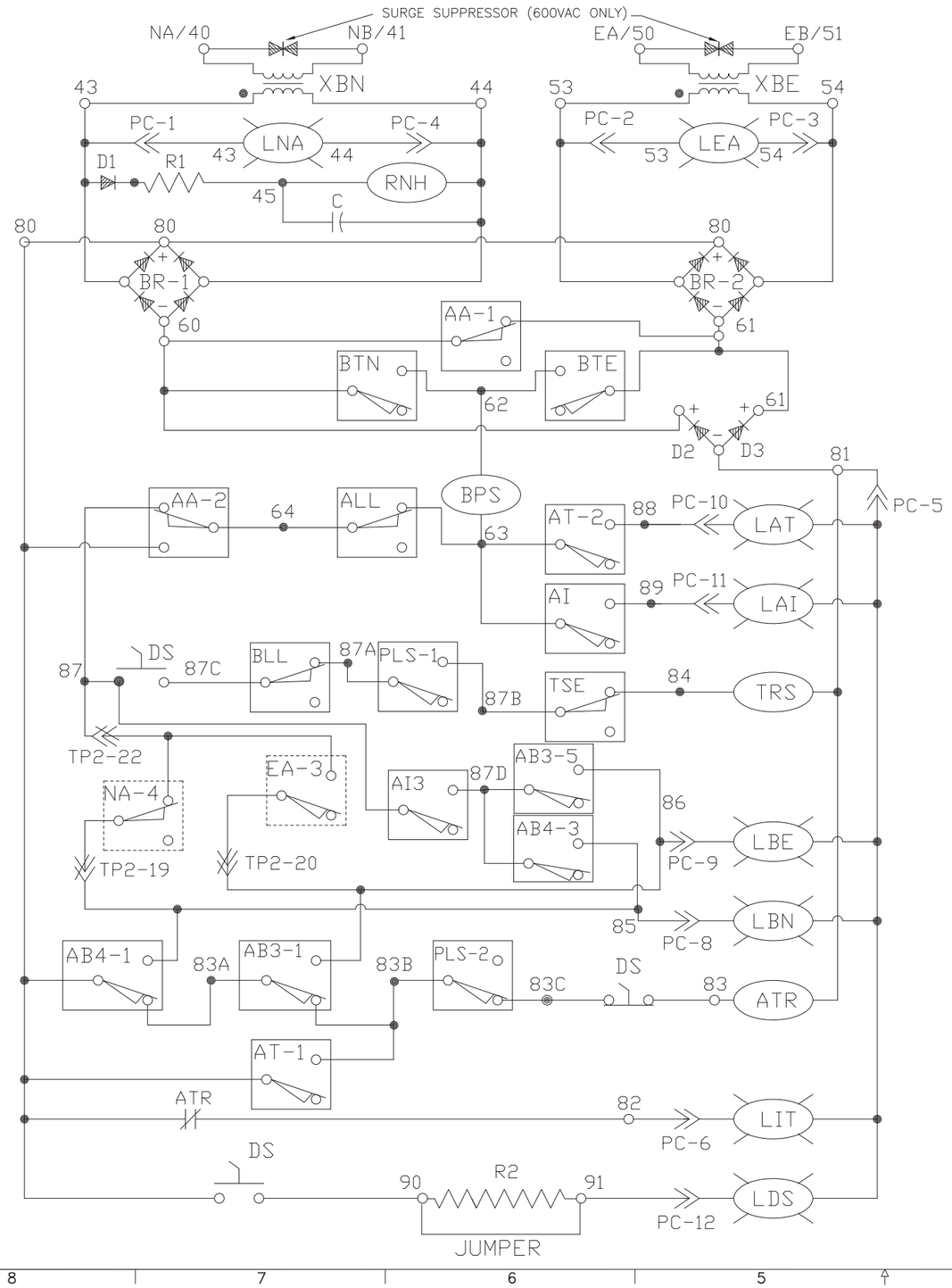
UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC
SCALE / / / CAD NO. SHEET 1–2
PLOTTED DWG. NO. GM89695 D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 1 [CT120983]	BTW	

BYPASS/ISOLATION SCHEMATIC



AA–1 – LIMIT SWITCH, ATS AUTO LOCATION
BTN – LIMIT SWITCH, BYPASS TRANSFER SOURCE 1 (MBH MOVEMENT TO SOURCE 1)
BTE – LIMIT SWITCH, BYPASS TRANSFER SOURCE 2 (MBH MOVEMENT TO SOURCE 2)
BPS – BYPASS SOLENOID
AA–2 – LIMIT SWITCH, ATS AUTO LOCATION
ALL – LIMIT SWITCH, ATS LOCK LOCATION
AT–2 – LIMIT SWITCH, ATS TEST LOCATION
LAT – LIGHT, ATS TEST LOCATION
AI – LIMIT SWITCH, ATS ISOLATE LOCATION
LAI – LIGHT, ATS ISOLATE LOCATION
BLL – LIMIT SWITCH, BYPASS LOCK LOCATION
PLS–1 – PERMISSIVE LIMIT SWITCH
TSE – LIMIT SWITCH, TRANSFER SWITCH ENGAGED
TRS – SOLENOID, TRANSFER RELEASE
NA–4 – LIMIT SWITCH, ATS IN SOURCE 1
EA–3 – LIMIT SWITCH, ATS IN SOURCE 2
LBE – LIGHT, BYPASS SOURCE 2
LBN – LIGHT, BYPASS SOURCE 1
AB4–1 – LIMIT SWITCH, BYPASS SOURCE 1
AB3–1 – LIMIT SWITCH, BYPASS SOURCE 2
PLS–2 – PERMISSIVE LIMIT SWITCH
ATR – AUTO/TEST RELAY
AT–1 – LIMIT SWITCH, ATS TEST LOCATION
LIT – LIGHT, ATS INHIBIT
DS – ATS DISCONNECT SWITCH
LDS – LIGHT, DISCONNECT SWITCH INHIBIT POSITION
ALH – ATS LOCATION HANDLE
MBH – MANUAL BYPASS HANDLE
XBN – BYPASS SOURCE 1 CONTROL TRANSFORMER
XBE – BYPASS SOURCE 2 CONTROL TRANSFORMER
LNA – SOURCE 1 AVAILABLE LIGHT
LEA – SOURCE 2 AVAILABLE LIGHT
RNH – NORMALLY HELD RELAY
D1 – DIODE
R1 – RESISTOR, RNH
C – CAPACITOR, RNH
BR–1,2,3 – BRIDGE RECTIFIER

LOCATED ON ATS

LOCATED ON BYPASS

NOTES

ATS SHOWN IN SOURCE 1 POSITION WITH NO POWER AVAILABLE.

LEGEND

- WIRE CONNECTION
- WIRE ON TERMINAL BLOCK
- WIRE IN INTERCONNECT PLUG

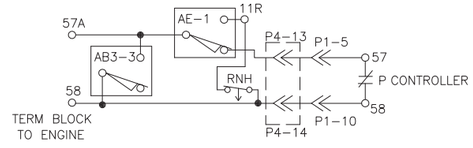
LIMIT SWITCH CHART

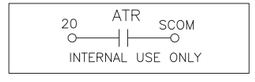
X = ACTUATED	ATS LOCATION				ATS MODE		BYPASS MODE		
	AUTO	TEST	ISO	REMOVE	SOURCE 1	SOURCE 2	SOURCE 1	SOURCE 2	OPEN
AA	X								
AT		X							
AI			X	X					
ALL	X	X	X	X					
TSE	X	X	X						
AE			X	X					
NA					X				
EA						X			
AB4							X		
AB3								X	
BLL							X	X	X
PLS	ACTIVATED WHEN ALH IS OPERATED								

ENGINE START SCHEMATIC

ENGINE START CIRCUIT

AE–1 – LIMIT SWITCH, ENGINE START TRANSFER
AB3–3– LIMIT SWITCH, BYPASS SOURCE 2





MODEL KGS
150–400A
BYPASS MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89696

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX± .010 ANGLES± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

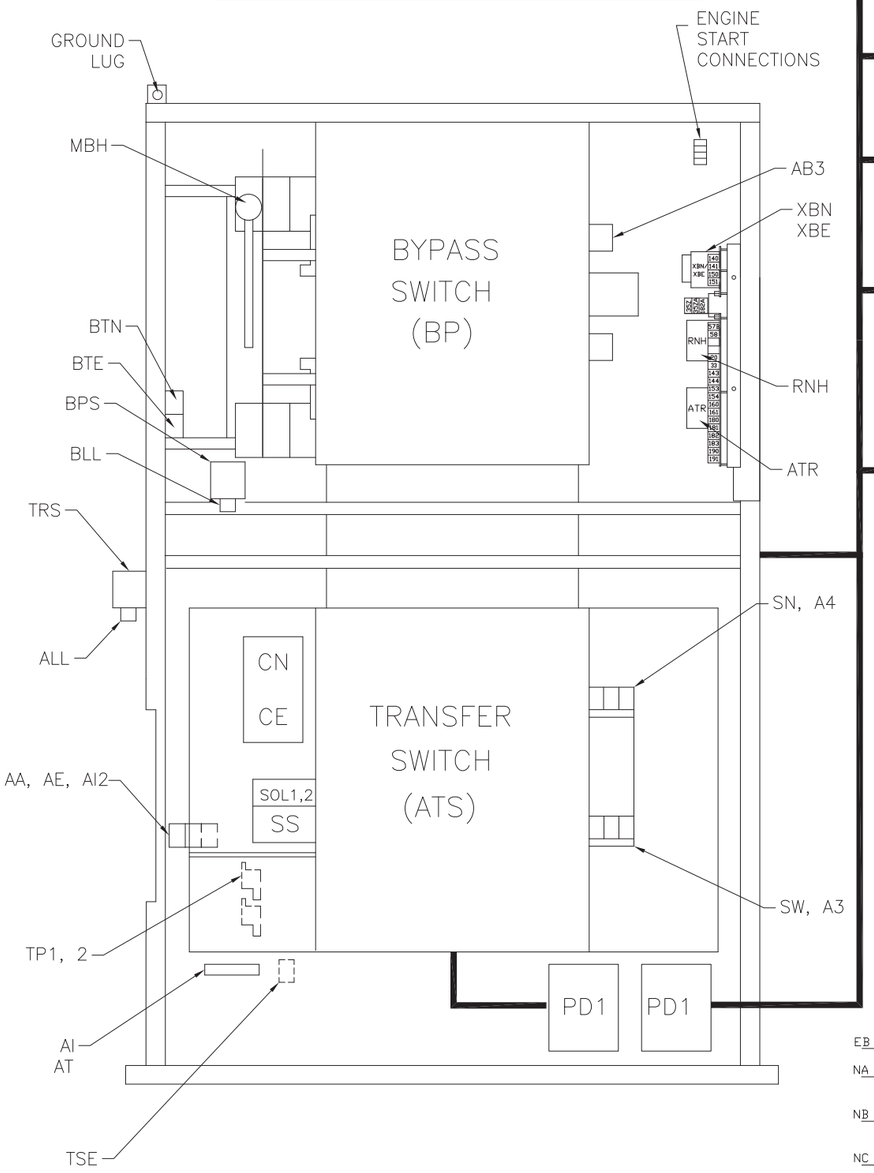
TITLE: DIAGRAM, SCHEMATIC

SCALE / / / | CAD NO. | SHEET 2–2

PLOTTED | DWG. NO. GM89695 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

BYPASS/ISOLATION TRANSFER SWITCH



P1 — TO MPAC POWER/CONTROL BOARD SHEET 4

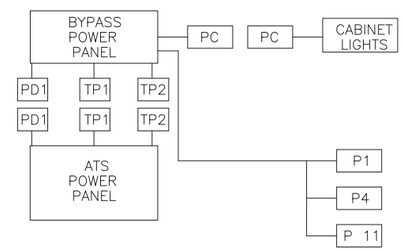
P11

PC — TO DOOR LIGHTS

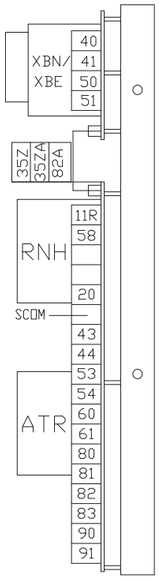
DS

P4

INTERCONNECTION PLUG DIAGRAM



BYPASS SUBPANEL



WIRE NUMBERING CHART

LIMIT SWITCHES	C	NC	NO
AA–1	60		61
AA–2	64	80	87
AB3–1	83A	83B	86
AB3–3	58		57A
AB3–5	87D		86
AB4–1	80	83A	85
AB4–3	87D		85
AE–1	57A	57	11R
AI	63		89
AI3	87		87D
ALL	64		63
AT–1	80		83B
AT–2	63		88
BLL	87C		87A
BTE	61		62
BTN	60		62
EA–3	86		87
NA–4	85		87
PLS–1	87A		87B
PLS–2	83B	83C	
TSE	87B		84

INTERCONNECT PLUGS

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO	4
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO	8
9	A4–3 COM	A4–3 NO	A3–3 COM	A3–3 NO	12
13	57	58	20	SCOM	16
17					20
21					24

PC PLUG

1 — MALE PLUG — 4

43	53	54	44
81	82		85
86	88	89	91

9 — 12

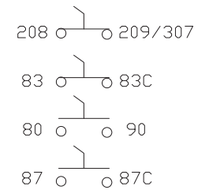
PD1 PLUG

1 — MALE PLUG — 4

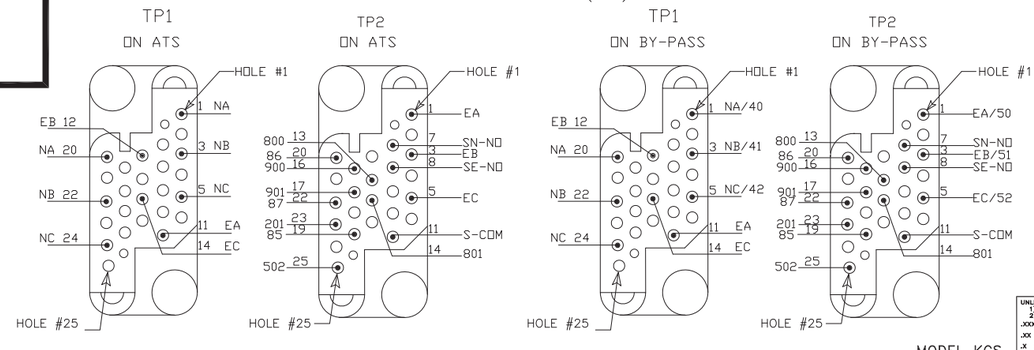
CA4–1	A4–1	CA4–2	A4–2
CA3–1	A3–1	CA3–2	A3–2
CA4–3	A4–3	CA3–3	A3–3

9 — 12

DISCONNECT SWITCH (DS)



ATS TEST PLUGS (TP)



MODEL KGS
150–400A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89695

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
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.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	12–3–13
CHECKED	MTL	12–3–13
APPROVED	HCC	12–3–13

TITLE: DIAGRAM, WIRING

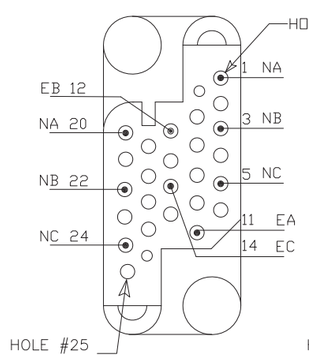
SCALE: / / / | CAD NO. | SHEET 1–4

PLOTTED | DWG. NO. GM89696 | D

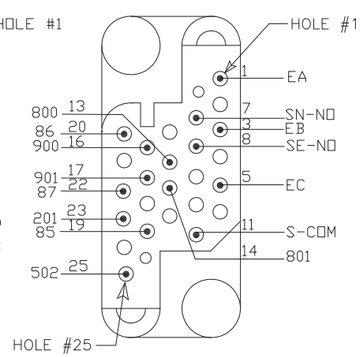
REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION
PD1	CA4–1	PD1–1	LIMIT SWITCH A4–1 (NO)	
	A4–1	PD1–2	LIMIT SWITCH A4–1 (NO)	
	CA4–2	PD1–3	LIMIT SWITCH A4–2 (NO)	
	A4–2	PD1–4	LIMIT SWITCH A4–2 (NO)	
	CA4–3	PD1–9	LIMIT SWITCH A4–3 (NO)	
	A4–3	PD1–10	LIMIT SWITCH A4–3 (NO)	
	CA3–1	PD1–5	LIMIT SWITCH A3–1 (NO)	
	A3–1	PD1–6	LIMIT SWITCH A3–1 (NO)	
	CA3–2	PD1–7	LIMIT SWITCH A3–2 (NO)	
	A3–2	PD1–8	LIMIT SWITCH A3–2 (NO)	
	CA3–3	PD1–11	LIMIT SWITCH A3–3 (NO)	
	A3–3	PD1–12	LIMIT SWITCH A3–3 (NO)	
TP1/TP2 ATS SIDE	NA	TP1–1	TP1–20	
	NB	TP1–3	SCR–CN (AC)	TP1–22
	NC	TP1–5	TP1–24	
	EA	TP2–1	TP1–11	
	EB	TP2–3	SCR–CE (AC)	TP1–12
	EC	TP2–5	TP1–14	
	SN–NO	TP2–7	LIMIT SWITCH SN (NO)	
	SE–NO	TP2–8	LIMIT SWITCH SE (NO)	
	S–COM	TP2–11	LIMIT SWITCH SN (COM)	LIMIT SWITCH SE (COM)
	85	TP2–19	LIMIT SWITCH NA–4 (COM)	
	86	TP2–20	LIMIT SWITCH EA–3 (COM)	
	87	TP2–22	LIMIT SWITCH NA–4 (NO)	LIMIT SWITCH EA–3 (NO)
	800	TP2–13	SCR–CN (24V)	
	801	TP2–14	SCR–CN (24V)	
	900	TP2–16	SCR–CE (24V)	
	901	TP2–17	SCR–CE (24V)	
	201	TP2–23	SCR–CE (AC)	
	502	TP2–25	SCR–CN (AC)	

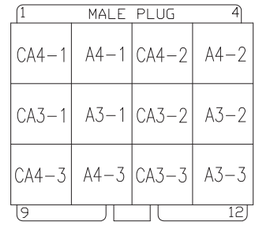
TP1
ON ATS



TP2
ON ATS



PD1 PLUG



MODEL KGS
150–400A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89695

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 2–4

PLOTTED | DWG. NO. GM89696 | D

REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	DFS	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	CA4-1	PD1-1	P4-1			
	A4-1	PD1-2	P4-2			
	CA4-2	PD1-3	P4-3			
	A4-2	PD1-4	P4-4			
	CA4-3	PD1-9	P4-9			
	A4-3	PD1-10	P4-10			
	CA3-1	PD1-5	P4-5			
	A3-1	PD1-6	P4-6			
	CA3-2	PD1-7	P4-7			
	A3-2	PD1-8	P4-8			
	CA3-3	PD1-11	P4-11			
	A3-3	PD1-12	P4-12			
TP1/TP2 BYPASS SIDE	NA/40	TP1-1	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	NB/41	TP1-3	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	NC/42	TP1-5	CUST CONNECT – PHASE C			
	EA/50	TP2-1	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	EB/51	TP2-3	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	EC/52	TP2-5	CUST CONNECT – PHASE C			
	NA	TP1-20	DISCONNECT SWITCH (NO)	P1-1		
	NB	TP1-22	P1-2			
	NC	TP1-24	P1-3			
	NN	CUST CONNECT NEUTRAL	P1-4			
	EA	TP1-11	DISCONNECT SWITCH (NO)	P1-6		
	EB	TP1-12	P1-7			
	EC	TP1-14	P1-8			
	EN	CUST CONNECT NEUTRAL	P1-9			
	SN-NO	TP2-7	P1-12			
	SE-NO	TP2-8	P1-13			
	S-COM	TP2-11	P1-11			
	85	TP2-19	LIMIT SWITCH AB4-1 (NO)	LIMIT SWITCH AB4-3 (NO)	PC-8	
	86	TP2-20	LIMIT SWITCH AB3-1 (NO)	LIMIT SWITCH AB3-5 (NO)	PC-9	
	87	TP2-22	DISCONNECT SWITCH (NC)	LIMIT SWITCH AI3 (COM)	LIMIT SWITCH AA-2 (NO)	
	800	TP2-13	P11-1			
	801	TP2-14	P11-2			
	900	TP2-16	P11-7			
	901	TP2-17	P11-6			
	201	TP2-23	DISCONNECT SWITCH (NO)			
	502	TP2-25	DISCONNECT SWITCH (NO)			
CONNECTOR CN2	11R	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AE-1 (NC)			
	58	P1-10	BYPASS LOGIC ASSEMBLY	ENGINE START T-BLOCK	LIMIT SWITCH AB3-3 (COM)	P4-14
	20	BYPASS LOGIC ASSEMBLY	P4-15			
	SCOM	BYPASS LOGIC ASSEMBLY	P4-16			
	43	BYPASS LOGIC ASSEMBLY	PC-1			
	44	BYPASS LOGIC ASSEMBLY	PC-4			
	53	BYPASS LOGIC ASSEMBLY	PC-2			
	54	BYPASS LOGIC ASSEMBLY	PC-3			
	60	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA-1 (COM)	LIMIT SWITCH BTN (COM)		
	61	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA-1 (NO)	LIMIT SWITCH BTE (COM)		
	80	DISCONNECT SWITCH (NC)	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AB4-1 (COM)	LIMIT SWITCH AT-1 (COM)	LIMIT SWITCH AA-2 (NC)
	81	BYPASS LOGIC ASSEMBLY	SOLENOID TRS	PC-5		
	82	BYPASS LOGIC ASSEMBLY	PC-6			
	83	BYPASS LOGIC ASSEMBLY	DISCONNECT SWITCH (NO)			
	90	BYPASS LOGIC ASSEMBLY	DISCONNECT SWITCH (NC)			
	91	BYPASS LOGIC ASSEMBLY	PC-12			

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION
	83A	LIMIT SWITCH AB3-1 (COM)	LIMIT SWITCH AB4-1 (NC)		
	83B	LIMIT SWITCH AB3-1 (NC)	LIMIT SWITCH PLS-2 (COM)	LIMIT SWITCH AT-1 (NO)	
	83C	DISCONNECT SWITCH (NO)	LIMIT SWITCH PLS-2 (NC)		
	87A	LIMIT SWITCH PLS-1 (COM)	LIMIT SWITCH BLL (NO)		
	87B	LIMIT SWITCH PLS-1 (NO)	LIMIT SWITCH TSE (COM)		
	87C	DISCONNECT SWITCH (NC)	LIMIT SWITCH BLL (COM)		
	87D	LIMIT SWITCH AB3-5 (COM)	LIMIT SWITCH AB4-3 (COM)	LIMIT SWITCH AI3 (NO)	
	84	LIMIT SWITCH TSE (NO)	SOLENOID TRS		
	88	LIMIT SWITCH AT-2 (NO)	PC-10		
	89	LIMIT SWITCH AI (NO)	PC-11		
	64	LIMIT SWITCH AA-2 (COM)	LIMIT SWITCH ALL (COM)		
	63	LIMIT SWITCH ALL (NO)	SOLENOID BPS	LIMIT SWITCH AT-2 (COM)	LIMIT SWITCH AI (COM)
	62	LIMIT SWITCH BTN (NO)	SOLENOID BPS	LIMIT SWITCH BTE (NO)	
	57	P1-5	LIMIT SWITCH AE-1 (NC)	P4-13	
	57A	ENGINE START T-BLOCK	LIMIT SWITCH AE-1 (COM)	LIMIT SWITCH AB3-3 (NO)	
CONNECTOR PC VIA 46W-2001G	43	PC-1	LIGHT – SOURCE 1 AVAILABLE		
	53	PC-2	LIGHT – SOURCE 2 AVAILABLE		
	54	PC-3	LIGHT – SOURCE 2 AVAILABLE		
	44	PC-4	LIGHT – SOURE 1 AVAILABLE		
	81	PC-5	LIGHTS – COMMON		
	82	PC-6	LIGHT – ATS INHIBIT		
	85	PC-8	LIGHT – BYPASS SOURCE 1		
	86	PC-9	LIGHT – BYPASS SOURCE 2		
	88	PC-10	LIGHT – ATS TEST LOC.		
	89	PC-11	LIGHT – ATS ISOLATE LOC.		
	91	PC-12	LIGHT – DISCONNECT INHIBIT		

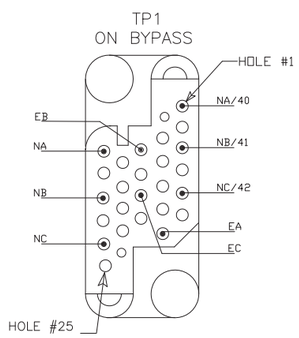
P1 PLUG

NA	NB	NC	NN	57	
EA	EB	EC	EN	58	
S-COM	SN-NO	SE-NO			

P4 PLUG

CA4-1	A4-1	CA4-2	A4-2	
CA3-1	A3-1	CA3-2	A3-2	
CA4-3	A4-3	CA3-3	A3-3	
57	58	20	SCOM	

TP1 ON BYPASS



P11 PLUG MOLEX

800	801				
901	900				

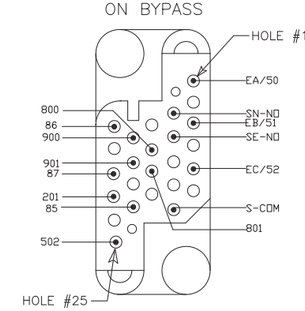
CN2

11R
58
20
SCOM
43
44
53
54
60
61
80
81
82
83
90
91

PD1

CA4-1	A4-1	CA4-2	A4-2
CA3-1	A3-1	CA3-2	A3-2
CA4-3	A4-3	CA3-3	A3-3

TP2 ON BYPASS



PC

43	53	54	44	
81	82		85	
86	88	89	91	

MODEL KGS
150-400A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89695

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

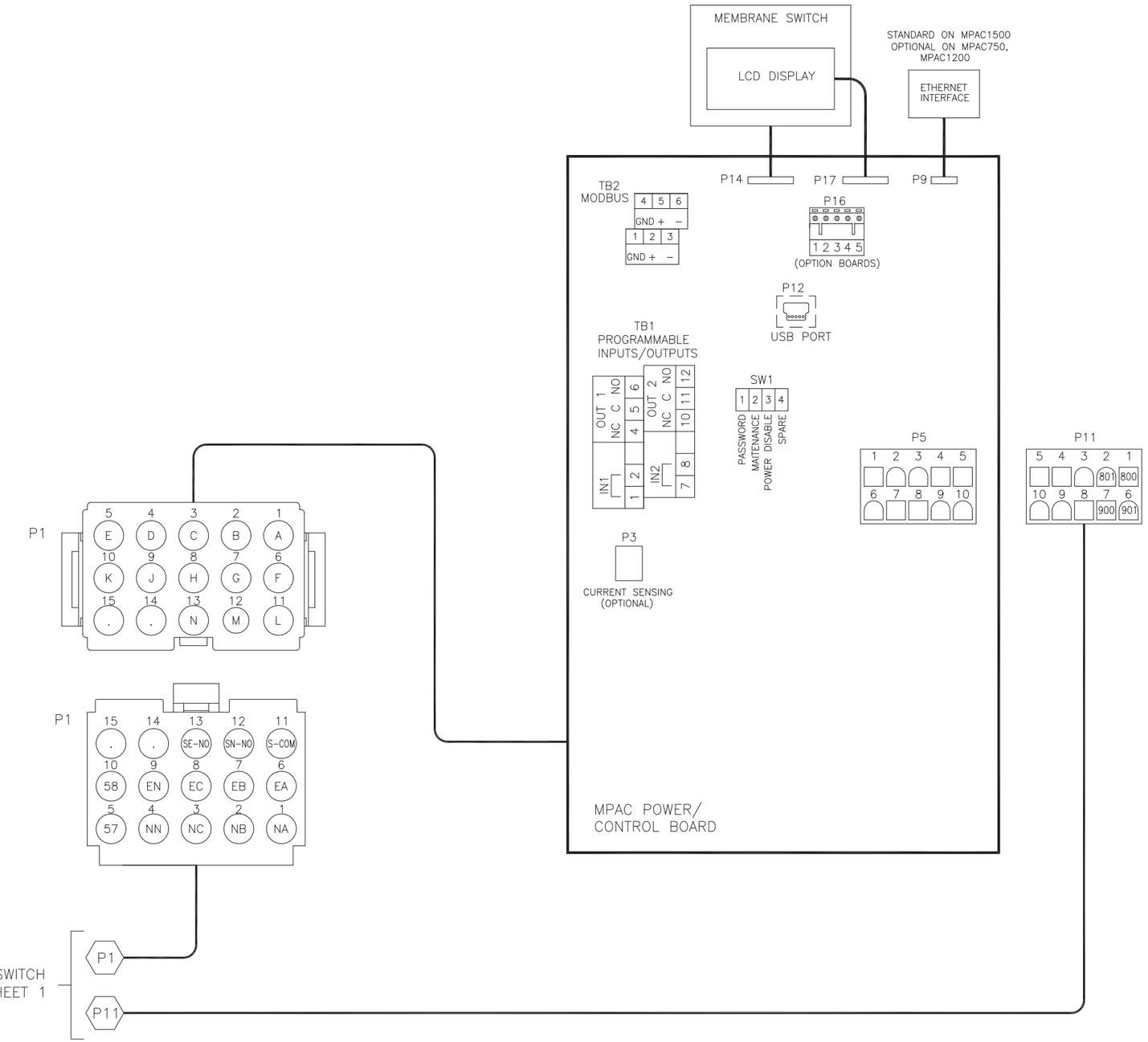
APPROVALS		DATE
DRAWN	DFS	12-3-13
CHECKED	MTL	12-3-13
APPROVED	HCC	12-3-13

TITLE: DIAGRAM, WIRING

SCALE: / / / | CAD NO. | SHEET 3-4

PLOTTED | DWG. NO. GM89696 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–5) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	DFS	



MODEL KGS
150–400A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89695

UNLESS OTHERWISE SPECIFIED –
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FRACTIONS ±

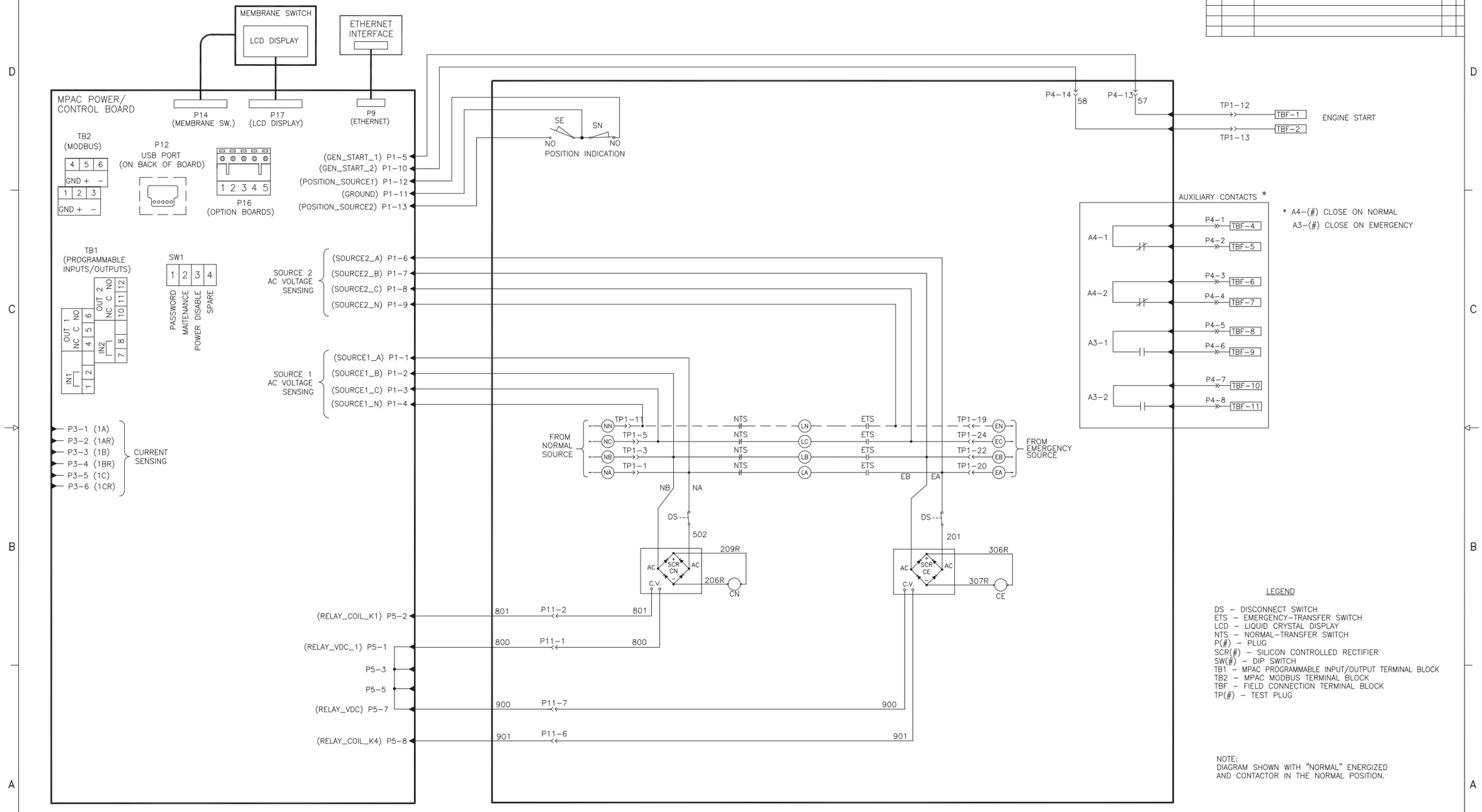
APPROVALS		DATE
DRAWN	DFS	12–3–13
CHECKED	MTL	12–3–13
APPROVED	HCC	12–3–13

KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

TITLE: DIAGRAM, WIRING

SCALE: / / / | CAD NO. | SHEET 4–4
PLOTTED | DWG. NO. GM89696 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



LEGEND

DS – DISCONNECT SWITCH
ETS – EMERGENCY–TRANSFER SWITCH
LCD – LIQUID CRYSTAL DISPLAY
NTS – NORMAL–TRANSFER SWITCH
P(#) – PLUG
SCR(#) – SILICON CONTROLLED RECTIFIER
SW(#) – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TBF – FIELD CONNECTION TERMINAL BLOCK
TP(#) – TEST PLUG

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KGS
600–1200A
BYPASS MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89698

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2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 MAX.
FRACTIONS ±

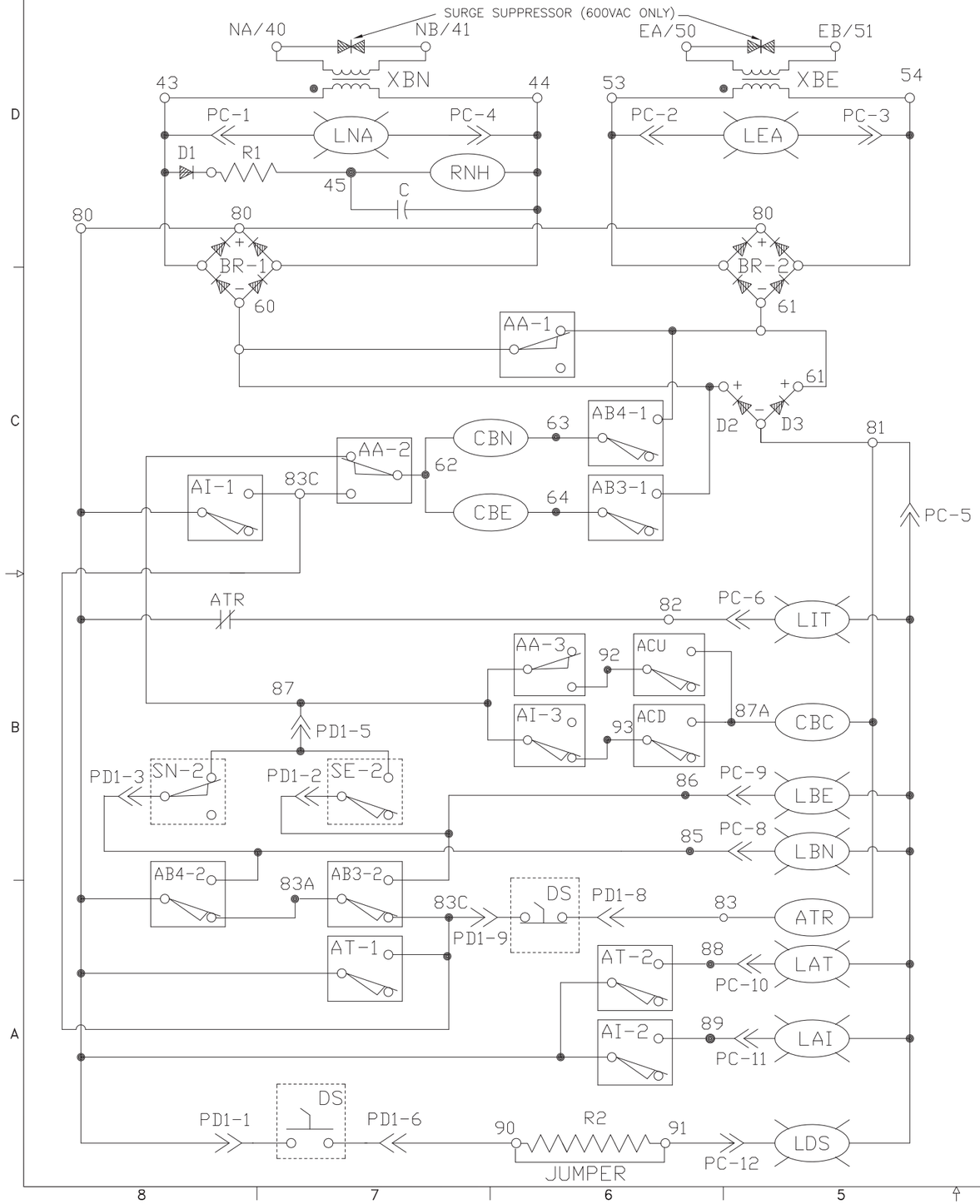
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC

SCALE / / / | CAD NO. | SHEET 1–2
PLOTTED | DWG. NO. GM89697 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 1 [CT120983]	BTW	

BYPASS/ISOLATION SCHEMATIC



XBN – BYPASS SOURCE 1 CONTROL TRANSFORMER
XBE – BYPASS SOURCE 2 CONTROL TRANSFORMER
LNA – SOURCE 1 AVAILABLE LIGHT
LEA – SOURCE 2 AVAILABLE LIGHT
RNH – NORMALLY HELD RELAY
D1,2,3 – DIODE
R1 – RESISTOR, RNH
C – CAPACITOR, RNH
BR–1,2 – BRIDGE RECTIFIER
AA–1 – LIMIT SWITCH, ATS AUTO LOCATION
AA–3 – LIMIT SWITCH, ATS AUTO LOCATION

AB4–1 – LIMIT SWITCH, BYPASS SOURCE 1
CBN – SOURCE 1 TRANSFER OPERATOR
AA–2 – LIMIT SWITCH, ATS IN AUTO
AB3–1 – LIMIT SWITCH, BYPASS SOURCE 2
CBE – SOURCE 2 TRANSFER OPERATOR
ACD – LIMIT SWITCH, CRANK HANDLE
ACU – ENGAGED
LIT – ATS INHIBIT LIGHT
AI–1 – LIMIT SWITCH, ATS IN ISOLATE
AI–3 – LIMIT SWITCH, ATS IN ISOLATE
CH–1 – LIMIT SWITCH
CBC – CRANK SOLENOID
SN2 – LIMIT SWITCH – ATS, SOURCE 1
SE2 – LIMITS SWITCH – ATS, SOURCE 2
LBE – LIGHT, BYPASS SOURCE 2
LBN – LIGHT, BYPASS SOURCE 1
AB4–2 – LIMIT SWITCH, BYPASS SOURCE 1
AB3–2 – LIMIT SWITCH, BYPASS SOURCE 2
ATR – AUTO/TEST RELAY
AT–1 – LIMIT SWITCH, ATS TEST LOCATION
LAT – ATS TEST LOCATION
AT–2 – LIMIT SWITCH, ATS IN TEST
LAI – ATS ISOLATE LIGHT
AI–2 – LIMIT SWITCH, ATS IN ISOLATE
DS – ATS DISCONNECT SWITCH
LDS – DISCONNECT SWITCH, INHIBIT POSITION LIGHT
R2 – RESISTOR, BRAIN BOX ASSEMBLY

LOCATED ON ATS

LOCATED ON BYPASS

LIMIT SWITCH CHART

X = ACTUATED	ATS LOCATION				ATS MODE		BYPASS MODE		
	AUTO	TEST	ISO	REMOVE	SOURCE 1	SOURCE 2	SOURCE 1	SOURCE 2	OPEN
AA	X								
AT		X							
AI			X	X					
AE			X	X					
SN					X				
SE						X			
AB4							X		
AB3								X	

ENGINE START SCHEMATIC

AE–1 – LIMIT SWITCH, ENGINE START TRANSFER
AB3–3– LIMIT SWITCH, BYPASS SOURCE 2

AUTO/TEST RELAY CONTACT LOCATED ON BYPASS SUBPANEL

SOURCE 1/SOURCE 2 TRANSFER PERMIT CIRCUIT. (ALH IN AUTO AND TEST LOCATION WITH DS IN AUTO POSITION)

INTERNAL USE ONLY

NOTES

ATS SHOWN IN SOURCE 1 POSITION WITH NO POWER AVAILABLE.

LEGEND

- WIRE CONNECTION
- WIRE ON TERMINAL BLOCK
- WIRE IN INTERCONNECT PLUG

MODEL KGS 600–1200A
BYPASS MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89698

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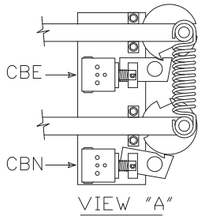
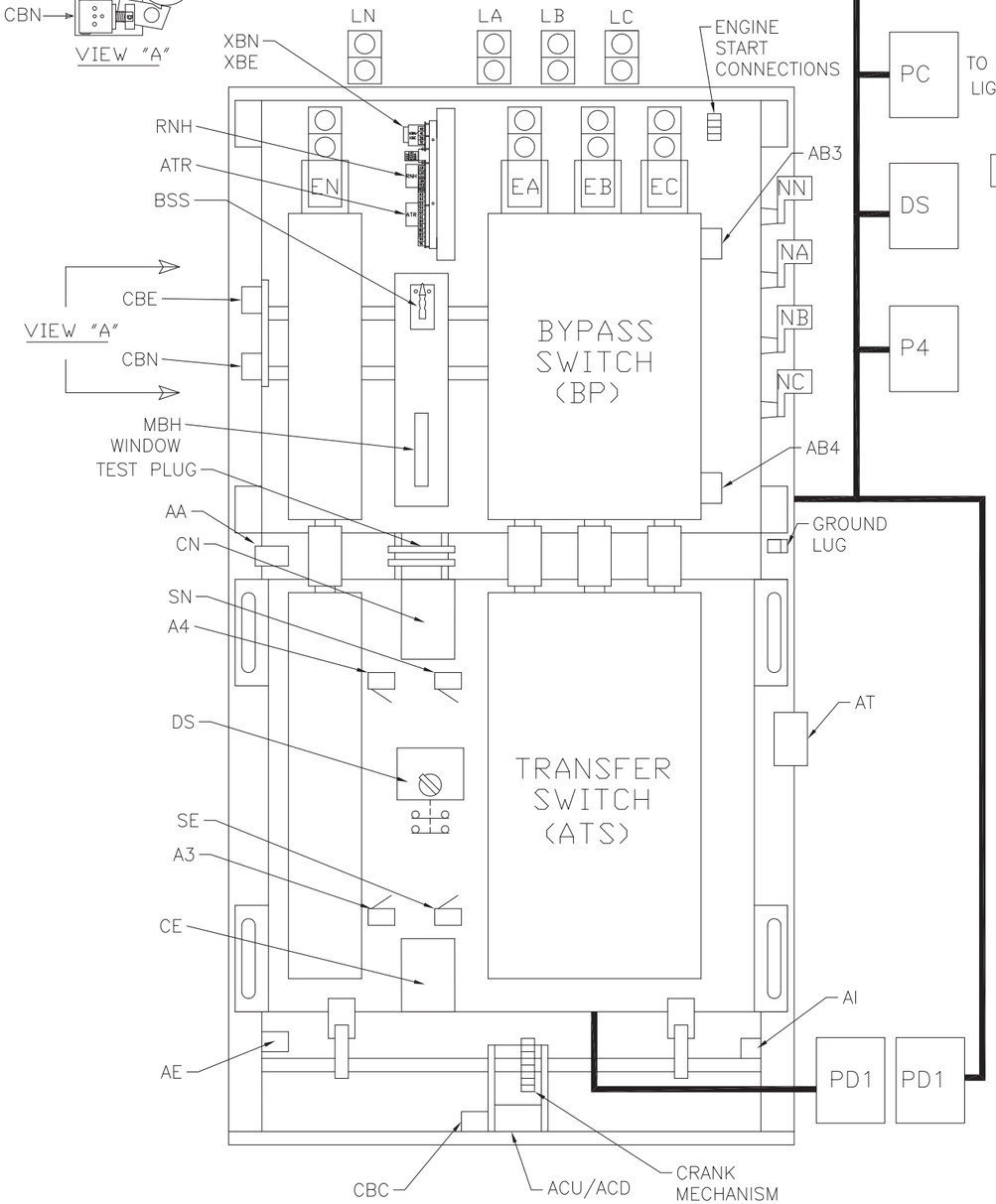
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

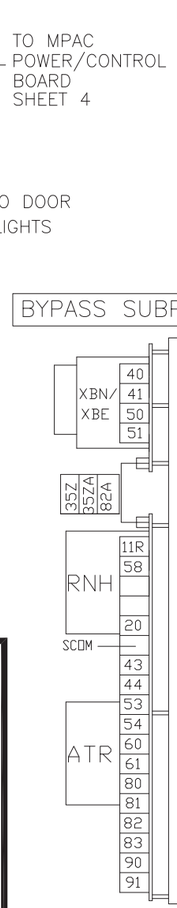
TITLE: DIAGRAM, SCHEMATIC
SCALE: / / / CAD NO. SHEET 2–2
PLOTTED DWG. NO. GM89697 D

REV	DATE	REVISION	BY	MFG
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	BTW	

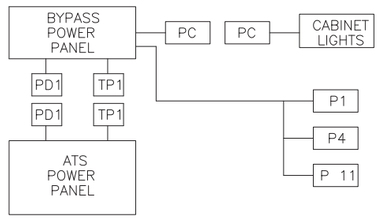


BYPASS/ISOLATION TRANSFER SWITCH

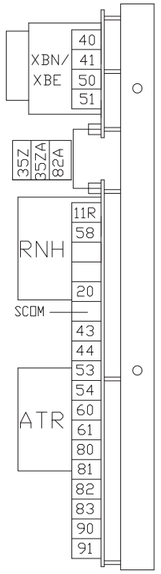




INTERCONNECTION PLUG DIAGRAM



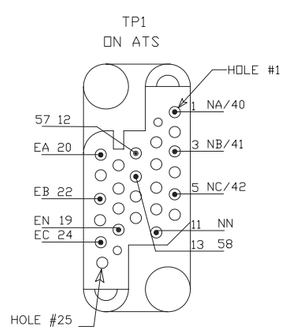
BYPASS SUBPANEL

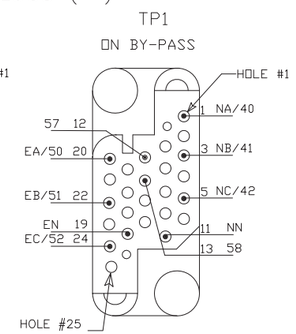


WIRE NUMBERING CHART

LIMIT SWITCHES	C	NC	NO
AA–1	60		61
AA–2	62	83C	87
AA–3	87	92	
AB3–1	64		60
AB3–2	83A	83C	86
AB3–3	58		57A
AB4–1	63		61
AB4–2	80	83A	85
ACD	93		87A
ACU	92		87A
AE–1	57A	57	11R
AI–1	80		83C
AI–2	80		89
AI–3	87	93	
AT–1	80		83C
AT–2	80		88
SE–2	86		87
SN–2	85		87

ATS TEST PLUGS (TP)





INTERCONNECT PLUGS

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO	4
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO	8
9					12
13	57	58	20	SCOM	16
17					20
21					24

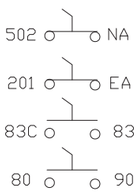
PC PLUG

1 MALE PLUG 4			
43	53	54	44
81	82		85
86	88	89	91
9			12

PD1 PLUG

1 MALE PLUG 5				
80	86	85		87
90		83	83C	
20	SCOM			
11				15

DISCONNECT SWITCH (DS)



MODEL KGS
600–1200A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89697

UNLESS OTHERWISE SPECIFIED –
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.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12-3-13
CHECKED MTL	12-3-13
APPROVED HCC	12-3-13

TITLE: DIAGRAM, WIRING

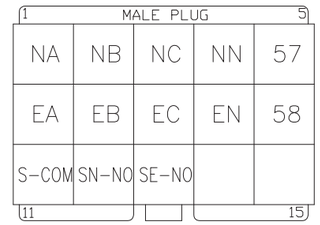
SCALE: / / / | CAD NO. | SHEET 1-4

PLOTTED | DWG. NO. GM89698 | D

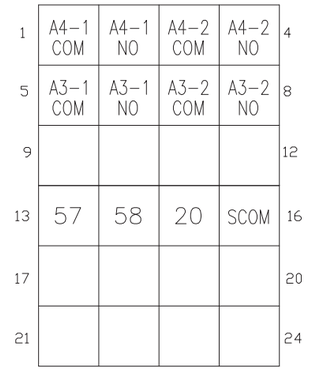
REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1-11	P4-15			
	80	PD1-1	DISCONNECT SWITCH (NC)			
	83	PD1-8	DISCONNECT SWITCH (NO)			
	83C	PD1-9	DISCONNECT SWITCH (NO)			
	85	PD1-3	LIMIT SWITCH SN-2 (COM)			
	86	PD1-2	LIMIT SWITCH SE-2 (COM)			
	87	PD1-5	LIMIT SWITCH SN-2 (NO)	LIMIT SWITCH SE-2 (NO)		
	90	PD1-6	DISCONNECT SWITCH (NC)			
	SCOM	PD1-12	P4-16			
P1	NA	SEE TP1				
	NB	SEE TP1				
	NC	SEE TP1				
	NN	SEE TP1				
	EA	SEE TP1				
	EB	SEE TP1				
	EC	SEE TP1				
	EN	SEE TP1				
	SN-NO	P1-12	LIMIT SWITCH SN (NO)			
	SE-NO	P1-13	LIMIT SWITCH SE (NO)			
	S-COM	P1-11	LIMIT SWITCH SN (COM)	LIMIT SWITCH SE (COM)	LIMIT SWITCH SEO (COM)	LIMIT SWITCH SNO (COM)
	57	SEE TP1				
	58	SEE TP1				
P4	CA4-1	LIMIT SWITCH A4-1 (COM)	P4-1			
	A4-1	LIMIT SWITCH A4-1 (NO)	P4-2			
	CA4-2	LIMIT SWITCH A4-2 (COM)	P4-3			
	A4-2	LIMIT SWITCH A4-2 (NO)	P4-4			
	CA3-1	LIMIT SWITCH A3-1 (COM)	P4-5			
	A3-1	LIMIT SWITCH A3-1 (NO)	P4-6			
	CA3-2	LIMIT SWITCH A3-2 (COM)	P4-7			
	A3-2	LIMIT SWITCH A3-2 (NO)	P4-8			
	57	SEE TP1				
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	SNO-NO	P4-17	LIMIT SWITCH SNO (NO)			
	SEO-NO	P4-18	LIMIT SWITCH SEO (NO)			
P11	800	P11-1	SCR-CN (CV)	SCR-CEO (CV)		
	801	P11-2	SCR-CN (CV)			
	808	P11-4	SCR-CEO (CV)			
	900	P11-7	SCR-CE (CV)	SCR-CNO (CV)		
	901	P11-8	SCR-CE (CV)			
	908	P11-6	SCR-CNO (CV)			
TP1	NA	TP1-1	DISCONNECT BLOCK (COM)	P1-1		
	NB	TP1-3	SCR-CN (AC)	P1-2		
	NC	TP1-5	P1-3			
	NN	TP1-11	P1-4			
	EA	TP1-20	DISCONNECT BLOCK (COM)	P1-6		
	EB	TP1-22	SCR-CE (AC)	P1-7		
	EC	TP1-24	P1-8			
	EN	TP1-19	P1-9			
	57	TP1-12	P4-13	P1-5		
	58	TP1-13	P4-14	P1-10		
	201	DISCONNECT SWITCH (NC)	SCR-CE (AC)	SCR-CNO (AC)		
	502	DISCONNECT SWITCH (NC)	SCR-CN (AC)	SCR-CEO (AC)		

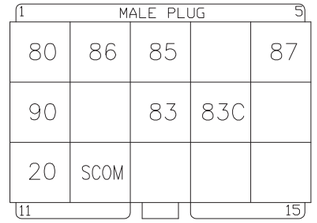
P1 PLUG



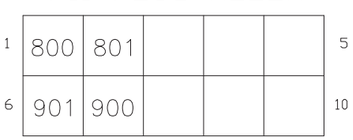
P4 PLUG



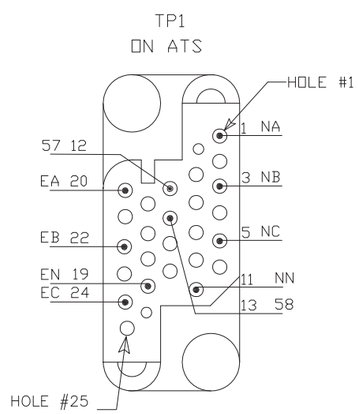
PD1 PLUG



P11 PLUG MOLEX



TP1 ON ATS



MODEL KGS
600-1200A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89697

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.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12-3-13
CHECKED MTL	12-3-13
APPROVED HCC	12-3-13

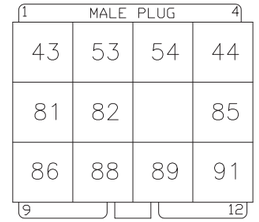
TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 2-4
PLOTTED | DWG. NO. GM89698 | D

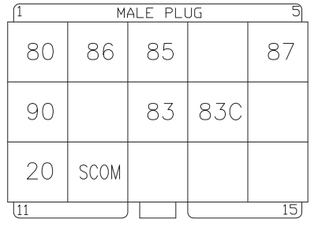
PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1–11	CN2			
	80	PD1–1	AI–2 (COM)	AT–2 (COM)	AT–1 (COM)	AB4–2 (COM)
			AI–1 (COM)	BYPASS ASSEMBLY LOGIC (CN2)		
	83	PD1–8	CN2			
	83C	PD1–9	AB3–2 (NC)	AT–1 (NO)	AI–1 (NC)	AA–2 (NC)
	85	PD1–3	AB4–2 (NO)	PC–8		
	86	PD1–2	AB3–2 (NO)	PC–9		
	87	PD1–5	AA–2 (NO)	AA–3 (COM)	AI–3 (COM)	
	90	PD1–6	CN2			
	SCOM	PD1–12	CN2			
TP1	NA	TP1–1	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	NB	TP1–3	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	NC	TP1–5	CUST CONNECT – PHASE C			
	NN	TP1–11	CUST CONNECT – NEUTRAL			
	EA	TP1–20	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	EB	TP1–22	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	EC	TP1–24	CUST CONNECT – PHASE C			
	EN	TP1–19	CUST CONNECT – NEUTRAL			
	57	TP1–12	AE–1 (NC)			
	58	TP1–13	BYPASS ASSEMBLY LOGIC (CN2)	AB3–3 (COM)	T–BLOCK. ENGINE START	
CONNECTOR CN2	11R	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AE–1 (NO)			
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	43	BYPASS LOGIC ASSEMBLY	PC–1			
	44	BYPASS LOGIC ASSEMBLY	PC–4			
	53	BYPASS LOGIC ASSEMBLY	PC–2			
	54	BYPASS LOGIC ASSEMBLY	PC–3			
	60	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (COM)	LIMIT SWITCH AB3–1 (NO)		
	61	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (NO)	LIMIT SWITCH AB4–1 (NO)		
	80	SEE PD1				
	81	BYPASS LOGIC ASSEMBLY	SOLENOID CBC	PC–5		
	82	BYPASS LOGIC ASSEMBLY	PC–6			
	83	SEE PD1				
	90	SEE PD1				
	91	BYPASS LOGIC ASSEMBLY	PC–12			
	57A	T–BLOCK ENGINE START	LIMIT SWITCH AB3–3 (NO)	LIMIT SWITCH AE–1 (COM)		
	62	LIMIT SWITCH AA–2 (COM)	SOLENOID CBN	SOLENOID CBE		
	63	SOLENOID CBN	LIMIT SWITCH AB4–1 (COM)			
	64	SOLENOID CBE	LIMIT SWITCH AB3–1 (COM)			
	83A	LIMIT SWITCH AB3–2 (COM)	LIMIT SWITCH AB4–2 (NC)			
	87A	LIMIT SWITCH ACU (NO)	LIMIT SWITCH ACD (NO)	SOLENOID CBC		
	88	LIMIT SWITCH AT–2 (NO)	PC–10			
	89	LIMIT SWITCH AI –2 (NO)	PC–11			
	92	LIMIT SWITCH AA–3 (NC)	ACU (COM)			
	93	LIMIT SWITCH AI –3 (NC)	ACD (COM)			
CONNECTOR PC VIA 46W–2001G	43	PC–1	LIGHT – SOURCE 1 AVAILABLE			
	53	PC–2	LIGHT – SOURCE 2 AVAILABLE			
	54	PC–3	LIGHT – SOURCE 2 AVAILABLE			
	44	PC–4	LIGHT – SOURE 1 AVAILABLE			
	81	PC–5	LIGHTS – COMMON			
	82	PC–6	LIGHT – ATS INHIBIT			
	85	PC–8	LIGHT – BYPASS SOURCE 1			
	86	PC–9	LIGHT – BYPASS SOURCE 2			
	88	PC–10	LIGHT – ATS TEST LOC.			
	89	PC–11	LIGHT – ATS ISOLATE LOC.			
	91	PC–12	LIGHT – DISCONNECT INHIBIT			

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

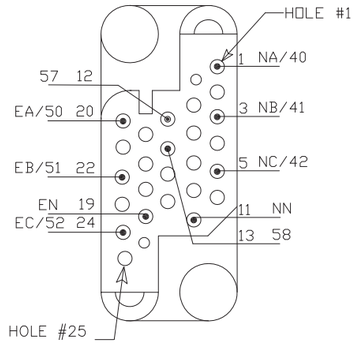
PC PLUG



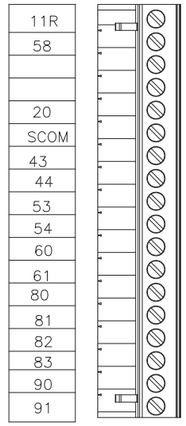
PD1 PLUG



TP1



CN2



MODEL KGS
600–1200A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89697

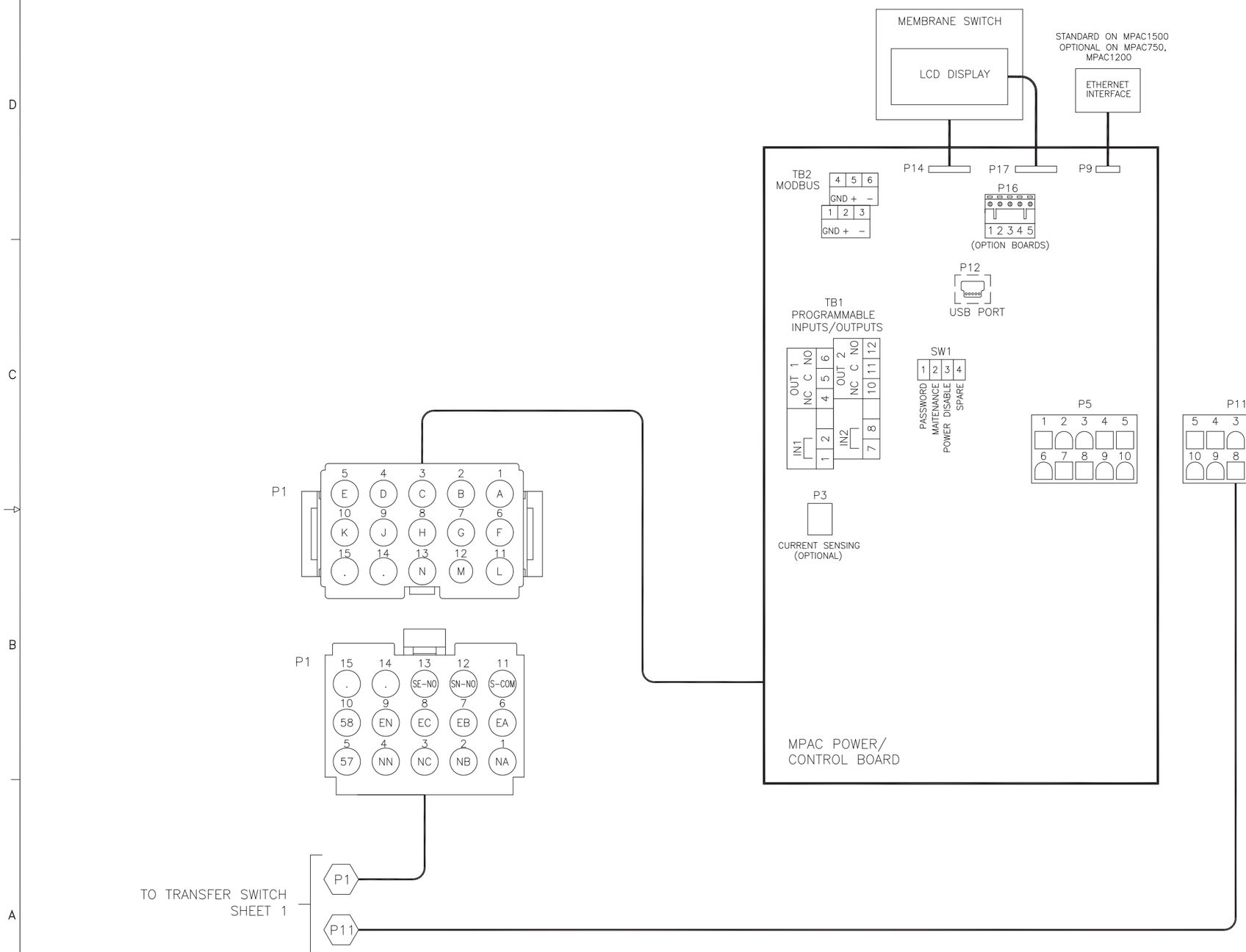
UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 3–4
PLOTTED | DWG. NO. GM89698 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–5) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



MODEL KGS
600–1200A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89697

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FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 4–4
PLOTTED | DWG. NO. GM89698 | D

REV	DATE	REVISION	BY	W F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	(D-8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

MEMBRANE SWITCH
LCD DISPLAY
ETHERNET INTERFACE

MPAC POWER/ CONTROL BOARD

P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)

TB2 (MODBUS)
4 5 6
GND + –
1 2 3
GND + –

P12 USB PORT (ON BACK OF BOARD)

1 2 3 4 5
P16 (OPTION BOARDS)

TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
OUT 1 NC C NO 4 5 6
OUT 2 NC C NO 10 11 12
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAITENANCE
POWER DISABLE
SPARE

(GEN_START_1) P1–5
(GEN_START_2) P1–10
(POSITION_SOURCE1) P1–12
(GROUND) P1–11
(POSITION_SOURCE2) P1–13

SE SN
NO NO
POSITION INDICATION

SOURCE 2 AC VOLTAGE SENSING
(SOURCE2_A) P1–6
(SOURCE2_B) P1–7
(SOURCE2_C) P1–8
(SOURCE2_N) P1–9

SOURCE 1 AC VOLTAGE SENSING
(SOURCE1_A) P1–1
(SOURCE1_B) P1–2
(SOURCE1_C) P1–3
(SOURCE1_N) P1–4

P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
CURRENT SENSING

P4–14 58
P4–13 57

TP1–12 → TBF–1
TP1–13 → TBF–2
ENGINE START

AUXILIARY CONTACTS *
A4–1: P4–1 TBF–4, P4–2 TBF–5
A4–2: P4–3 TBF–6, P4–4 TBF–7
A3–1: P4–5 TBF–8, P4–6 TBF–9
A3–2: P4–7 TBF–10, P4–8 TBF–11

* A4–(#) CLOSE ON NORMAL
A3–(#) CLOSE ON EMERGENCY

FROM NORMAL SOURCE
NN TP1–11 NTS LN ETS TP1–19 EN
NC TP1–5 NTS LC ETS TP1–24 EC
NB TP1–3 NTS LB ETS TP1–22 EB
NA TP1–1 NTS LA ETS TP1–20 EA
FROM EMERGENCY SOURCE

NB NA
DS
502
209R
AC SCR CN AC
C.V.
206R
CN

EB EA
DS
201
306R
AC SCR CE AC
C.V.
307R
CE

(RELAY_COIL_K1) P5–2 — 801 — P11–2 — 801
(RELAY_VDC_1) P5–1 — 800 — P11–1 — 800
P5–3
P5–5
(RELAY_VDC) P5–7 — 900 — P11–7 — 900
(RELAY_COIL_K4) P5–8 — 901 — P11–6 — 901

LEGEND

DS – DISCONNECT SWITCH
ETS – EMERGENCY–TRANSFER SWITCH
LCD – LIQUID CRYSTAL DISPLAY
NTS – NORMAL–TRANSFER SWITCH
P(#) – PLUG
SCR(#) – SILICON CONTROLLED RECTIFIER
SW(#) – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TBF – FIELD CONNECTION TERMINAL BLOCK
TP(#) – TEST PLUG

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KGS
1600–3000A
BYPASS MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89700

UNLESS OTHERWISE SPECIFIED –
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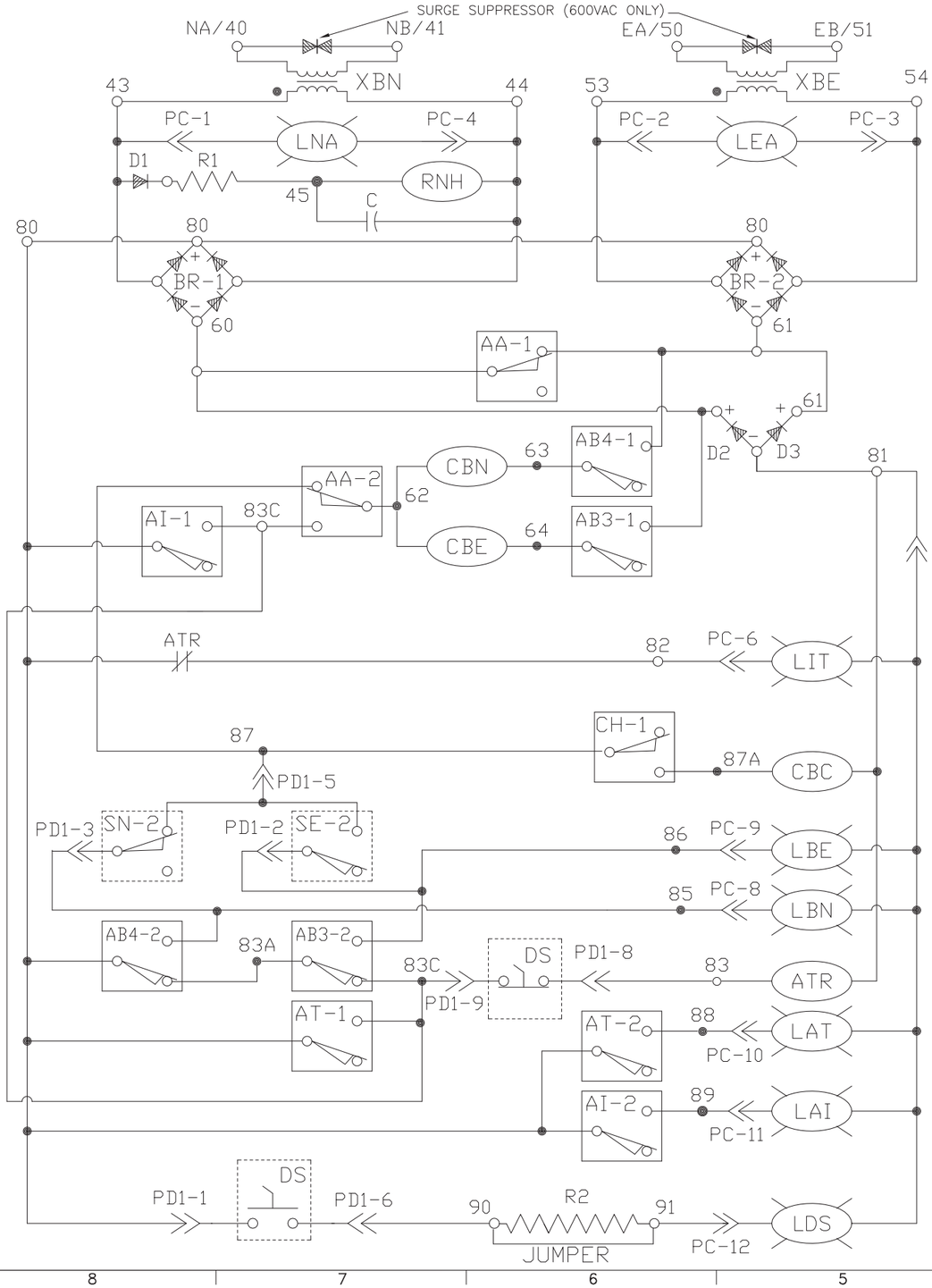
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC
SCALE: / / / CAD NO. SHEET 1–2
PLOTTED DWG. NO. GM89699 D

BYPASS/ISOLATION SCHEMATIC



XBN – BYPASS SOURCE 1 CONTROL TRANSFORMER
XBE – BYPASS SOURCE 2 CONTROL TRANSFORMER
LNA – SOURCE 1 AVAILABLE LIGHT
LEA – SOURCE 2 AVAILABLE LIGHT
RNH – NORMALLY HELD RELAY
D1,2,3 – DIODE
R1 – RESISTOR, RNH
C – CAPACITOR, RNH
BR–1,2 – BRIDGE RECTIFIER
AA–1 – LIMIT SWITCH, ATS AUTO LOCATION

AB4–1 – LIMIT SWITCH, BYPASS SOURCE 1
CBN – SOURCE 1 TRANSFER OPERATOR
AA–2 – LIMIT SWITCH, ATS IN AUTO
AB3–1 – LIMIT SWITCH, BYPASS SOURCE 2
CBE – SOURCE 2 TRANSFER OPERATOR

LIT – ATS INHIBIT LIGHT
AI–1 – LIMIT SWITCH, ATS IN ISOLATE

CH–1 – LIMIT SWITCH
CBC – CRANK SOLENOID
SN2 – LIMIT SWITCH – ATS, SOURCE 1
SE2 – LIMITS SWITCH – ATS, SOURCE 2
LBE – LIGHT, BYPASS SOURCE 2
LBN – LIGHT, BYPASS SOURCE 1
AB4–2 – LIMIT SWITCH, BYPASS SOURCE 1
AB3–2 – LIMIT SWITCH, BYPASS SOURCE 2
ATR – AUTO/TEST RELAY
AT–1 – LIMIT SWITCH, ATS TEST LOCATION
LAT – ATS TEST LOCATION
AT–2 – LIMIT SWITCH, ATS IN TEST
LAI – ATS ISOLATE LIGHT
AI–2 – LIMIT SWITCH, ATS IN ISOLATE
DS – ATS DISCONNECT SWITCH
LDS – DISCONNECT SWITCH, INHIBIT POSITION LIGHT
R2 – RESISTOR, BRAIN BOX ASSEMBLY

LOCATED ON ATS

LOCATED ON BYPASS

NOTES

ATS SHOWN IN SOURCE 1 POSITION WITH NO POWER AVAILABLE.

LEGEND

- WIRE CONNECTION
- WIRE ON TERMINAL BLOCK
- WIRE IN INTERCONNECT PLUG

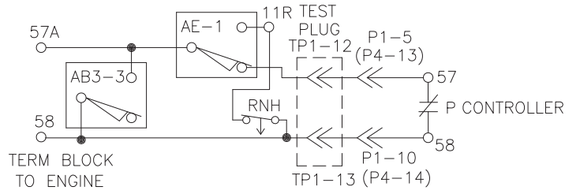
REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 1 [CT120983]	BTW	

LIMIT SWITCH CHART

X = ACTUATED	ATS LOCATION				ATS MODE		BYPASS MODE		
	AUTO	TEST	ISO	REMOVE	SOURCE 1	SOURCE 2	SOURCE 1	SOURCE 2	OPEN
AA	X								
AT		X							
AI			X	X					
AE			X	X					
SN					X				
SE						X			
AB4							X		
AB3								X	

ENGINE START SCHEMATIC

AE–1 – LIMIT SWITCH, ENGINE START TRANSFER
AB3–3– LIMIT SWITCH, BYPASS SOURCE 2



AUTO/TEST RELAY CONTACT LOCATED ON BYPASS SUBPANEL

SOURCE 1/SOURCE 2 TRANSFER PERMIT CIRCUIT. (ALH IN AUTO AND TEST LOCATION WITH DS IN AUTO POSITION)

INTERNAL USE ONLY

MODEL KGS 1600–3000A
BYPASS MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89700

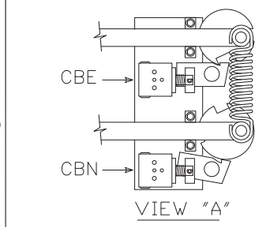
UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX± .010 ANGLES± 1/2° .XX ± .030 .X ± .060 FRACTIONS ± SURFACE FINISH √ MAX.

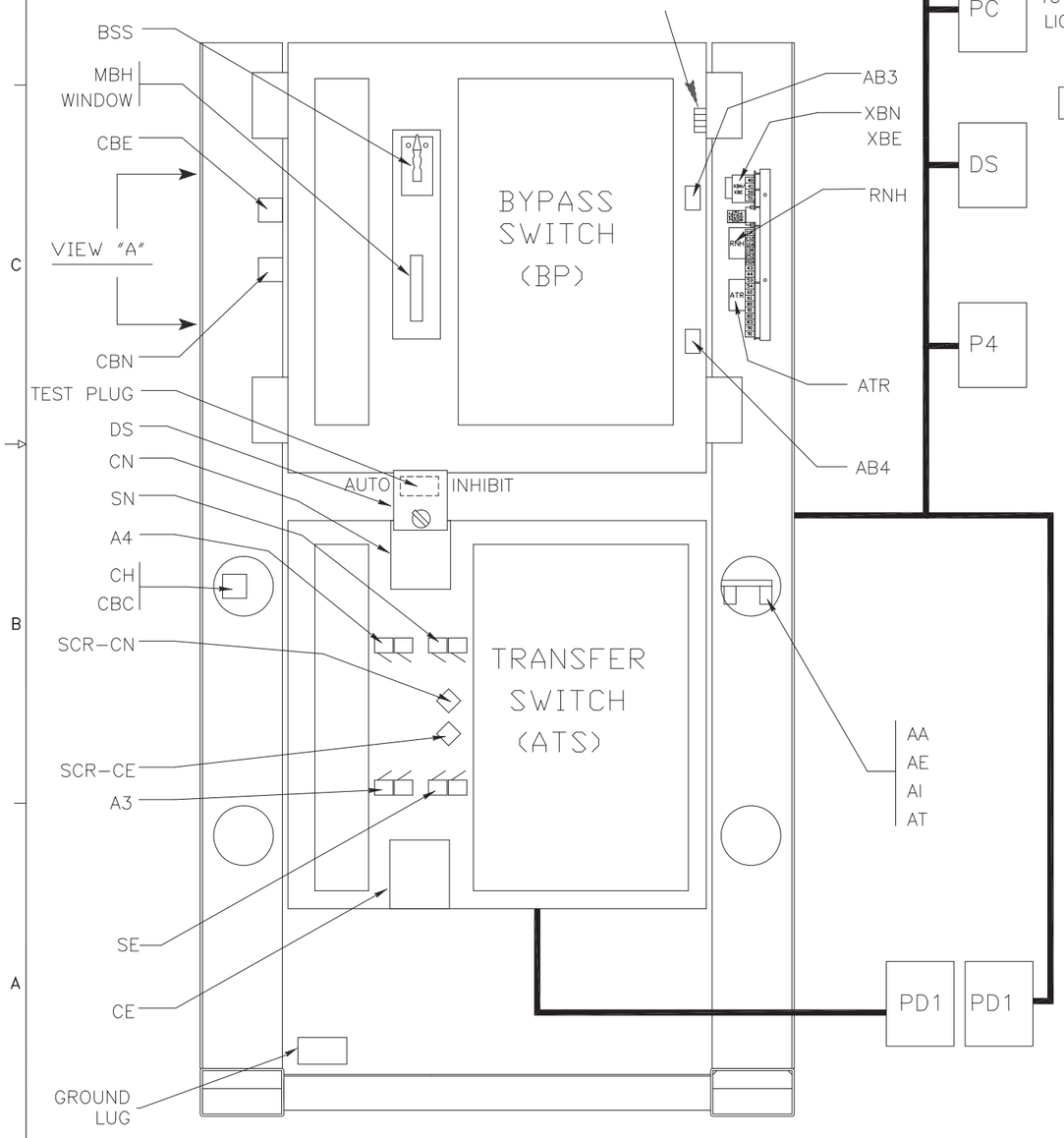
APPROVALS		DATE
DRAWN	DFS	12–3–13
CHECKED	MTL	12–3–13
APPROVED	HCC	12–3–13

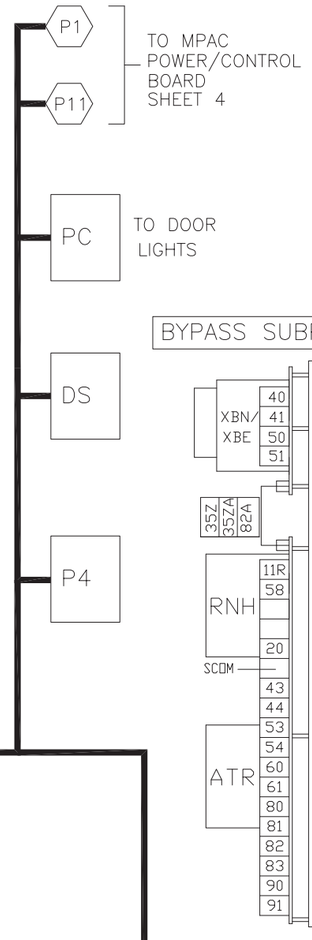
TITLE: DIAGRAM, SCHEMATIC
SCALE: / / / CAD NO. SHEET 2–2
PLOTTED DWG. NO. GM89699 D

REV	DATE	REVISION	BY	MFG
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	BTW	

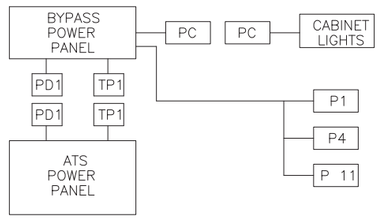
BYPASS/ISOLATION TRANSFER SWITCH



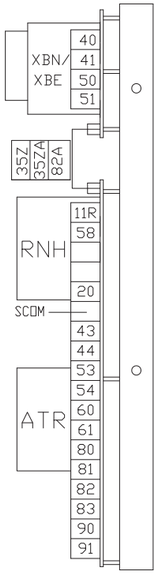




INTERCONNECTION PLUG DIAGRAM



BYPASS SUBPANEL



WIRE NUMBERING CHART

LIMIT SWITCHES	C	NC	NO
AA–1	60		61
AA–2	62	83C	87
AB3–1	64		60
AB3–2	83A	83C	86
AB3–3	58		57A
AB3–4	E12A	12A	
AB4–1	63		61
AB4–2	80	83A	85
AE–1	57A	57	11R
AE–2	E13	13	13R
AI–1	80		83C
AI–2	80		89
AT–1	80		83C
AT–2	80		88
CH–1	87	87A	
SE–2	86		87
SN–2	85		87

INTERCONNECT PLUGS

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO	4
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO	8
9					12
13	57	58	20	SCOM	16
17					20
21					24

PC PLUG

1 MALE PLUG 4

43	53	54	44
81	82		85
86	88	89	91

9 12

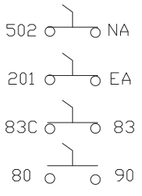
PD1 PLUG

1 MALE PLUG 5

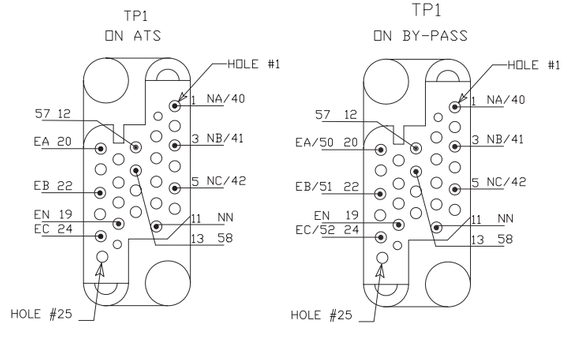
80	86	85		87
90		83	83C	
20	SCOM			

11 15

DISCONNECT SWITCH (DS)



ATS TEST PLUGS (TP)



MODEL KGS
1600–3000A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89699

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APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

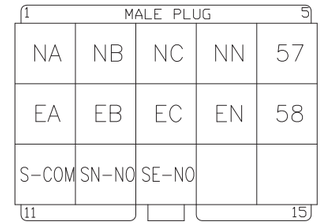
SCALE / / / | CAD NO. | SHEET 1–4

PLOTTED | DWG. NO. GM89700 | D

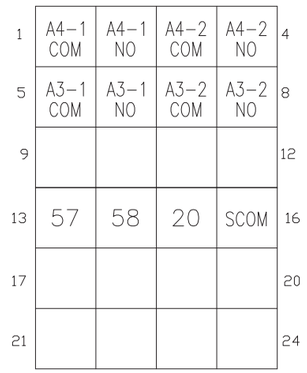
REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1-11	P4-15			
	80	PD1-1	DISCONNECT SWITCH (NC)			
	83	PD1-8	DISCONNECT SWITCH (NO)			
	83C	PD1-9	DISCONNECT SWITCH (NO)			
	85	PD1-3	LIMIT SWITCH SN-2 (COM)			
	86	PD1-2	LIMIT SWITCH SE-2 (COM)			
	87	PD1-5	LIMIT SWITCH SN-2 (NO)	LIMIT SWITCH SE-2 (NO)		
	90	PD1-6	DISCONNECT SWITCH (NC)			
	SCOM	PD1-12	P4-16			
P1	NA	SEE TP1				
	NB	SEE TP1				
	NC	SEE TP1				
	NN	SEE TP1				
	EA	SEE TP1				
	EB	SEE TP1				
	EC	SEE TP1				
	EN	SEE TP1				
	SN-NO	P1-12	LIMIT SWITCH SN (NO)			
	SE-NO	P1-13	LIMIT SWITCH SE (NO)			
	S-COM	P1-11	LIMIT SWITCH SN (COM)	LIMIT SWITCH SE (COM)		
	57	SEE TP1				
	58	SEE TP1				
P4	CA4-1	LIMIT SWITCH A4-1 (COM)	P4-1			
	A4-1	LIMIT SWITCH A4-1 (NO)	P4-2			
	CA4-2	LIMIT SWITCH A4-2 (COM)	P4-3			
	A4-2	LIMIT SWITCH A4-2 (NO)	P4-4			
	CA3-1	LIMIT SWITCH A3-1 (COM)	P4-5			
	A3-1	LIMIT SWITCH A3-1 (NO)	P4-6			
	CA3-2	LIMIT SWITCH A3-2 (COM)	P4-7			
	A3-2	LIMIT SWITCH A3-2 (NO)	P4-8			
	57	SEE TP1				
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
P11	800	P11-1	SCR-CN (CV)			
	801	P11-2	SCR-CN (CV)			
	900	P11-7	SCR-CE (CV)			
	901	P11-6	SCR-CE (CV)			
TP1	NA	TP1-1	DISCONNECT BLOCK (COM)	P1-1		
	NB	TP1-3	SCR-CN (AC)	P1-2		
	NC	TP1-5	P1-3			
	NN	TP1-11	P1-4			
	EA	TP1-20	DISCONNECT BLOCK (COM)	P1-6		
	EB	TP1-22	SCR-CE (AC)	P1-7		
	EC	TP1-24	P1-8			
	EN	TP1-19	P1-9			
	57	TP1-12	P4-13	P1-5		
	58	TP1-13	P4-14	P1-10		
	201	DISCONNECT SWITCH (NC)	SCR-CE (AC)			
	502	DISCONNECT SWITCH (NC)	SCR-CN (AC)			

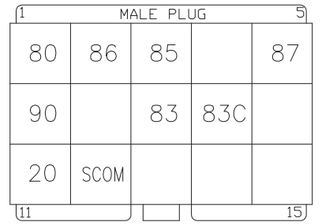
P1 PLUG



P4 PLUG

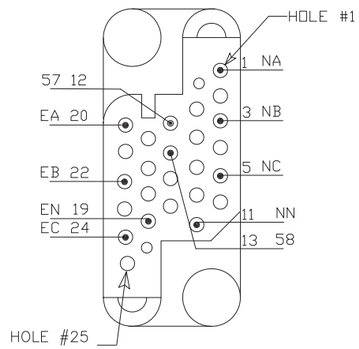


PD1 PLUG



P11 PLUG MOLEX

TP1
ON ATS



MODEL KGS
1600-3000A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89699

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FRACTIONS ±

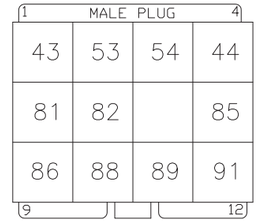
APPROVALS		DATE
DRAWN	DFS	12-3-13
CHECKED	MTL	12-3-13
APPROVED	HCC	12-3-13

TITLE: DIAGRAM, WIRING
SCALE: / / / CAD NO. SHEET 2-4
PLOTTED DWG. NO. GM89700 D

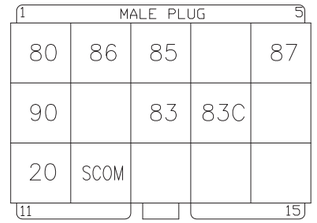
PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1–11	CN2			
	80	PD1–1	AI–2 (COM)	AT–2 (COM)	AT–1 (COM)	AB4–2 (COM)
			AI–1 (COM)	BYPASS ASSEMBLY LOGIC (CN2)		
	83	PD1–8	CN2			
	83C	PD1–9	AB3–2 (NC)	AT–1 (NO)	AI–1 (NC)	AA–2 (NC)
	85	PD1–3	AB4–2 (NO)	PC–8		
	86	PD1–2	AB3–2 (NO)	PC–9		
	87	PD1–5	AA–2 (NO)	CH–1 (COM)		
	90	PD1–6	CN2			
	SCOM	PD1–12	CN2			
TP1	NA	TP1–1	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	NB	TP1–3	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	NC	TP1–5	CUST CONNECT – PHASE C			
	NN	TP1–11	CUST CONNECT – NEUTRAL			
	EA	TP1–20	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	EB	TP1–22	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	EC	TP1–24	CUST CONNECT – PHASE C			
	EN	TP1–19	CUST CONNECT – NEUTRAL			
	57	TP1–12	AE–1 (NC)			
	58	TP1–13	BYPASS ASSEMBLY LOGIC (CN2)	AB3–3 (COM)	T–BLOCK. ENGINE START	
CONNECTOR CN2	11R	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AE–1 (NO)			
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	43	BYPASS LOGIC ASSEMBLY	PC–1			
	44	BYPASS LOGIC ASSEMBLY	PC–4			
	53	BYPASS LOGIC ASSEMBLY	PC–2			
	54	BYPASS LOGIC ASSEMBLY	PC–3			
	60	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (COM)	LIMIT SWITCH AB3–1 (NO)		
	61	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (NO)	LIMIT SWITCH AB4–1 (NO)		
	80	SEE PD1				
	81	BYPASS LOGIC ASSEMBLY	SOLENOID CBC	PC–5		
	82	BYPASS LOGIC ASSEMBLY	PC–6			
	83	SEE PD1				
	90	SEE PD1				
	91	BYPASS LOGIC ASSEMBLY	PC–12			
	57A	T–BLOCK ENGINE START	LIMIT SWITCH AB3–3 (NO)	LIMIT SWITCH AE–1 (COM)		
	62	LIMIT SWITCH AA–2 (COM)	SOLENOID CBN	SOLENOID CBE		
	63	SOLENOID CBN	LIMIT SWITCH AB4–1 (COM)			
	64	SOLENOID CBE	LIMIT SWITCH AB3–1 (COM)			
	83A	LIMIT SWITCH AB3–2 (COM)	LIMIT SWITCH AB4–2 (NC)			
	87A	CH–1 (NC)	SOLENOID CBC			
	88	LIMIT SWITCH AT–2 (NO)	PC–10			
	89	LIMIT SWITCH AI –2 (NO)	PC–11			
CONNECTOR PC VIA 46W–2001G	43	PC–1	LIGHT – SOURCE 1 AVAILABLE			
	53	PC–2	LIGHT – SOURCE 2 AVAILABLE			
	54	PC–3	LIGHT – SOURCE 2 AVAILABLE			
	44	PC–4	LIGHT – SOURE 1 AVAILABLE			
	81	PC–5	LIGHTS – COMMON			
	82	PC–6	LIGHT – ATS INHIBIT			
	85	PC–8	LIGHT – BYPASS SOURCE 1			
	86	PC–9	LIGHT – BYPASS SOURCE 2			
	88	PC–10	LIGHT – ATS TEST LOC.			
	89	PC–11	LIGHT – ATS ISOLATE LOC.			
	91	PC–12	LIGHT – DISCONNECT INHIBIT			

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

PC PLUG

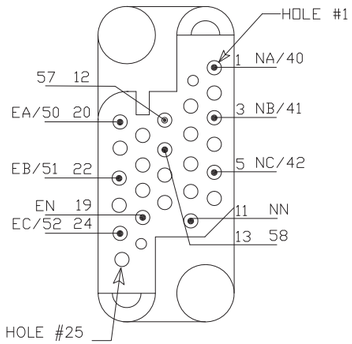


PD1 PLUG

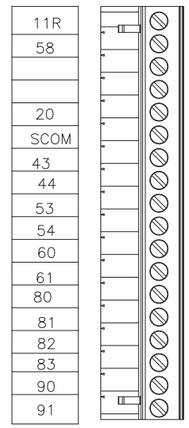


TP1

ON BY-PASS



CN2



MODEL KGS
1600–3000A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89699

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX± .010 ANGLES± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±

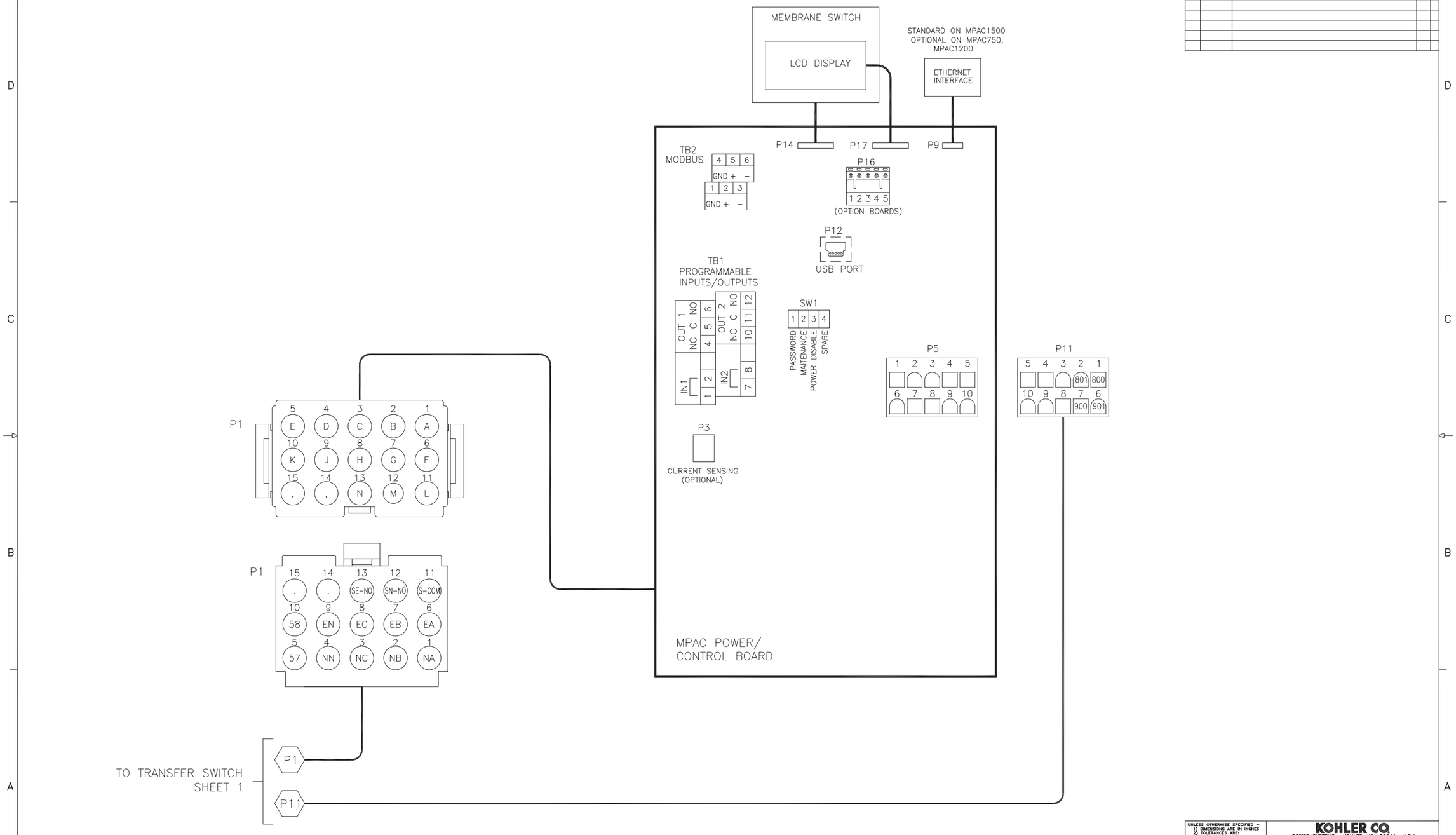
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE /// CAD NO. SHEET 3–4

PLOTTED DWG. NO. GM89700 D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–5) TB2 MODBUS CONNECTION VIEW UPDATED; [CT1209838]	BTW	



MODEL KGS
1600–3000A
BYPASS MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89699

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX ± .010 ANGLES ± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±	
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE	DIAGRAM, WIRING	
SCALE / / /	CAD NO.	SHEET 4–4
PLOTTED	DWG. NO. GM89700	D

REV	DATE	REVISION	BY	W F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

MEMBRANE SWITCH
LCD DISPLAY
ETHERNET INTERFACE

MPAC POWER/ CONTROL BOARD

P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)

TB2 (MODBUS)
4 5 6
GND + –
1 2 3
GND + –

P12 USB PORT (ON BACK OF BOARD)

P16 (OPTION BOARDS)
1 2 3 4 5

(GEN_START_1) P1–5
(GEN_START_2) P1–10
(POSITION_SOURCE1) P1–12
(GROUND) P1–11
(POSITION_SOURCE2) P1–13

TP2–8 TP2–11 TP2–7
SE SN
NO NO
POSITION INDICATION

P1–10 58 P1–5 57
P4–13 TBF–1
P4–14 TBF–2
ENGINE START

TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
IN1: 1 2
IN2: 7 8
OUT 1: NC 4, C 5, NO 6
OUT 2: NC 10, C 11, NO 12

SW1
1 2 3 4
PASSWORD
MAITENANCE
POWER DISABLE
SPARE

SOURCE 2 AC VOLTAGE SENSING
(SOURCE2_A) P1–6
(SOURCE2_B) P1–7
(SOURCE2_C) P1–8
(SOURCE2_N) P1–9
TP1–11
TP1–12
TP1–14

SOURCE 1 AC VOLTAGE SENSING
(SOURCE1_A) P1–1
(SOURCE1_B) P1–2
(SOURCE1_C) P1–3
(SOURCE1_N) P1–4
TP1–20
TP1–22
TP1–24

P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
CURRENT SENSING

FROM NORMAL SOURCE
NN NC NB NA
TP1–5 TP1–3 TP1–1
NTS
LN LC LB LA
ETS
TP2–5 TP2–3 TP2–1
EN EC EB EA
FROM EMERGENCY SOURCE

NA P1–1 TB–4 SLN TB–3 COM P1–15 COM TB–3 SLE TB–7 P1–6 EA
TP2–12
AC RD AC
SS
TP2–21
NB P1–3 TB–5 SLN TB–2 234 P1–14 234 SLE TB–2 TB–8 P1–8 EB

DS 502 TP2–25
209R
AC SCR CN/CEO AC
C.V.
206R
CN/CEO

DS 201 TP2–23
306R
AC SCR CE/CNO AC
C.V.
307R
CE/CNO

(RELAY_COIL_K3) P5–4 808 P11–4 TP2–15 808
(RELAY_COIL_K1) P5–2 TB–6 801 P11–2 TP2–14 801A SOL–1 SLN
(RELAY_VDC_1) P5–1 P5–3 P5–5 TB–1 P11–1 TP2–13 800
(RELAY_VDC) P5–7 900 TB–1 900A P11–7 TP2–16 900
(RELAY_COIL_K4) P5–8 901 TB–9 901A P11–8 TP2–17 901 SOL–2 SLE 901A
(RELAY_COIL_K2) P5–6 908 P11–6 TP2–18 908

TB – PTIP

AUXILIARY CONTACTS *
A4–1 PD1–1 P4–1 TBF–4; PD1–2 P4–2 TBF–5
A4–2 PD1–3 P4–3 TBF–6; PD1–4 P4–4 TBF–7
A3–1 PD1–5 P4–5 TBF–8; PD1–6 P4–6 TBF–9
A3–2 PD1–7 P4–7 TBF–10; PD1–8 P4–8 TBF–11
A4–3 PD1–9 P4–9 TBF–12; PD1–10P4–10 TBF–13
A3–3 PD1–11P4–11 TBF–14; PD1–12P4–12 TBF–15

* A4–(#) CLOSE ON NORMAL
A3–(#) CLOSE ON EMERGENCY

LEGEND

DS – DISCONNECT SWITCH
ETS – EMERGENCY–TRANSFER SWITCH
LCD – LIQUID CRYSTAL DISPLAY
NTS – NORMAL–TRANSFER SWITCH
P(#) – PLUG
RD – RECTIFIER DIODE
SCR(#) – SILICON CONTROLLED RECTIFIER
SLE – OFF TO EMERGENCY CONTROL RELAY
SLN – OFF TO NORMAL CONTROL RELAY
SOL – SOLENOID SWITCH OFF POSITION
SW(#) – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TBF – FIELD CONNECTION TERMINAL BLOCK
TP(#) – TEST PLUG

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

SCR PULSE SEQUENCE:
CNO – NORMAL TO OFF
CE – OFF TO EMERGENCY
CEO – EMERGENCY TO OFF
CN – OFF TO NORMAL

MODEL KGP
150–400A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR WIRING DIAGRAM SEE GM89702

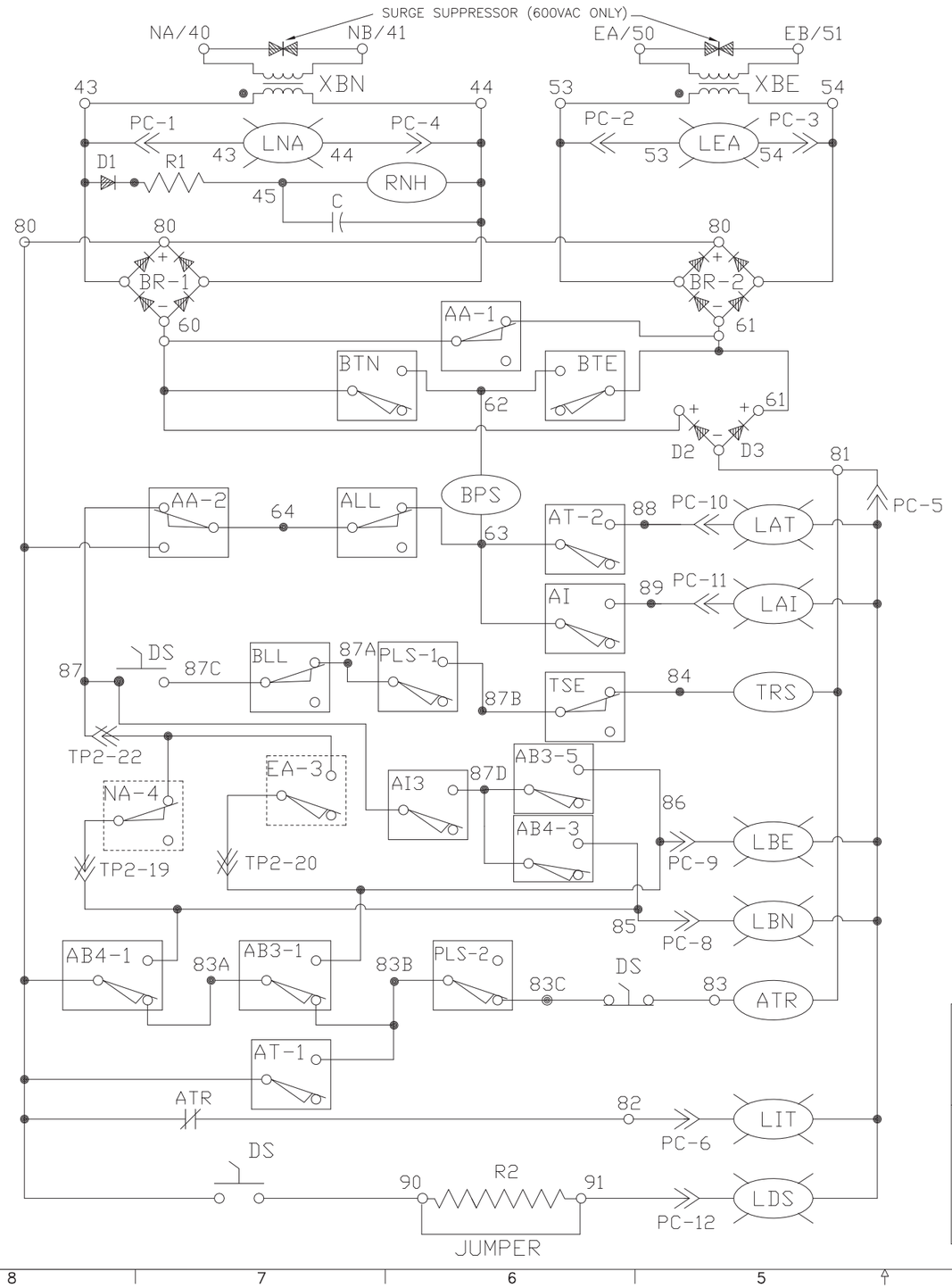
UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX± .010 ANGLES± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 FRACTIONS ± 1/64 MAX.

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC
SCALE / / / CAD NO. SHEET 1–2
PLOTTED DWG. NO. GM89701 D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 1 [CT120983]	BTW	

BYPASS/ISOLATION SCHEMATIC



AA–1 – LIMIT SWITCH, ATS AUTO LOCATION
BTN – LIMIT SWITCH, BYPASS TRANSFER SOURCE 1 (MBH MOVEMENT TO SOURCE 1)
BTE – LIMIT SWITCH, BYPASS TRANSFER SOURCE 2 (MBH MOVEMENT TO SOURCE 2)
BPS – BYPASS SOLENOID
AA–2 – LIMIT SWITCH, ATS AUTO LOCATION
ALL – LIMIT SWITCH, ATS LOCK LOCATION
AT–2 – LIMIT SWITCH, ATS TEST LOCATION
LAT – LIGHT, ATS TEST LOCATION
AI – LIMIT SWITCH, ATS ISOLATE LOCATION
LAI – LIGHT, ATS ISOLATE LOCATION
BLL – LIMIT SWITCH, BYPASS LOCK LOCATION
PLS–1 – PERMISSIVE LIMIT SWITCH
TSE – LIMIT SWITCH, TRANSFER SWITCH ENGAGED
TRS – SOLENOID, TRANSFER RELEASE
NA–4 – LIMIT SWITCH, ATS IN SOURCE 1
EA–3 – LIMIT SWITCH, ATS IN SOURCE 2
LBE – LIGHT, BYPASS SOURCE 2
LBN – LIGHT, BYPASS SOURCE 1
AB4–1 – LIMIT SWITCH, BYPASS SOURCE 1
AB3–1 – LIMIT SWITCH, BYPASS SOURCE 2
PLS–2 – PERMISSIVE LIMIT SWITCH
ATR – AUTO/TEST RELAY
AT–1 – LIMIT SWITCH, ATS TEST LOCATION
LIT – LIGHT, ATS INHIBIT
DS – ATS DISCONNECT SWITCH
LDS – LIGHT, DISCONNECT SWITCH INHIBIT POSITION
ALH – ATS LOCATION HANDLE
MBH – MANUAL BYPASS HANDLE
XBN – BYPASS SOURCE 1 CONTROL TRANSFORMER
XBE – BYPASS SOURCE 2 CONTROL TRANSFORMER
LNA – SOURCE 1 AVAILABLE LIGHT
LEA – SOURCE 2 AVAILABLE LIGHT
RNH – NORMALLY HELD RELAY
D1 – DIODE
R1 – RESISTOR, RNH
C – CAPACITOR, RNH
BR–1,2,3 – BRIDGE RECTIFIER

LOCATED ON ATS

LOCATED ON BYPASS

NOTES

ATS SHOWN IN SOURCE 1 POSITION WITH NO POWER AVAILABLE.

LEGEND

- WIRE CONNECTION
- WIRE ON TERMINAL BLOCK
- WIRE IN INTERCONNECT PLUG

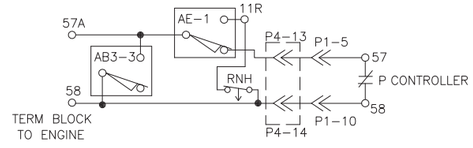
LIMIT SWITCH CHART

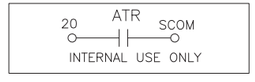
X = ACTUATED	ATS LOCATION				ATS MODE		BYPASS MODE		
	AUTO	TEST	ISO	REMOVE	SOURCE 1	SOURCE 2	SOURCE 1	SOURCE 2	OPEN
AA	X								
AT		X							
AI			X	X					
ALL	X	X	X	X					
TSE	X	X	X						
AE			X	X					
NA					X				
EA						X			
AB4							X		
AB3								X	
BLL							X	X	X
PLS	ACTIVATED WHEN ALH IS OPERATED								

ENGINE START SCHEMATIC

ENGINE START CIRCUIT

AE–1 – LIMIT SWITCH, ENGINE START TRANSFER
AB3–3– LIMIT SWITCH, BYPASS SOURCE 2





MODEL KGP
150–400A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR WIRING DIAGRAM SEE GM89702

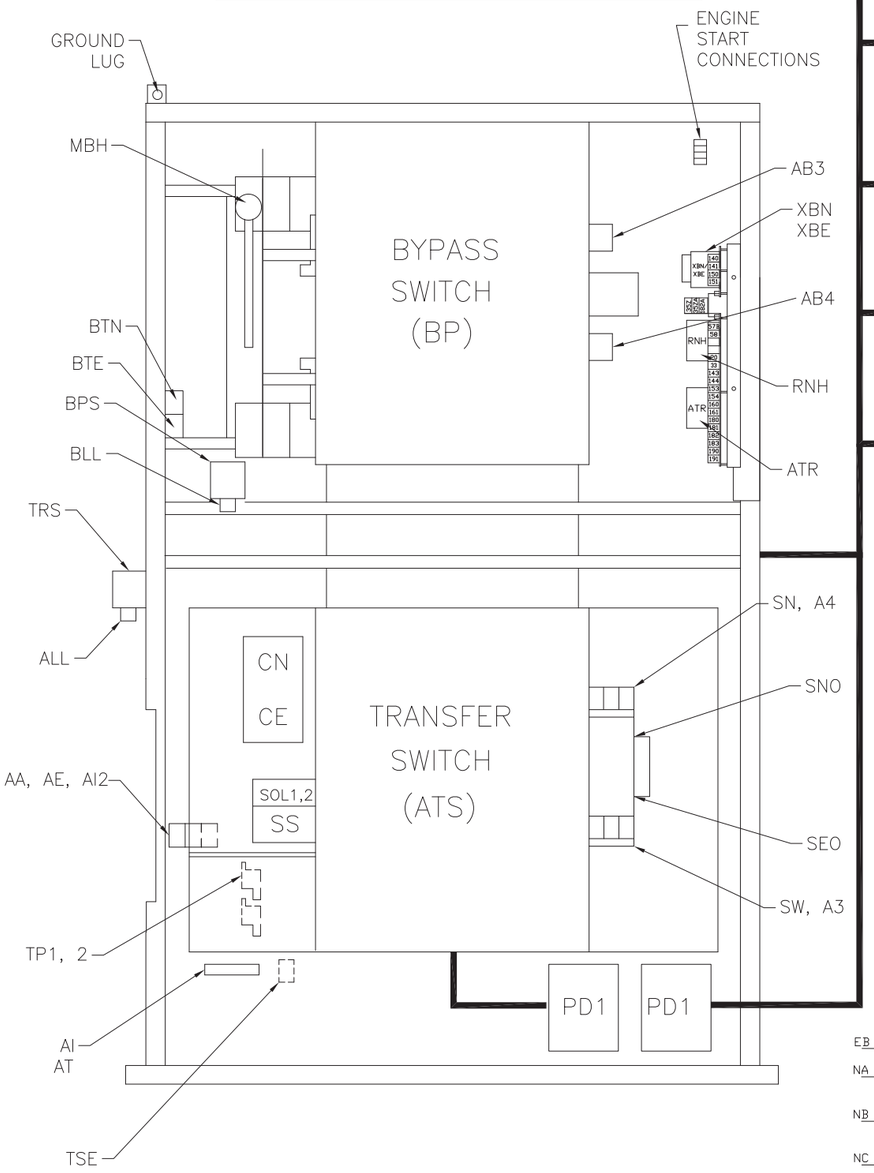
UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX± .010 ANGLES± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±

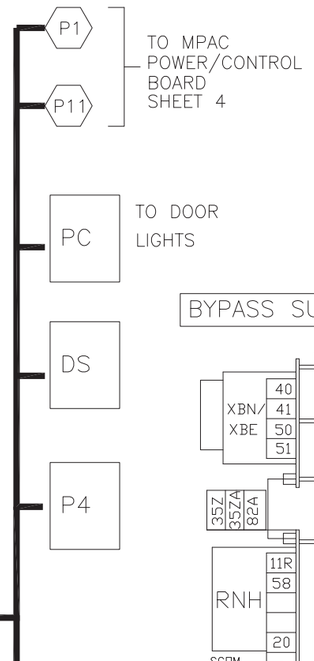
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC
SCALE / / / CAD NO. SHEET 2–2
PLOTTED DWG. NO. GM89701 D

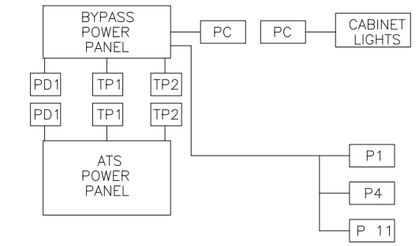
REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

BYPASS/ISOLATION TRANSFER SWITCH

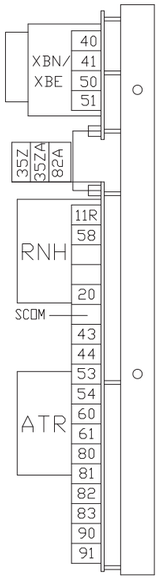




INTERCONNECTION PLUG DIAGRAM



BYPASS SUBPANEL



WIRE NUMBERING CHART

LIMIT SWITCHES	C	NC	NO
AA–1	60		61
AA–2	64	80	87
AB3–1	83A	83B	86
AB3–2	58		57
AB3–3	58		57A
AB3–4	87D		86
AB4–1	80	83A	85
AB4–3	87D		85
AE–1	57A	57	11R
AI	63		89
AI2	87		87D
ALL	64		63
AT–1	80		83B
AT–2	63		88
BLL	87C		87A
BTE	61		62
BTN	60		62
EA–3	86		87
NA–4	85		87
PLS–1	87A		87B
PLS–2	83B	83C	
TSE	87B		84

INTERCONNECT PLUGS

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO	4
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO	8
9	A4–3 COM	A4–3 NO	A3–3 COM	A3–3 NO	12
13	57	58	20	SCOM	16
17	SNO NO	SEO NO			20
21					24

PC PLUG

1 MALE PLUG 4

43	53	54	44
81	82		85
86	88	89	91

9 12

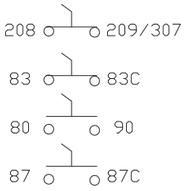
PD1 PLUG

1 MALE PLUG 4

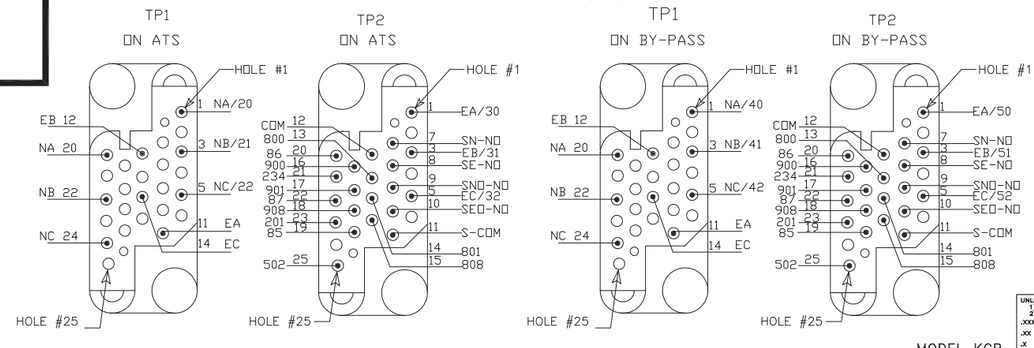
CA4–1	A4–1	CA4–2	A4–2
CA3–1	A3–1	CA3–2	A3–2
CA4–3	A4–3	CA3–3	A3–3

9 12

DISCONNECT SWITCH (DS)



ATS TEST PLUGS (TP)



MODEL KGP
150–400A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89701

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	12–3–13
CHECKED	MTL	12–3–13
APPROVED	HCC	12–3–13

TITLE: DIAGRAM, WIRING

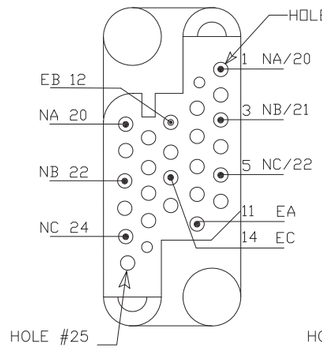
SCALE / / / | CAD NO. | SHEET 1–4

PLOTTED | DWG. NO. GM89702 | D

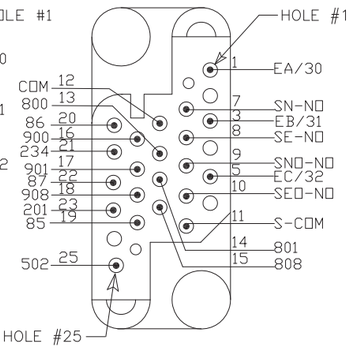
REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	CRS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	CA4–1	PD1–1	LIMIT SWITCH A4–1 (NO)			
	A4–1	PD1–2	LIMIT SWITCH A4–1 (NO)			
	CA4–2	PD1–3	LIMIT SWITCH A4–2 (NO)			
	A4–2	PD1–4	LIMIT SWITCH A4–2 (NO)			
	CA4–3	PD1–9	LIMIT SWITCH A4–3 (NO)			
	A4–3	PD1–10	LIMIT SWITCH A4–3 (NO)			
	CA3–1	PD1–5	LIMIT SWITCH A3–1 (NO)			
	A3–1	PD1–6	LIMIT SWITCH A3–1 (NO)			
	CA3–2	PD1–7	LIMIT SWITCH A3–2 (NO)			
	A3–2	PD1–8	LIMIT SWITCH A3–2 (NO)			
	CA3–3	PD1–11	LIMIT SWITCH A3–3 (NO)			
	A3–3	PD1–12	LIMIT SWITCH A3–3 (NO)			
TP1/TP2	NA	TP1–1	TP1–20			
	NB	TP1–3	SCR–CN/CEO (AC)	TP1–22		
	NC	TP1–5	TP1–24			
	EA	TP2–1	TP1–11			
	EB	TP2–3	SCR–CE/CNO (AC)	TP1–12		
	EC	TP2–5	TP1–14			
	SN–NO	TP2–7	LIMIT SWITCH SN (NO)			
	SNO–NO	TP2–9	LIMIT SWITCH SNO (NO)			
	SE–NO	TP2–8	LIMIT SWITCH SE (NO)			
	SEO–NO	TP2–10	LIMIT SWITCH SEO (NO)			
	S–COM	TP2–11	LIMIT SWITCH SN (COM)	LIMIT SWITCH SNO (COM)	LIMIT SWITCH SEO (COM)	LIMIT SWITCH SE (COM)
	85	TP2–19	LIMIT SWITCH NA–4 (COM)			
	86	TP2–20	LIMIT SWITCH EA–3 (COM)			
	87	TP2–22	LIMIT SWITCH NA–4 (NO)	LIMIT SWITCH EA–3 (NO)		
	800	TP2–13	SCR–CN/CEO (24V)			
	801	TP2–14	LIMIT SWITCH SOL–1 (COM)			
	900	TP2–16	SCR–CE/CNO (24V)			
	901	TP2–17	LIMIT SWITCH SOL–2 (COM)			
	201	TP2–23	SCR–CE/CNO			
	502	TP2–25	SCR–CN/CEO			
	234	TP2–21	RD (AC)			
	COM	TP2–12	RD (AC)			
	801A	LIMIT SWITCH SOL–1 (NO)	SCR–CN/CEO (24V) (801A / 808)	TP2 – 15 (808)		
	901A	LIMIT SWITCH SOL–2 (NO)	SCR–CE/CNO (24V) (901A / 908)	TP2 – 18 (908)		

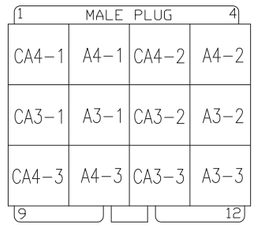
TP1
ON ATS



TP2
ON ATS



PD1 PLUG



MODEL KGP
150–400A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89701

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 2–4
PLOTTED | DWG. NO. GM89702 | D

REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	CA4-1	PD1-1	P4-1			
	A4-1	PD1-2	P4-2			
	CA4-2	PD1-3	P4-3			
	A4-2	PD1-4	P4-4			
	CA4-3	PD1-9	P4-9			
	A4-3	PD1-10	P4-10			
	CA3-1	PD1-5	P4-5			
	A3-1	PD1-6	P4-6			
	CA3-2	PD1-7	P4-7			
	A3-2	PD1-8	P4-8			
	CA3-3	PD1-11	P4-11			
	A3-3	PD1-12	P4-12			
TP1/TP2	NA/40	TP1-1	CUST CONNECT - PHASE A	Bypass Xfmr Box (JP1)		
	NB/41	TP1-3	CUST CONNECT - PHASE B	Bypass Xfmr Box (JP1)		
	NC/42	TP1-5	CUST CONNECT - PHASE C			
	EA/50	TP2-1	CUST CONNECT - PHASE A	Bypass Xfmr Box (JP1)		
	EB/51	TP2-3	CUST CONNECT - PHASE B	Bypass Xfmr Box (JP1)		
	EC/52	TP2-5	CUST CONNECT - PHASE C			
	NA	TP1-20	DISCONNECT SWITCH (NO)	P1-1		
	NB	TP1-22	P1-2			
	NC	TP1-24	P1-3			
	NN	CUST CONNECT - NEUTRAL	P1-4			
	EA	TP1-11	DISCONNECT SWITCH (NO)	P1-6		
	EB	TP1-12	P1-7			
	EC	TP1-14	P1-8			
	EN	CUST CONNECT - NEUTRAL	P1-9			
	SN-NO	TP2-7	P1-12			
	SE-NO	TP2-8	P1-13			
	S-COM	TP2-11	P1-11			
	SN0-NO	TP2-9	P4-17			
	SE0-NO	TP2-10	P4-18			
	85	TP2-19	LIMIT SWITCH AB4-1 (NO)	LIMIT SWITCH AB4-3 (NO)	PC-8	
	86	TP2-20	LIMIT SWITCH AB3-1 (NO)	LIMIT SWITCH AB3-5 (NO)	PC-9	
	87	TP2-22	DISCONNECT SWITCH (NC)	LIMIT SWITCH AI3 (COM)	LIMIT SWITCH AA-2 (NO)	
	800	TP2-13	P11-1			
	801	TP2-14	P11-2			
	808	TP2-15	P11-4			
	900	TP2-16	P11-7			
	901	TP2-17	P11-8			
	908	TP2-18	P11-6			
	201	TP2-23	DISCONNECT SWITCH (NO)			
	502	TP2-25	DISCONNECT SWITCH (NO)			
	234	TP2-21	P1-14			
	COM	TP2-12	P1-15			
CONNECTOR CN2	11R	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AE-1 (NC)			
	58	P1-10	BYPASS LOGIC ASSEMBLY	ENGINE START T-BLOCK	LIMIT SWITCH AB3-3 (COM)	P4-14
	20	BYPASS LOGIC ASSEMBLY	P4-15			
	SCOM	BYPASS LOGIC ASSEMBLY	P4-16			
	43	BYPASS LOGIC ASSEMBLY	PC-1			
	44	BYPASS LOGIC ASSEMBLY	PC-4			
	53	BYPASS LOGIC ASSEMBLY	PC-2			
	54	BYPASS LOGIC ASSEMBLY	PC-3			
	60	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA-1 (COM)	LIMIT SWITCH BTN (COM)		
	61	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA-1 (NO)	LIMIT SWITCH BTE (COM)		
	80	DISCONNECT SWITCH (NC)	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AB4-1 (COM)	LIMIT SWITCH AT-1 (COM)	LIMIT SWITCH AA-2 (NC)
	81	BYPASS LOGIC ASSEMBLY	SOLENOID TRS	PC-5		
	82	BYPASS LOGIC ASSEMBLY	PC-6			
	83	BYPASS LOGIC ASSEMBLY	DISCONNECT SWITCH (NO)			
	90	BYPASS LOGIC ASSEMBLY	DISCONNECT SWITCH (NC)			
	91	BYPASS LOGIC ASSEMBLY	PC-12			

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION
	83A	LIMIT SWITCH AB3-1 (COM)	LIMIT SWITCH AB4-1 (NC)		
	83B	LIMIT SWITCH AB3-1 (NC)	LIMIT SWITCH PLS-2 (COM)	LIMIT SWITCH AT-1 (NO)	
	83C	DISCONNECT SWITCH (NO)	LIMIT SWITCH PLS-2 (NC)		
	87A	LIMIT SWITCH PLS-1 (COM)	LIMIT SWITCH BLL (NO)		
	87B	LIMIT SWITCH PLS-1 (NO)	LIMIT SWITCH TSE (COM)		
	87C	DISCONNECT SWITCH (NC)	LIMIT SWITCH BLL (COM)		
	87D	LIMIT SWITCH AB3-5 (COM)	LIMIT SWITCH AB4-3 (COM)	LIMIT SWITCH AI3 (NO)	
	84	LIMIT SWITCH TSE (NO)	SOLENOID TRS		
	88	LIMIT SWITCH AT (NO)	PC-10		
	89	LIMIT SWITCH AI (NO)	PC-11		
	64	LIMIT SWITCH AA-2 (COM)	LIMIT SWITCH ALL (COM)		
	63	LIMIT SWITCH ALL (NO)	SOLENOID BPS	LIMIT SWITCH AT-2 (COM)	LIMIT SWITCH AI (COM)
	62	LIMIT SWITCH BTN (NO)	SOLENOID BPS	LIMIT SWITCH BTE (NO)	
	57	P1-5	LIMIT SWITCH AE-1 (NC)	P4-13	
	57A	ENGINE START T-BLOCK	LIMIT SWITCH AE-1 (COM)	LIMIT SWITCH AB3-3 (NO)	
CONNECTOR PC VIA 46W-2001G	43	PC-1	LIGHT - SOURCE 1 AVAILABLE		
	53	PC-2	LIGHT - SOURCE 2 AVAILABLE		
	54	PC-3	LIGHT - SOURCE 2 AVAILABLE		
	44	PC-4	LIGHT - SOURE 1 AVAILABLE		
	81	PC-5	LIGHTS - COMMON		
	82	PC-6	LIGHT - ATS INHIBIT		
	85	PC-8	LIGHT - BYPASS SOURCE 1		
	86	PC-9	LIGHT - BYPASS SOURCE 2		
	88	PC-10	LIGHT - ATS TEST LOC.		
	89	PC-11	LIGHT - ATS ISOLATE LOC.		
	91	PC-12	LIGHT - DISCONNECT INHIBIT		

P1 PLUG

NA	NB	NC	NN	57	
EA	EB	EC	EN	58	
S-COM	SN-NO	SE-NO	234	COM	

P4 PLUG

1 CA4-1	A4-1	CA4-2	A4-2	4
5 CA3-1	A3-1	CA3-2	A3-2	8
9 CA4-3	A4-3	CA3-3	A3-3	12
13 57	58	20	SCOM	16
17 SN0-NO	SE0-NO			20
21				24

P11 PLUG MOLEX

1	800	801		808		5
6	908	900	901			10

PD1

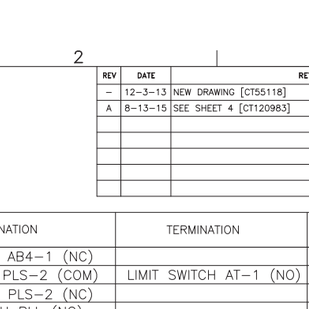
1 CA4-1	A4-1	CA4-2	A4-2	4
CA3-1	A3-1	CA3-2	A3-2	
CA4-3	A4-3	CA3-3	A3-3	
9				12

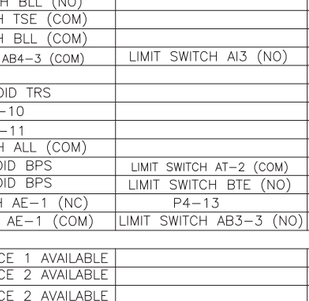
PC

1	43	53	54	44 4
	81	82		85
	86	88	89	91
9				12

CN2

11R
58
20
SCOM
43
44
53
54
60
61
80
81
82
83
90
91





MODEL KGP
150-400A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89701

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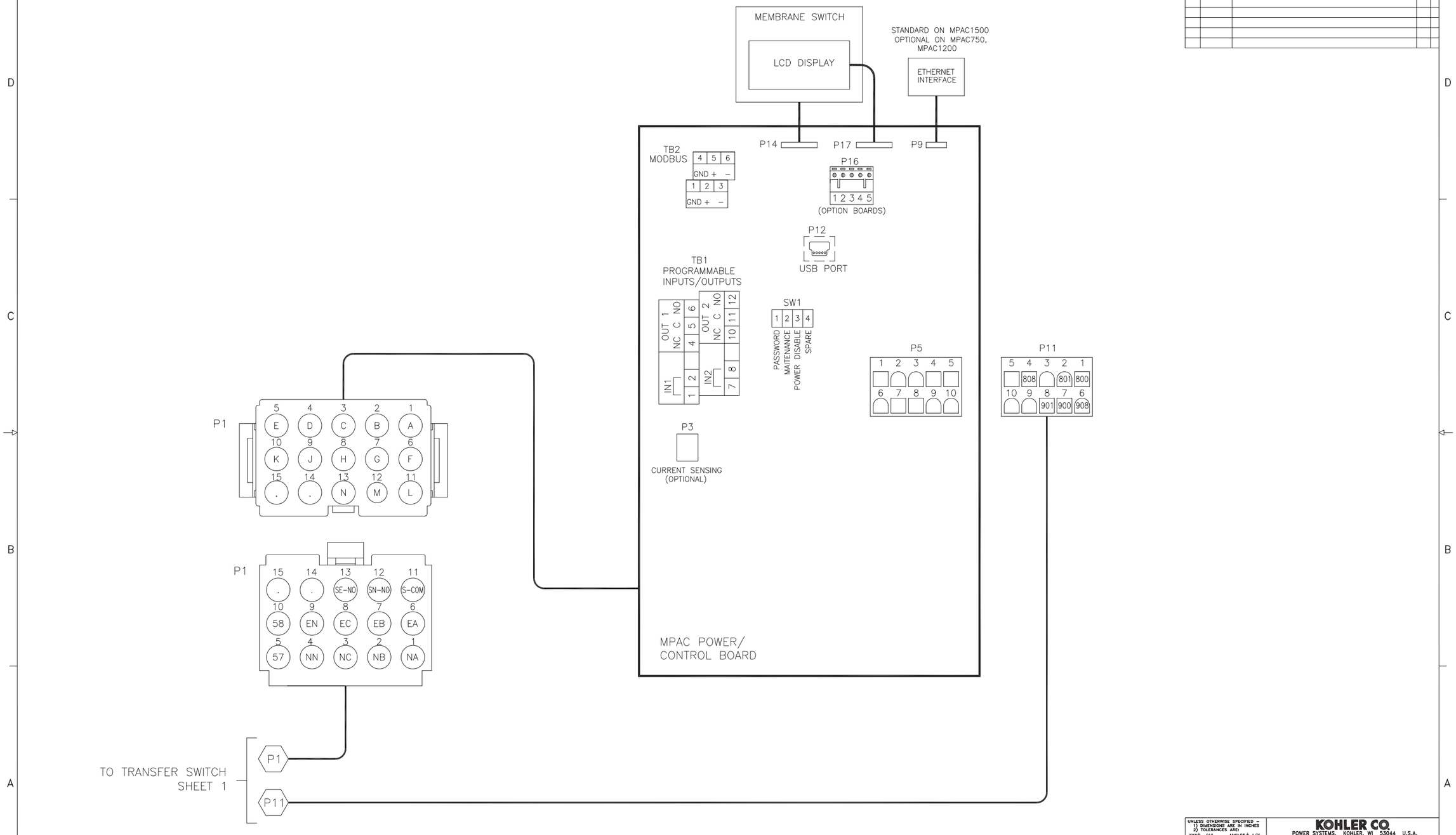
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12-3-13
CHECKED MTL	12-3-13
APPROVED HCC	12-3-13

TITLE: DIAGRAM, WIRING
SCALE: / / /
CAD NO.
SHEET 3-4
PLOTTED
DWG. NO. GM89702 D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–5) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



MODEL KGP
150–400A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89701

UNLESS OTHERWISE SPECIFIED –
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.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

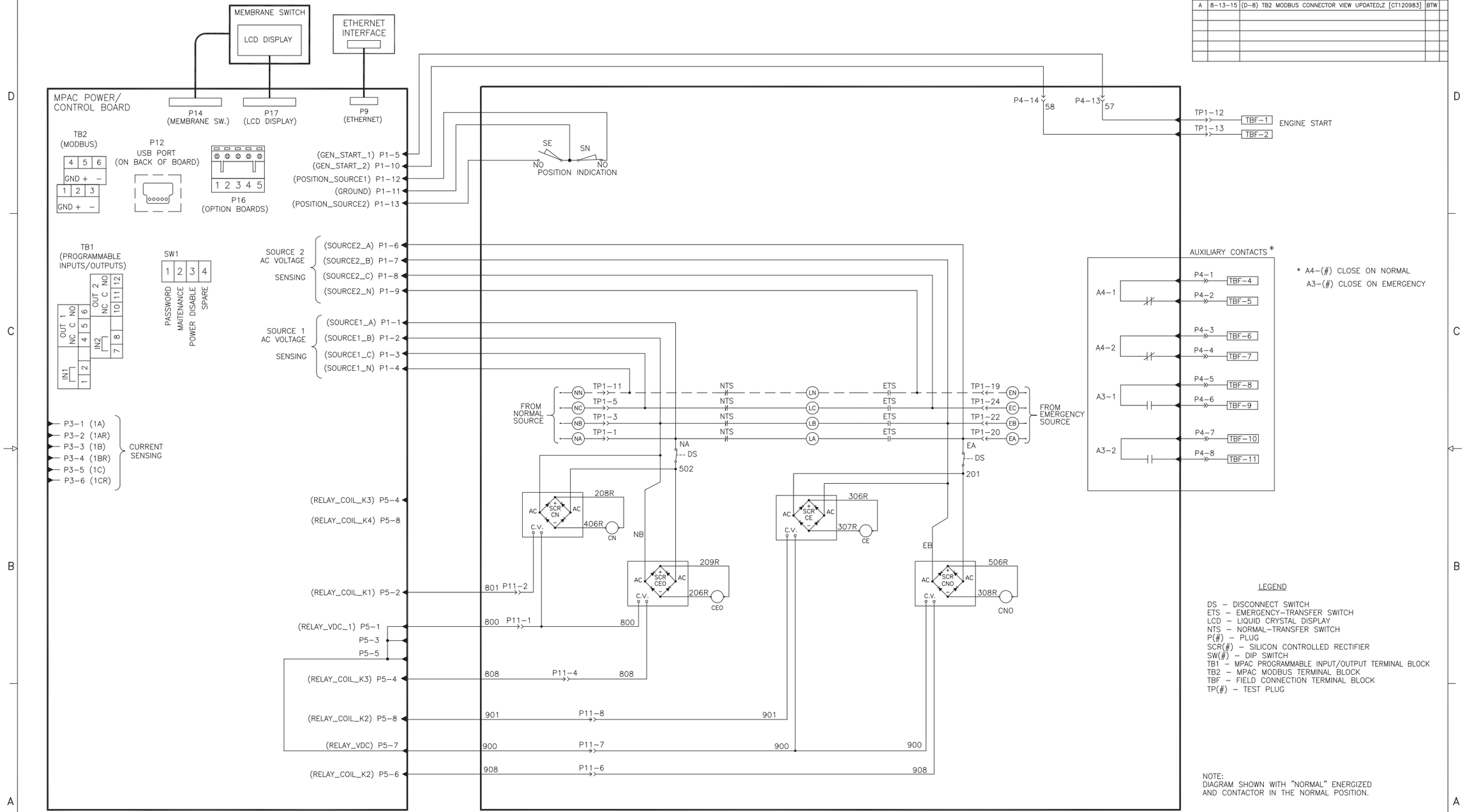
APPROVALS		DATE
DRAWN	DFS	12–3–13
CHECKED	MTL	12–3–13
APPROVED	HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE: / / / | CAD NO. | SHEET 4–4

PLOTTED | DWG. NO. GM89702 | D

REV	DATE	REVISION	BY	W F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	(D-8) TB2 MODBUS CONNECTOR VIEW UPDATED;Z [CT120983]	BTW	



LEGEND

DS – DISCONNECT SWITCH
ETS – EMERGENCY–TRANSFER SWITCH
LCD – LIQUID CRYSTAL DISPLAY
NTS – NORMAL–TRANSFER SWITCH
P(#) – PLUG
SCR(#) – SILICON CONTROLLED RECTIFIER
SW(#) – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TBF – FIELD CONNECTION TERMINAL BLOCK
TP(#) – TEST PLUG

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

SCR PULSE SEQUENCE:
CNO – NORMAL TO OFF
CE – OFF TO EMERGENCY
CEO – EMERGENCY TO OFF
CN – OFF TO NORMAL

MODEL KGP
600–1200A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR WIRING DIAGRAM SEE GM89706

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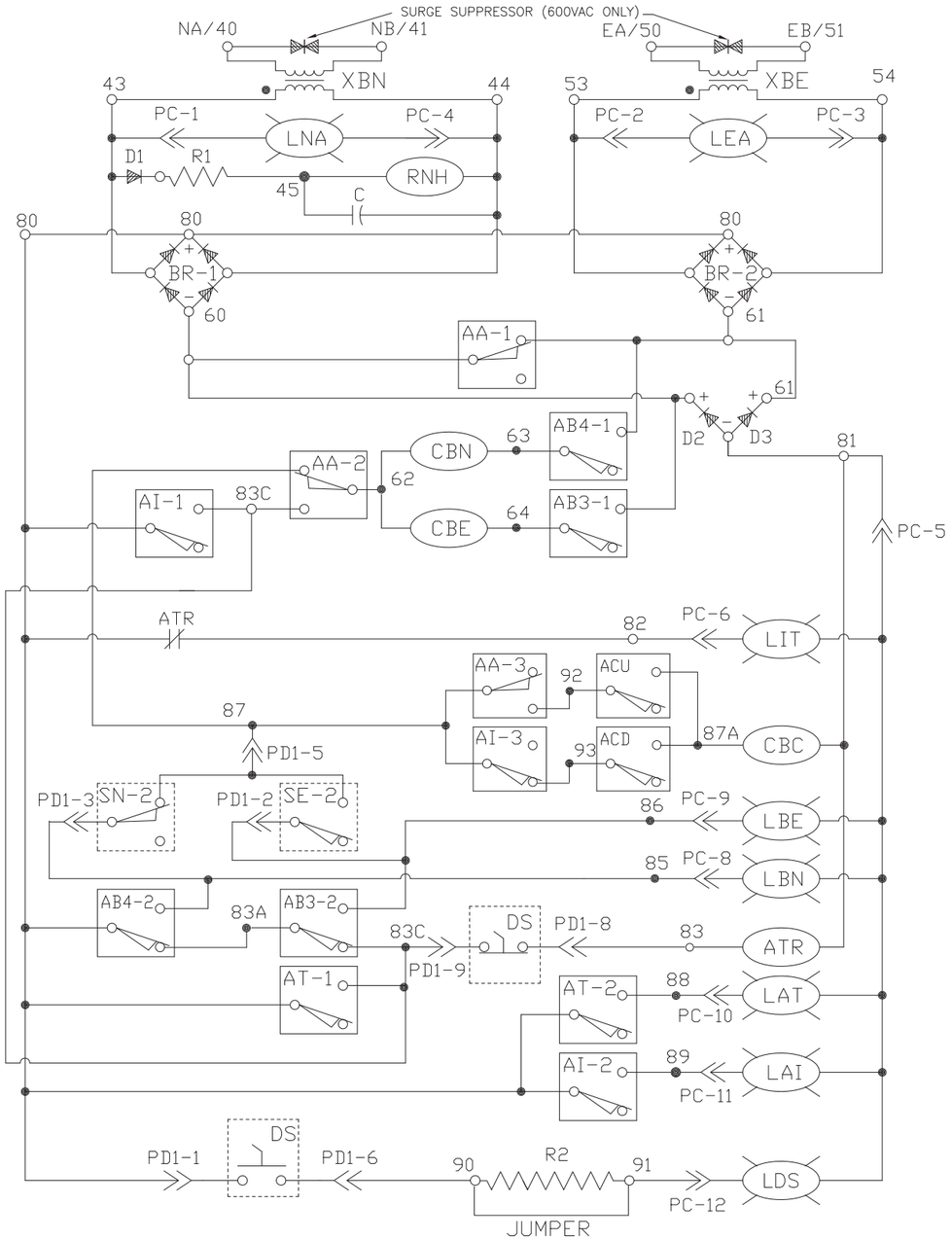
APPROVALS	DATE
DRAWN DFS	12-3-13
CHECKED MTL	12-3-13
APPROVED HCC	12-3-13

TITLE: DIAGRAM, SCHEMATIC
SCALE: / / /
CAD NO.
SHEET 1–2
PLOTTED
DWG. NO. GM89705 D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 1 [CT120983]	BTW	

BYPASS/ISOLATION SCHEMATIC



XBN – BYPASS SOURCE 1 CONTROL TRANSFORMER
XBE – BYPASS SOURCE 2 CONTROL TRANSFORMER
LNA – SOURCE 1 AVAILABLE LIGHT
LEA – SOURCE 2 AVAILABLE LIGHT
RNH – NORMALLY HELD RELAY
D1,2,3 – DIODE
R1 – RESISTOR, RNH
C – CAPACITOR, RNH
BR–1,2 – BRIDGE RECTIFIER
AA–1 – LIMIT SWITCH, ATS AUTO LOCATION
AA–3 – LIMIT SWITCH, ATS AUTO LOCATION

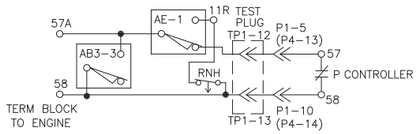
AB4–1 – LIMIT SWITCH, BYPASS SOURCE 1
CBN – SOURCE 1 TRANSFER OPERATOR
AA–2 – LIMIT SWITCH, ATS IN AUTO
AB3–1 – LIMIT SWITCH, BYPASS SOURCE 2
CBE – SOURCE 2 TRANSFER OPERATOR
ACD – LIMIT SWITCH, CRANK HANDLE
ACU – ENGAGED
LIT – ATS INHIBIT LIGHT
AI–1 – LIMIT SWITCH, ATS IN ISOLATE
AI–3 – LIMIT SWITCH, ATS IN ISOLATE
CH–1 – LIMIT SWITCH
CBC – CRANK SOLENOID
SN2 – LIMIT SWITCH – ATS, SOURCE 1
SE2 – LIMITS SWITCH – ATS, SOURCE 2
LBE – LIGHT, BYPASS SOURCE 2
LBN – LIGHT, BYPASS SOURCE 1
AB4–2 – LIMIT SWITCH, BYPASS SOURCE 1
AB3–2 – LIMIT SWITCH, BYPASS SOURCE 2
ATR – AUTO/TEST RELAY
AT–1 – LIMIT SWITCH, ATS TEST LOCATION
LAT – ATS TEST LOCATION
AT–2 – LIMIT SWITCH, ATS IN TEST
LAI – ATS ISOLATE LIGHT
AI–2 – LIMIT SWITCH, ATS IN ISOLATE
DS – ATS DISCONNECT SWITCH
LDS – DISCONNECT SWITCH, INHIBIT POSITION LIGHT
R2 – RESISTOR, BRAIN BOX ASSEMBLY

LIMIT SWITCH CHART

X = ACTUATED	ATS LOCATION				ATS MODE		BYPASS MODE		
	AUTO	TEST	ISO	REMOVE	SOURCE 1	SOURCE 2	SOURCE 1	SOURCE 2	OPEN
AA	X								
AT		X							
AI			X	X					
AE			X	X					
SN					X				
SE						X			
AB4							X		
AB3								X	

ENGINE START SCHEMATIC

AE–1 – LIMIT SWITCH, ENGINE START TRANSFER
AB3–3– LIMIT SWITCH, BYPASS SOURCE 2



AUTO/TEST RELAY CONTACT LOCATED ON BYPASS SUBPANEL

SOURCE 1/SOURCE 2 TRANSFER PERMIT CIRCUIT. (ALH IN AUTO AND TEST LOCATION WITH DS IN AUTO POSITION)

INTERNAL USE ONLY

LOCATED ON ATS

LOCATED ON BYPASS

NOTES

ATS SHOWN IN SOURCE 1 POSITION WITH NO POWER AVAILABLE.

LEGEND

- WIRE CONNECTION
- WIRE ON TERMINAL BLOCK
- WIRE IN INTERCONNECT PLUG

MODEL KGP
600–1200A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR WIRING DIAGRAM SEE GM89706

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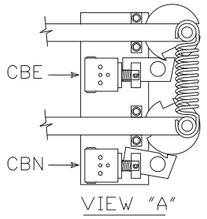
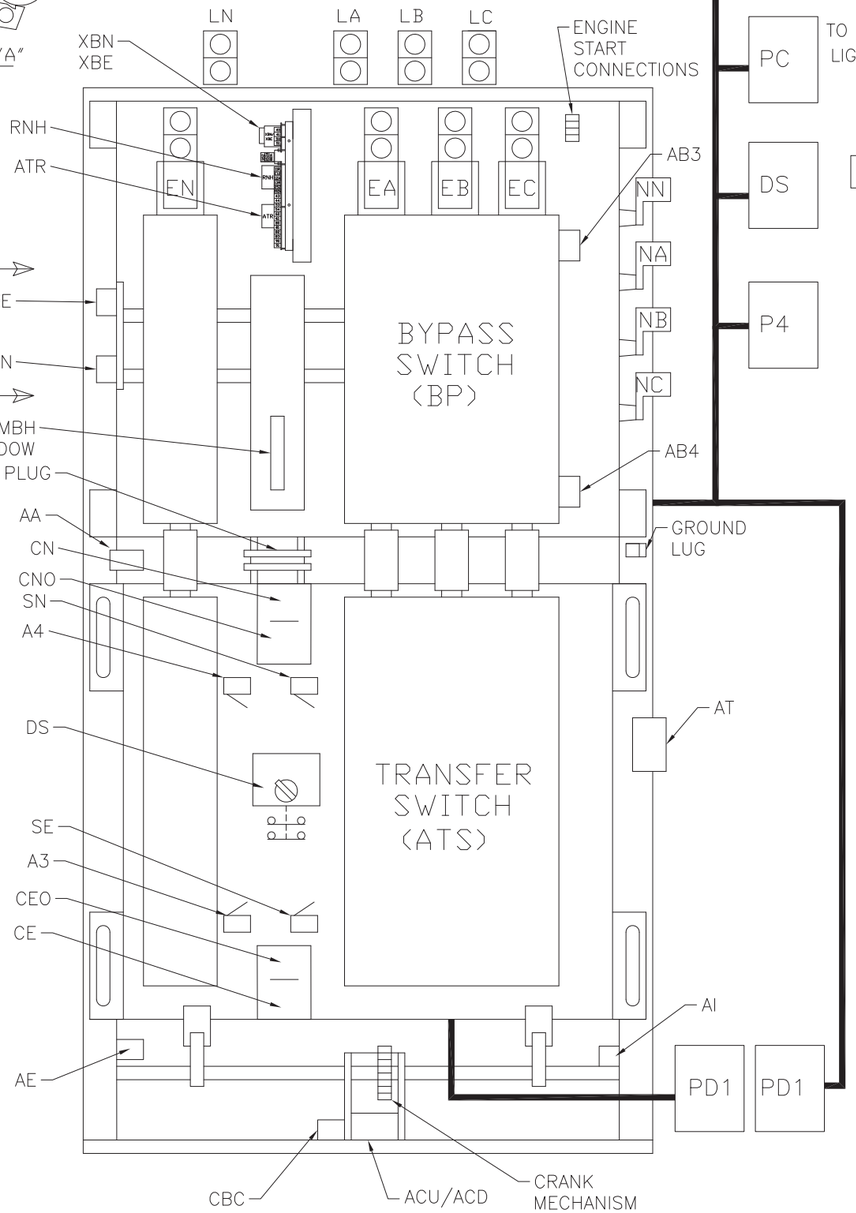
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

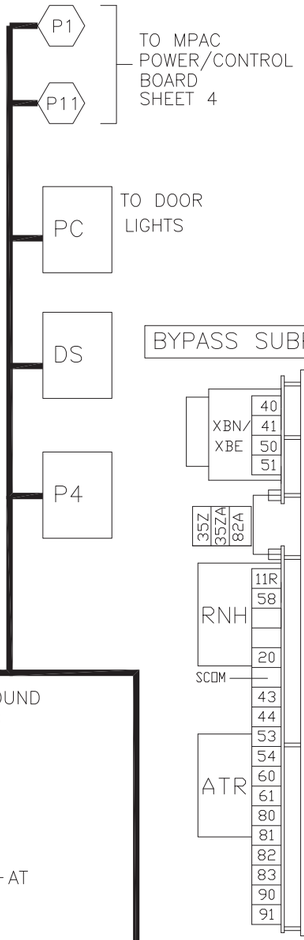
TITLE: DIAGRAM, SCHEMATIC
SCALE: / / / | CAD NO. | SHEET 2–2
PLOTTED | DWG. NO. GM89705 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

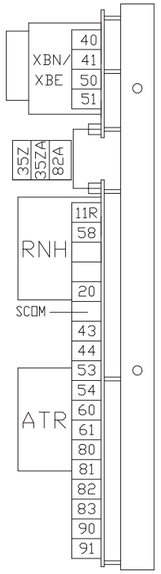


BYPASS/ISOLATION TRANSFER SWITCH

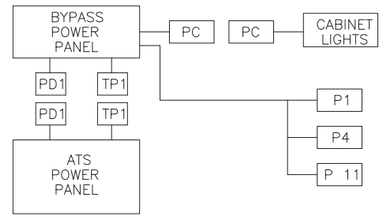




BYPASS SUBPANEL



INTERCONNECTION PLUG DIAGRAM



WIRE NUMBERING CHART

LIMIT SWITCHES	C	NC	NO
AA–1	60		61
AA–2	62	83C	87
AA–3	87	92	
AB3–1	64		60
AB3–2	83A	83C	86
AB3–3	58		57A
AB4–1	63		61
AB4–2	80	83A	85
ACD	93		87A
ACU	92		87A
AE–1	57A	57	11R
AI–1	80		83C
AI–2	80		89
AI–3	87	93	
AT–1	80		83C
AT–2	80		88
SE–2	86		87
SN–2	85		87

INTERCONNECT PLUGS

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO
9				
13	57	58	20	SCOM
17	SNO NO	SEO NO		
21				

PC PLUG

MALE PLUG

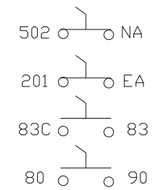
43	53	54	44
81	82		85
86	88	89	91

PD1 PLUG

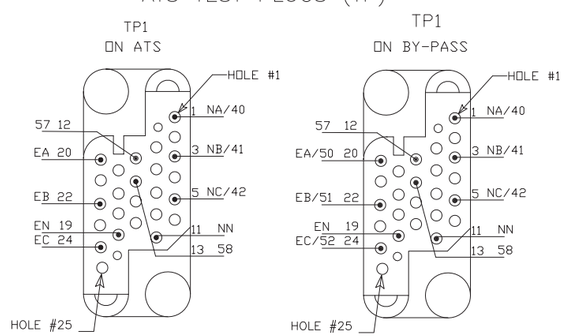
MALE PLUG

80	86	85		87
90		83	83C	
20	SCOM			

DISCONNECT SWITCH (DS)



ATS TEST PLUGS (TP)



MODEL KGP
600–1200A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89705

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APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 1–4

PLOTTED | DWG. NO. GM89706 | D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1–11	P4–15			
	80	PD1–1	DISCONNECT SWITCH (NC)			
	83	PD1–8	DISCONNECT SWITCH (NO)			
	83C	PD1–9	DISCONNECT SWITCH (NO)			
	85	PD1–3	LIMIT SWITCH SN–2 (COM)			
	86	PD1–2	LIMIT SWITCH SE–2 (COM)			
	87	PD1–5	LIMIT SWITCH SN–2 (NO)	LIMIT SWITCH SE–2 (NO)		
	90	PD1–6	DISCONNECT SWITCH (NC)			
	SCOM	PD1–12	P4–16			
P1	NA	SEE TP1				
	NB	SEE TP1				
	NC	SEE TP1				
	NN	SEE TP1				
	EA	SEE TP1				
	EB	SEE TP1				
	EC	SEE TP1				
	EN	SEE TP1				
	SN–NO	P1–12	LIMIT SWITCH SN (NO)			
	SE–NO	P1–13	LIMIT SWITCH SE (NO)			
	S–COM	P1–11	LIMIT SWITCH SN (COM)	LIMIT SWITCH SE (COM)	LIMIT SWITCH SEO (COM)	LIMIT SWITCH SNO (COM)
	57	SEE TP1				
	58	SEE TP1				
P4	CA4–1	LIMIT SWITCH A4–1 (COM)	P4–1			
	A4–1	LIMIT SWITCH A4–1 (NO)	P4–2			
	CA4–2	LIMIT SWITCH A4–2 (COM)	P4–3			
	A4–2	LIMIT SWITCH A4–2 (NO)	P4–4			
	CA3–1	LIMIT SWITCH A3–1 (COM)	P4–5			
	A3–1	LIMIT SWITCH A3–1 (NO)	P4–6			
	CA3–2	LIMIT SWITCH A3–2 (COM)	P4–7			
	A3–2	LIMIT SWITCH A3–2 (NO)	P4–8			
	57	SEE TP1				
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	SNO–NO	P4–17	LIMIT SWITCH SNO (NO)			
	SEO–NO	P4–18	LIMIT SWITCH SEO (NO)			
P11	800	P11–1	SCR–CN (CV)	SCR–CEO (CV)		
	801	P11–2	SCR–CN (CV)			
	808	P11–4	SCR–CEO (CV)			
	900	P11–7	SCR–CE (CV)	SCR–CNO (CV)		
	901	P11–8	SCR–CE (CV)			
	908	P11–6	SCR–CNO (CV)			
TP1	NA	TP1–1	DISCONNECT BLOCK (COM)	P1–1		
	NB	TP1–3	SCR–CN (AC)	P1–2		
	NC	TP1–5	P1–3			
	NN	TP1–11	P1–4			
	EA	TP1–20	DISCONNECT BLOCK (COM)	P1–6		
	EB	TP1–22	SCR–CE (AC)	P1–7		
	EC	TP1–24	P1–8			
	EN	TP1–19	P1–9			
	57	TP1–12	P4–13	P1–5		
	58	TP1–13	P4–14	P1–10		
	201	DISCONNECT SWITCH (NC)	SCR–CE (AC)	SCR–CNO (AC)		
	502	DISCONNECT SWITCH (NC)	SCR–CN (AC)	SCR–CEO (AC)		

P1 PLUG

MALE PLUG

NA	NB	NC	NN	57
EA	EB	EC	EN	58
S–COM	SN–NO	SE–NO		

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO	4
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO	8
9					12
13	57	58	20	SCOM	16
17	SNO NO	SEO NO			20
21					24

PD1 PLUG

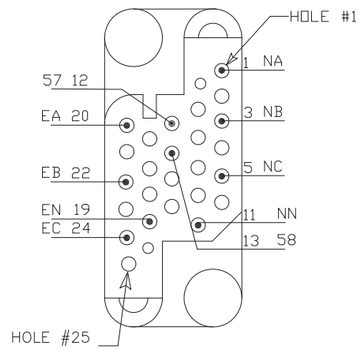
MALE PLUG

80	86	85		87
90		83	83C	
20	SCOM			

P11 PLUG MOLEX

1	800	801		808	5
6	908	900	901		10

TP1 ON ATS



MODEL KGP
600–1200A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89705

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX± .010 ANGLES± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

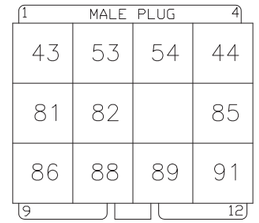
SCALE / / / | CAD NO. | SHEET 2–4

PLOTTED | DWG. NO. GM89706 | D

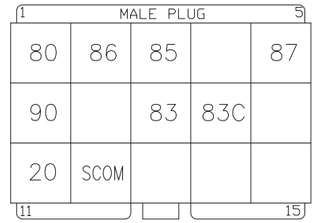
REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-13-15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1–11	CN2			
	80	PD1–1	AI–2 (COM)	AT–2 (COM)	AT–1 (COM)	AB4–2 (COM)
			AI–1 (COM)	BYPASS ASSEMBLY LOGIC (CN2)		
	83	PD1–8	CN2			
	83C	PD1–9	AB3–2 (NC)	AT–1 (NO)	AI–1 (NC)	AA–2 (NC)
	85	PD1–3	AB4–2 (NO)	PC–8		
	86	PD1–2	AB3–2 (NO)	PC–9		
	87	PD1–5	AA–2 (NO)	AA–3 (COM)	AI–3 (COM)	
	90	PD1–6	CN2			
	SCOM	PD1–12	CN2			
TP1	NA/40	TP1–1	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	NB/41	TP1–3	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	NC/42	TP1–5	CUST CONNECT – PHASE C			
	NN	TP1–11	CUST CONNECT – NEUTRAL			
	EA/50	TP1–20	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	EB/51	TP1–22	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	EC/52	TP1–24	CUST CONNECT – PHASE C			
	EN	TP1–19	CUST CONNECT – NEUTRAL			
	57	TP1–12	AE–1 (NC)	P1–5	P4–13	
	58	TP1–13	BYPASS ASSEMBLY LOGIC (CN2)	AB3–3 (COM)	T–BLOCK. ENGINE START	P1–10
		P4–14				
CONNECTOR CN2	11R	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AE–1 (NO)			
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	43	BYPASS LOGIC ASSEMBLY	PC–1			
	44	BYPASS LOGIC ASSEMBLY	PC–4			
	53	BYPASS LOGIC ASSEMBLY	PC–2			
	54	BYPASS LOGIC ASSEMBLY	PC–3			
	60	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (COM)	LIMIT SWITCH AB3–1 (NO)		
	61	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (NO)	LIMIT SWITCH AB4–1 (NO)		
	80	SEE PD1				
	81	BYPASS LOGIC ASSEMBLY	SOLENOID CBC	PC–5		
	82	BYPASS LOGIC ASSEMBLY	PC–6			
	83	SEE PD1				
	90	SEE PD1				
	91	BYPASS LOGIC ASSEMBLY	PC–12			
	57A	T–BLOCK ENGINE START	LIMIT SWITCH AB3–3 (NO)	LIMIT SWITCH AE–1 (COM)		
	62	LIMIT SWITCH AA–2 (COM)	SOLENOID CBN	SOLENOID CBE		
	63	SOLENOID CBN	LIMIT SWITCH AB4–1 (COM)			
	64	SOLENOID CBE	LIMIT SWITCH AB3–1 (COM)			
	83A	LIMIT SWITCH AB3–2 (COM)	LIMIT SWITCH AB4–2 (NC)			
	87A	LIMIT SWITCH ACU (NO)	LIMIT SWITCH ACD (NO)	SOLENOID CBC		
	88	LIMIT SWITCH AT–2 (NO)	PC–10			
	89	LIMIT SWITCH AI –2 (NO)	PC–11			
	92	LIMIT SWITCH AA–3 (NC)	ACU (COM)			
	93	LIMIT SWITCH AI–3 (NC)	ACD (COM)			
CONNECTOR PC VIA 46W–2001G	43	PC–1	LIGHT – SOURCE 1 AVAILABLE			
	53	PC–2	LIGHT – SOURCE 2 AVAILABLE			
	54	PC–3	LIGHT – SOURCE 2 AVAILABLE			
	44	PC–4	LIGHT – SOURE 1 AVAILABLE			
	81	PC–5	LIGHTS – COMMON			
	82	PC–6	LIGHT – ATS INHIBIT			
	85	PC–8	LIGHT – BYPASS SOURCE 1			
	86	PC–9	LIGHT – BYPASS SOURCE 2			
	88	PC–10	LIGHT – ATS TEST LOC.			
	89	PC–11	LIGHT – ATS ISOLATE LOC.			
	91	PC–12	LIGHT – DISCONNECT INHIBIT			

PC PLUG

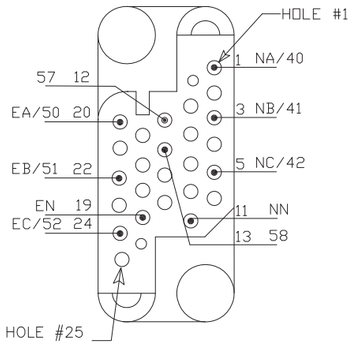


PD1 PLUG

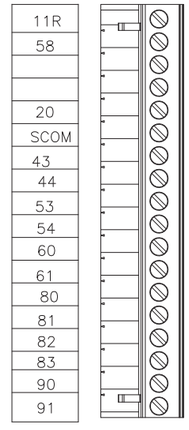


TP1

ON BY-PASS



CN2



MODEL KGP
600–1200A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89705

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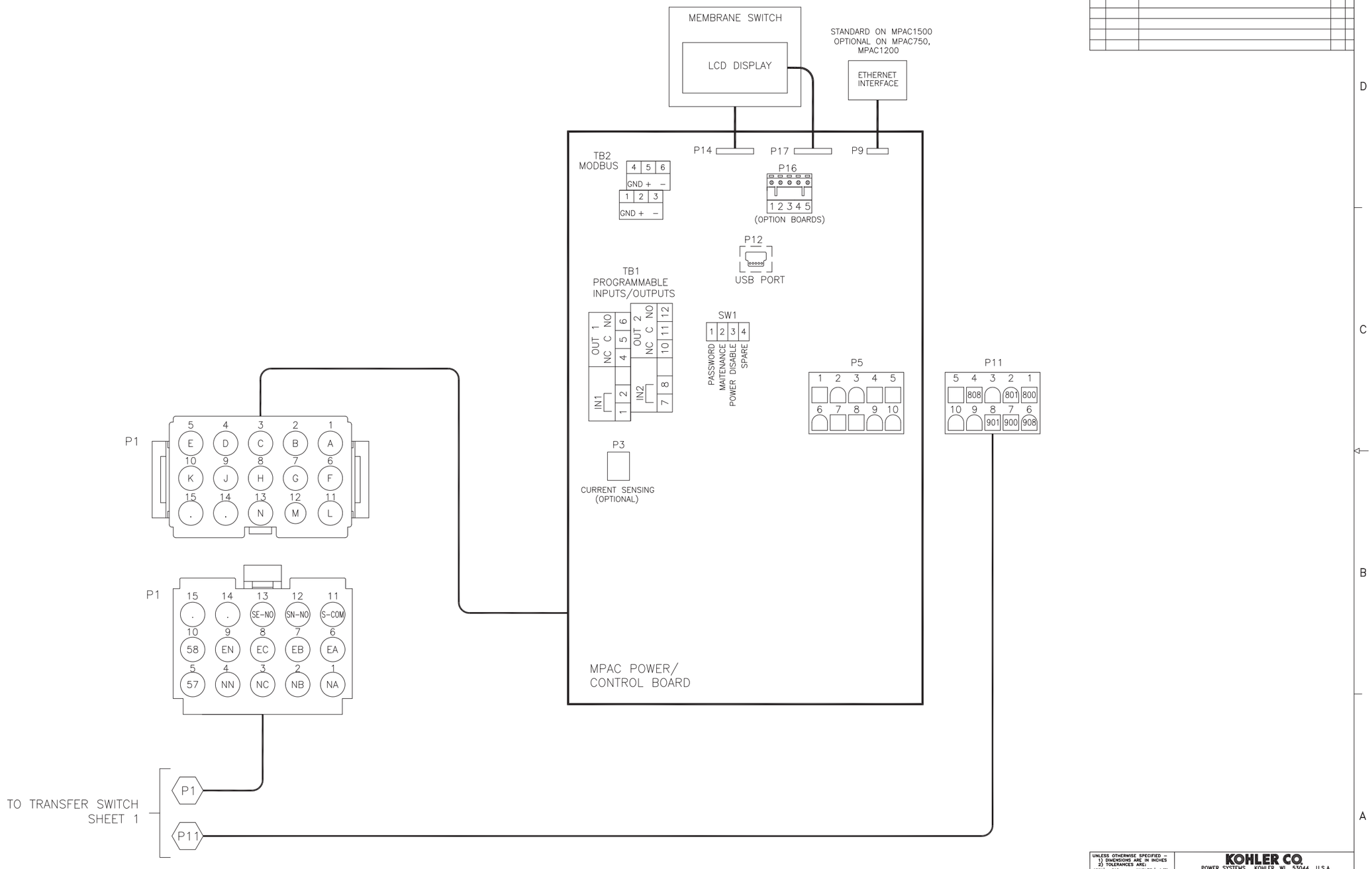
APPROVALS		DATE
DRAWN	DFS	12–3–13
CHECKED	MTL	12–3–13
APPROVED	HCC	12–3–13

KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 3–4
PLOTTED | DWG. NO. GM89706 | D

REV	DATE	REVISION	BY	MFT
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–13–15	(D–4) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



MODEL KGP
600–1200A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89705

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 4–4
PLOTTED | DWG. NO. GM89706 | D

REV	DATE	REVISION	BY	W F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-14-15	(D-8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

MEMBRANE SWITCH
LCD DISPLAY
ETHERNET INTERFACE

MPAC POWER/ CONTROL BOARD

P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)

TB2 (MODBUS)
4 5 6
GND + –
1 2 3
GND + –

P12 USB PORT (ON BACK OF BOARD)

P16 (OPTION BOARDS)
1 2 3 4 5

TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
OUT 1 NC C NO 4 5 6
OUT 2 NC C NO 10 11 12
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAINTENANCE
POWER DISABLE
SPARE

(GEN_START_1) P1–5
(GEN_START_2) P1–10
(POSITION_SOURCE1) P1–12
(GROUND) P1–11
(POSITION_SOURCE2) P1–13

SE NO
SN NO
POSITION INDICATION

P4–14 58
P4–13 57
TP1–12 → TBF–1
TP1–13 → TBF–2
ENGINE START

SOURCE 2 AC VOLTAGE SENSING
(SOURCE2_A) P1–6
(SOURCE2_B) P1–7
(SOURCE2_C) P1–8
(SOURCE2_N) P1–9

SOURCE 1 AC VOLTAGE SENSING
(SOURCE1_A) P1–1
(SOURCE1_B) P1–2
(SOURCE1_C) P1–3
(SOURCE1_N) P1–4

AUXILIARY CONTACTS *
A4–1 P4–1 → TBF–4, P4–2 → TBF–5
A4–2 P4–3 → TBF–6, P4–4 → TBF–7
A3–1 P4–5 → TBF–8, P4–6 → TBF–9
A3–2 P4–7 → TBF–10, P4–8 → TBF–11

* A4–(#) CLOSE ON NORMAL
A3–(#) CLOSE ON EMERGENCY

FROM NORMAL SOURCE
NN TP1–11
NC TP1–5
NB TP1–3
NA TP1–1
NTS
LN LC LB LA
ETS
EN TP1–19
EC TP1–24
EB TP1–22
EA TP1–20
FROM EMERGENCY SOURCE

NA -- DS 502
EA -- DS 201
NB
FB

208R SCR CN 406R CN
306R SCR CE 307R CE
209R SCR CEO 206R CEO
506R SCR CNO 308R CNO
AC, C.V.

CURRENT SENSING
P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)

(RELAY_COIL_K1) P5–2 — 801 P11–2
(RELAY_VDC_1) P5–1 — 800 P11–1 800
P5–3
P5–5
(RELAY_COIL_K3) P5–4 — 808 P11–4 808
(RELAY_COIL_K4) P5–8 — 901 P11–8 901
(RELAY_VDC) P5–7 — 900 P11–7 900 900
(RELAY_COIL_K2) P5–6 — 908 P11–6 908

LEGEND

DS – DISCONNECT SWITCH
ETS – EMERGENCY–TRANSFER SWITCH
LCD – LIQUID CRYSTAL DISPLAY
NTS – NORMAL–TRANSFER SWITCH
P(#) – PLUG
SCR(#) – SILICON CONTROLLED RECTIFIER
SW(#) – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TBF – FIELD CONNECTION TERMINAL BLOCK
TP(#) – TEST PLUG

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

SCR PULSE SEQUENCE:
CNO – NORMAL TO OFF
CE – OFF TO EMERGENCY
CEO – EMERGENCY TO OFF
CN – OFF TO NORMAL

MODEL KGP
1600–3000A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR WIRING DIAGRAM SEE GM89710

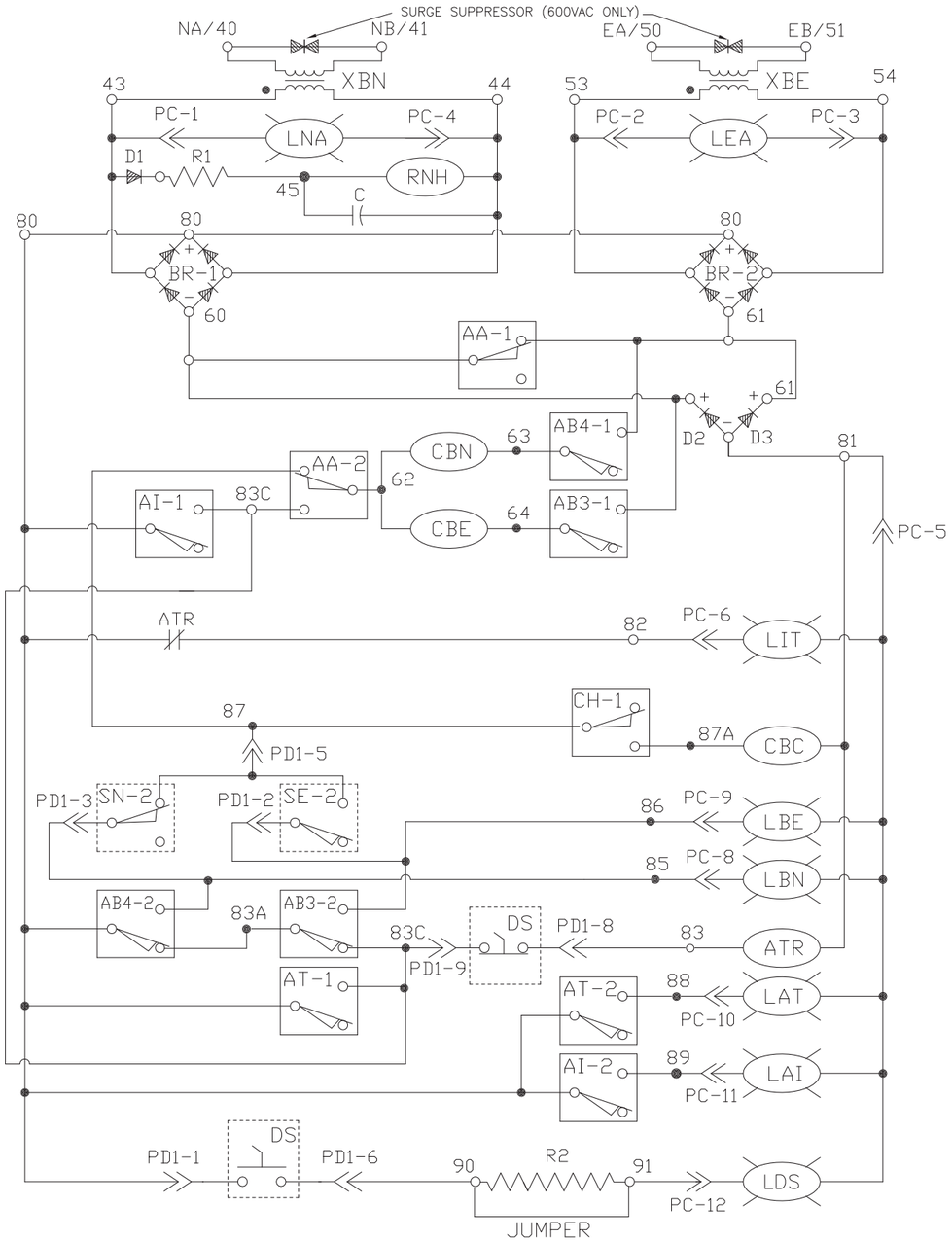
UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX ± .010 ANGLES ± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC
SCALE: / / / CAD NO. SHEET 1–2
PLOTTED DWG. NO. GM89709 D

REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–14–15	SEE SHEET 1 [CT120983]	BTW	

BYPASS/ISOLATION SCHEMATIC



XBN – BYPASS SOURCE 1 CONTROL TRANSFORMER
XBE – BYPASS SOURCE 2 CONTROL TRANSFORMER
LNA – SOURCE 1 AVAILABLE LIGHT
LEA – SOURCE 2 AVAILABLE LIGHT
RNH – NORMALLY HELD RELAY
D1,2,3 – DIODE
R1 – RESISTOR, RNH
C – CAPACITOR, RNH
BR–1,2 – BRIDGE RECTIFIER
AA–1 – LIMIT SWITCH, ATS AUTO LOCATION

AB4–1 – LIMIT SWITCH, BYPASS SOURCE 1
CBN – SOURCE 1 TRANSFER OPERATOR
AA–2 – LIMIT SWITCH, ATS IN AUTO
AB3–1 – LIMIT SWITCH, BYPASS SOURCE 2
CBE – SOURCE 2 TRANSFER OPERATOR

LIT – ATS INHIBIT LIGHT
AI–1 – LIMIT SWITCH, ATS IN ISOLATE

CH–1 – LIMIT SWITCH
CBC – CRANK SOLENOID
SN2 – LIMIT SWITCH – ATS, SOURCE 1
SE2 – LIMITS SWITCH – ATS, SOURCE 2
LBE – LIGHT, BYPASS SOURCE 2
LBN – LIGHT, BYPASS SOURCE 1
AB4–2 – LIMIT SWITCH, BYPASS SOURCE 1
AB3–2 – LIMIT SWITCH, BYPASS SOURCE 2
ATR – AUTO/TEST RELAY
AT–1 – LIMIT SWITCH, ATS TEST LOCATION
LAT – ATS TEST LOCATION
AT–2 – LIMIT SWITCH, ATS IN TEST
LAI – ATS ISOLATE LIGHT
AI–2 – LIMIT SWITCH, ATS IN ISOLATE
DS – ATS DISCONNECT SWITCH
LDS – DISCONNECT SWITCH, INHIBIT POSITION LIGHT
R2 – RESISTOR, BRAIN BOX ASSEMBLY

LOCATED ON ATS

LOCATED ON BYPASS

NOTES

ATS SHOWN IN SOURCE 1 POSITION WITH NO POWER AVAILABLE.

LEGEND

- WIRE CONNECTION
- WIRE ON TERMINAL BLOCK
- WIRE IN INTERCONNECT PLUG

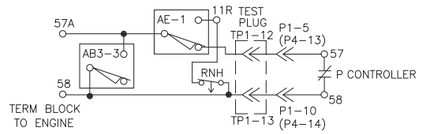
LIMIT SWITCH CHART

X = ACTUATED	ATS LOCATION				ATS MODE		BYPASS MODE	
	AUTO	TEST	ISO	REMOVE	SOURCE 1	SOURCE 2	SOURCE 1	SOURCE 2	OPEN
AA	X								
AT		X							
AI			X	X					
AE			X	X					
SN					X				
SE						X			
AB4							X		
AB3								X	

ENGINE START SCHEMATIC

AE–1 – LIMIT SWITCH, ENGINE START TRANSFER

AB3–3– LIMIT SWITCH, BYPASS SOURCE 2



AUTO/TEST RELAY CONTACT LOCATED ON BYPASS SUBPANEL

SOURCE 1/SOURCE 2 TRANSFER PERMIT CIRCUIT. (ALH IN AUTO AND TEST LOCATION WITH DS IN AUTO POSITION)

INTERNAL USE ONLY

MODEL KGP
1600–3000A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR WIRING DIAGRAM SEE GM89710

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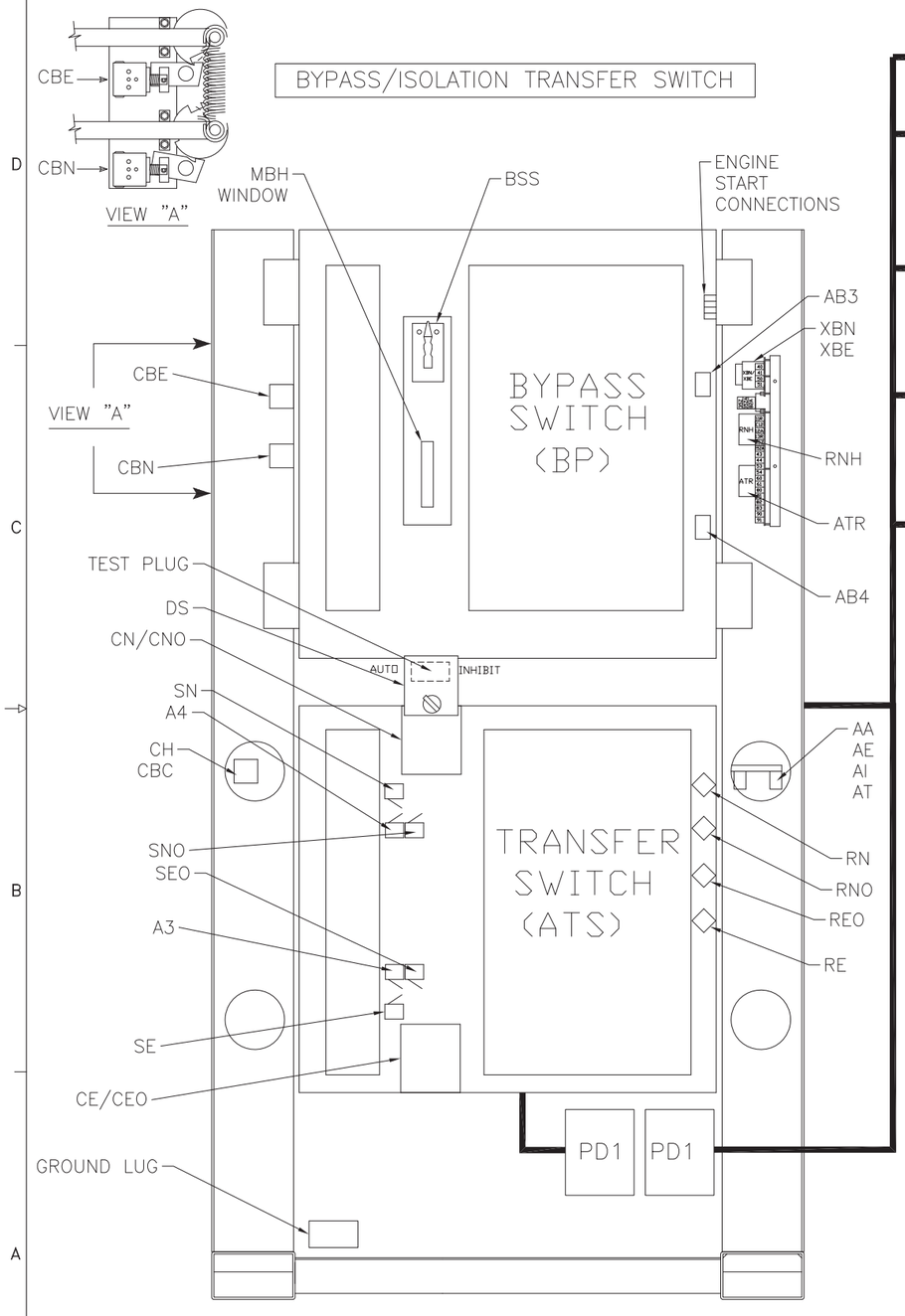
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, SCHEMATIC
SCALE: / / / | CAD NO. | SHEET 2–2
PLOTTED | DWG. NO. GM89709 | D

REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-14-15	SEE SHEET 4 [CT120983]	BTW	

BYPASS/ISOLATION TRANSFER SWITCH



P1 — TO MPAC POWER/CONTROL BOARD SHEET 4

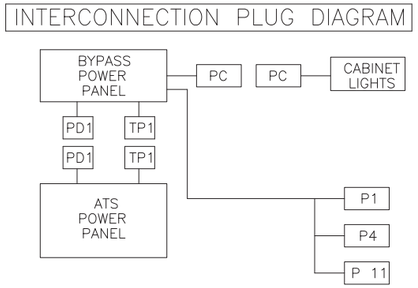
P11

PC — TO DOOR LIGHTS

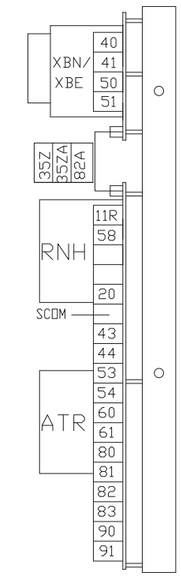
DS

P4

INTERCONNECTION PLUG DIAGRAM



BYPASS SUBPANEL



WIRE NUMBERING CHART

LIMIT SWITCHES	C	NC	NO
AA–1	60		61
AA–2	62	83C	87
AB3–1	64		60
AB3–2	83A	83C	86
AB3–3	58		57A
AB4–1	63		61
AB4–2	80	83A	85
AE–1	57A	57	11R
AI–1	80		83C
AI–2	80		89
AT–1	80		83C
AT–2	80		88
CH–1	87	87A	
SE–2	86		87
SN–2	85		87

INTERCONNECT PLUGS

P4 PLUG

1	A4–1 COM	A4–1 NO	A4–2 COM	A4–2 NO	4
5	A3–1 COM	A3–1 NO	A3–2 COM	A3–2 NO	8
9					12
13	57	58	20	SCOM	16
17	SNO NO	SEO NO			20
21					24

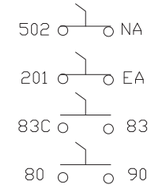
PC PLUG

1 MALE PLUG 4			
43	53	54	44
81	82		85
86	88	89	91
9			12

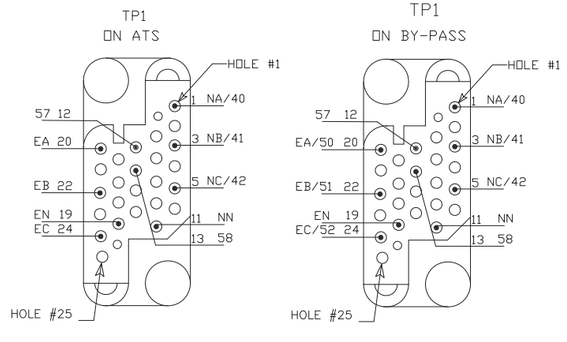
PD1 PLUG

1 MALE PLUG 5				
80	86	85		87
90		83	83C	
20	SCOM			
11				15

DISCONNECT SWITCH (DS)



ATS TEST PLUGS (TP)



MODEL KGP
1600–3000A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89709

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXXX ± .0010 .XX ± .030 .X ± .060 FRACTIONS ± ANGLES ± 1/2 SURFACE FINISH √ MAX.

APPROVALS	DATE
DRAWN DFS	12-3-13
CHECKED MTL	12-3-13
APPROVED HCC	12-3-13

TITLE: DIAGRAM, WIRING

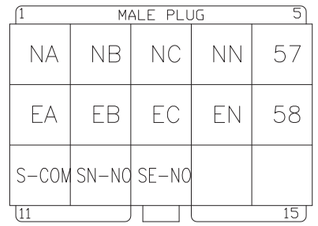
SCALE / / / | CAD NO. | SHEET 1–4

PLOTTED | DWG. NO. GM89710 | D

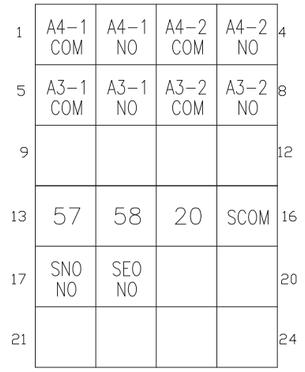
REV	DATE	REVISION	BY	M F
–	12–3–13	NEW DRAWING [CT55118]	DFS	
A	8–14–15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1–11	P4–15			
	80	PD1–1	DISCONNECT SWITCH (NC)			
	83	PD1–8	DISCONNECT SWITCH (NO)			
	83C	PD1–9	DISCONNECT SWITCH (NO)			
	85	PD1–3	LIMIT SWITCH SN–2 (COM)			
	86	PD1–2	LIMIT SWITCH SE–2 (COM)			
	87	PD1–5	LIMIT SWITCH SN–2 (NO)	LIMIT SWITCH SE–2 (NO)		
	90	PD1–6	DISCONNECT SWITCH (NC)			
	SCOM	PD1–12	P4–16			
P1	NA	SEE TP1				
	NB	SEE TP1				
	NC	SEE TP1				
	NN	SEE TP1				
	EA	SEE TP1				
	EB	SEE TP1				
	EC	SEE TP1				
	EN	SEE TP1				
	SN–NO	P1–12	LIMIT SWITCH SN (NO)			
	SE–NO	P1–13	LIMIT SWITCH SE (NO)			
	S–COM	P1–11	LIMIT SWITCH SN (COM)	LIMIT SWITCH SE (COM)	LIMIT SWITCH SEO (COM)	LIMIT SWITCH SNO (COM)
	57	SEE TP1				
	58	SEE TP1				
P4	CA4–1	LIMIT SWITCH A4–1 (COM)	P4–1			
	A4–1	LIMIT SWITCH A4–1 (NO)	P4–2			
	CA4–2	LIMIT SWITCH A4–2 (COM)	P4–3			
	A4–2	LIMIT SWITCH A4–2 (NO)	P4–4			
	CA3–1	LIMIT SWITCH A3–1 (COM)	P4–5			
	A3–1	LIMIT SWITCH A3–1 (NO)	P4–6			
	CA3–2	LIMIT SWITCH A3–2 (COM)	P4–7			
	A3–2	LIMIT SWITCH A3–2 (NO)	P4–8			
	57	SEE TP1				
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	SNO–NO	P4–17	LIMIT SWITCH SNO (NO)			
	SEO–NO	P4–18	LIMIT SWITCH SEO (NO)			
P11	800	P11–1	SCR–CN (CV)	SCR–CEO (CV)		
	801	P11–2	SCR–CN (CV)			
	808	P11–4	SCR–CEO (CV)			
	900	P11–7	SCR–CE (CV)	SCR–CNO (CV)		
	901	P11–8	SCR–CE (CV)			
	908	P11–6	SCR–CNO (CV)			
TP1	NA	TP1–1	DISCONNECT BLOCK (COM)	P1–1		
	NB	TP1–3	SCR–CN (AC)	SCR–CEO (AC)	P1–2	
	NC	TP1–5	P1–3			
	NN	TP1–10	P1–4			
	EA	TP1–20	DISCONNECT BLOCK (COM)	P1–6		
	EB	TP1–22	SCR–CE (AC)	SCR–CNO (AC)	P1–7	
	EC	TP1–24	P1–8			
	EN	TP1–19	P1–9			
	57	TP1–12	P4–13	P1–5		
	58	TP1–13	P4–14	P1–10		
	201	DISCONNECT SWITCH (NC)	SCR–CE (AC)	SCR–CNO (AC)		
	502	DISCONNECT SWITCH (NC)	SCR–CN (AC)	SCR–CEO (AC)		

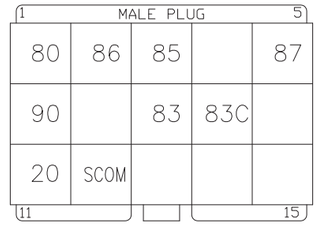
P1 PLUG



P4 PLUG

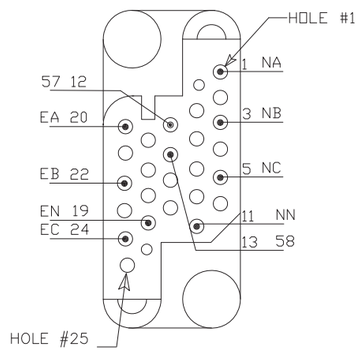


PD1 PLUG



P11 PLUG MOLEX

TP1 ON ATS



MODEL KGP
1600–3000A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89709

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

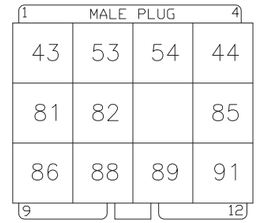
TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 2–4
PLOTTED | DWG. NO. GM89710 | D

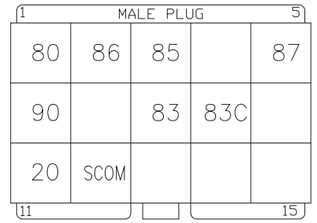
REV	DATE	REVISION	BY	M F
–	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-14-15	SEE SHEET 4 [CT120983]	BTW	

PLUG DESIGNATION	WIRE MARKING	START LOCATION	TERMINATION	TERMINATION	TERMINATION	TERMINATION
PD1	20	PD1–11	CN2			
	80	PD1–1	AI–2 (COM)	AT–2 (COM)	AT–1 (COM)	AB4–2 (COM)
			AI–1 (COM)	BYPASS ASSEMBLY LOGIC (CN2)		
	83	PD1–8	CN2			
	83C	PD1–9	AB3–2 (NC)	AT–1 (NO)	AI–1 (NC)	AA–2 (NC)
	85	PD1–3	AB4–2 (NO)	PC–8		
	86	PD1–2	AB3–2 (NO)	PC–9		
	87	PD1–5	AA–2 (NO)	CH–1 (COM)		
	90	PD1–6	CN2			
	SCOM	PD1–12	CN2			
TP1	NA/40	TP1–1	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	NB/41	TP1–3	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	NC/42	TP1–5	CUST CONNECT – PHASE C			
	NN	TP1–11	CUST CONNECT – NEUTRAL			
	EA/50	TP1–20	CUST CONNECT – PHASE A	Bypass Xfmr Box (JP1)		
	EB/51	TP1–22	CUST CONNECT – PHASE B	Bypass Xfmr Box (JP1)		
	EC/52	TP1–24	CUST CONNECT – PHASE C			
	EN	TP1–19	CUST CONNECT – NEUTRAL			
	57	TP1–12	AE–1 (NC)			
	58	TP1–13	BYPASS ASSEMBLY LOGIC (CN2)	AB3–3 (COM)	T–BLOCK, ENGINE START	
CONNECTOR CN2	11R	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AE–1 (NO)			
	58	SEE TP1				
	20	SEE PD1				
	SCOM	SEE PD1				
	43	BYPASS LOGIC ASSEMBLY	PC–1			
	44	BYPASS LOGIC ASSEMBLY	PC–4			
	53	BYPASS LOGIC ASSEMBLY	PC–2			
	54	BYPASS LOGIC ASSEMBLY	PC–3			
	60	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (COM)	LIMIT SWITCH AB3–1 (NO)		
	61	BYPASS LOGIC ASSEMBLY	LIMIT SWITCH AA–1 (NO)	LIMIT SWITCH AB4–1 (NO)		
	80	SEE PD1				
	81	BYPASS LOGIC ASSEMBLY	SOLENOID CBC	PC–5		
	82	BYPASS LOGIC ASSEMBLY	PC–6			
	83	SEE PD1				
	90	SEE PD1				
	91	BYPASS LOGIC ASSEMBLY	PC–12			
	57A	T–BLOCK ENGINE START	LIMIT SWITCH AB3–3 (NO)	LIMIT SWITCH AE–1 (COM)		
	62	LIMIT SWITCH AA–2 (COM)	SOLENOID CBN	SOLENOID CBE		
	63	SOLENOID CBN	LIMIT SWITCH AB4–1 (COM)			
	64	SOLENOID CBE	LIMIT SWITCH AB3–1 (COM)			
	83A	LIMIT SWITCH AB3–2 (COM)	LIMIT SWITCH AB4–2 (NC)			
	87A	CH–1 (NC)	SOLENOID CBC			
	88	LIMIT SWITCH AT–2 (NO)	PC–10			
	89	LIMIT SWITCH AI –2 (NO)	PC–11			
CONNECTOR PC VIA 46W–2001G	43	PC–1	LIGHT – SOURCE 1 AVAILABLE			
	53	PC–2	LIGHT – SOURCE 2 AVAILABLE			
	54	PC–3	LIGHT – SOURCE 2 AVAILABLE			
	44	PC–4	LIGHT – SOURE 1 AVAILABLE			
	81	PC–5	LIGHTS – COMMON			
	82	PC–6	LIGHT – ATS INHIBIT			
	85	PC–8	LIGHT – BYPASS SOURCE 1			
	86	PC–9	LIGHT – BYPASS SOURCE 2			
	88	PC–10	LIGHT – ATS TEST LOC.			
	89	PC–11	LIGHT – ATS ISOLATE LOC.			
	91	PC–12	LIGHT – DISCONNECT INHIBIT			

PC PLUG

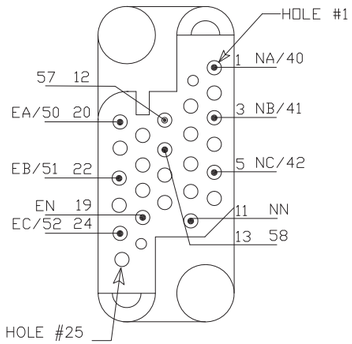


PD1 PLUG

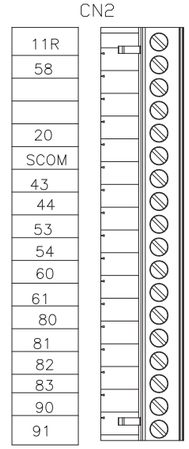


TP1

ON BY-PASS



CN2



MODEL KGP
1600–3000A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89709

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

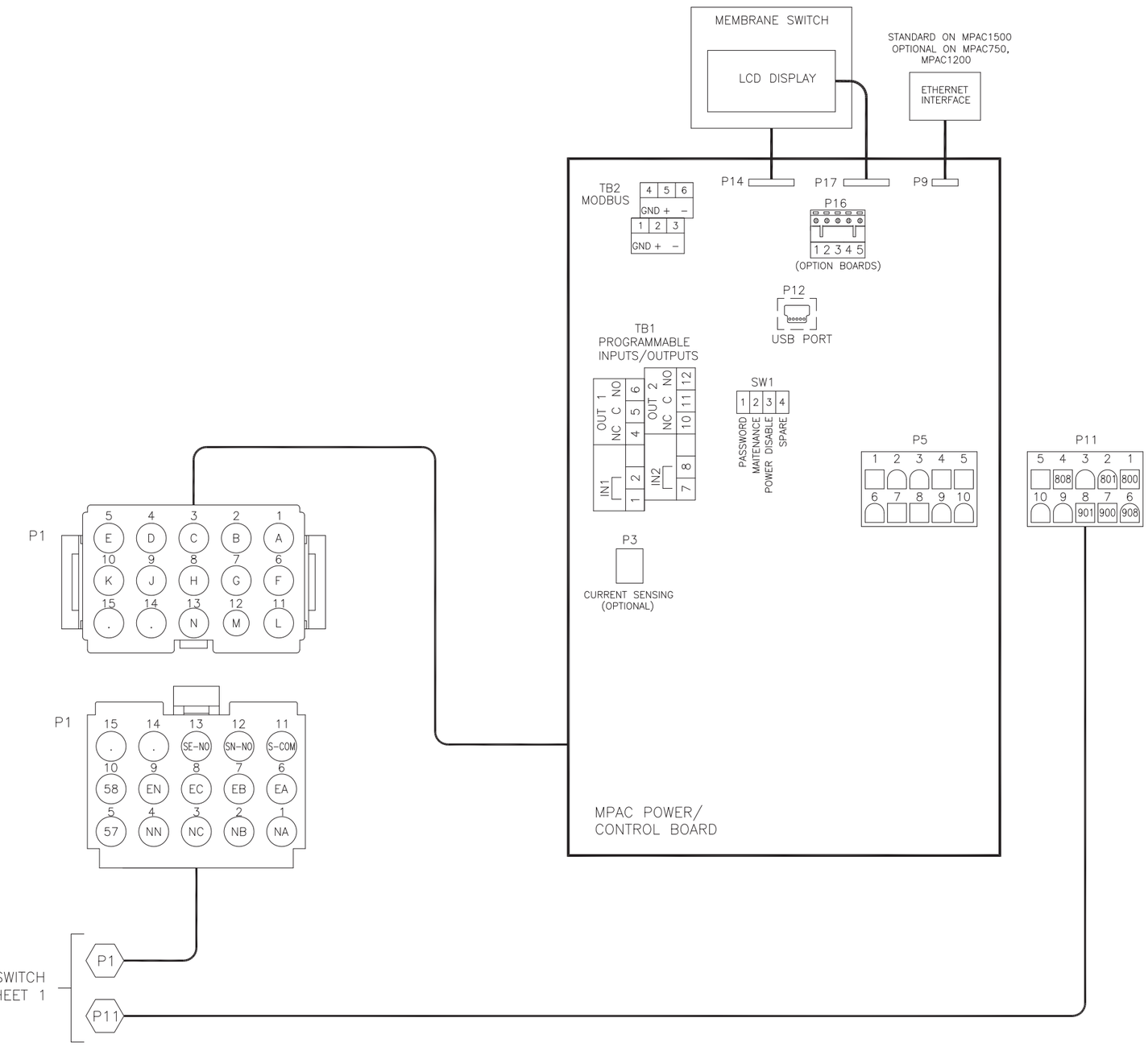
APPROVALS	DATE
DRAWN DFS	12–3–13
CHECKED MTL	12–3–13
APPROVED HCC	12–3–13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 3–4

PLOTTED | DWG. NO. GM89710 | D

REV	DATE	REVISION	BY	M F
--	12-3-13	NEW DRAWING [CT55118]	DFS	
A	8-14-15	(C-5) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



MODEL KGP
1600-3000A
BYPASS MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89709

UNLESS OTHERWISE SPECIFIED --
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	12-3-13
CHECKED MTL	12-3-13
APPROVED HCC	12-3-13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 4-4

PLOTTED | DWG. NO. GM89710 | D

REV	DATE	REVISION	BY	M F
–	11–11–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

MPAC POWER/CONTROL BOARD

P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)

ETHERNET INTERFACE
STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200

MEMBRANE SWITCH
LCD DISPLAY

TB2 (MODBUS)
4 5 6
GND + –
1 2 3
GND + –

P12 USB PORT (ON BACK OF BOARD)

P16 (OPTION BOARDS)
1 2 3 4 5

TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
OUT 1 NC C NO 6 5 4
OUT 2 NC C NO 12 11 10
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAITENANCE
POWER DISABLE
SPARE

P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
CURRENT SENSING

K1
K2

P2 (PROGRAMMED TRANSITION.)

(GEN_START_2) P1–9
(GEN_START_1) P1–8
(GROUND) P1–10
(POSITION_SOURCE2) P1–13
(POSITION_SOURCE1) P1–14
(SOURCE2_C2) P1–16
(SOURCE2_C1) P1–1
(SOURCE1_C1) P1–2
(SOURCE1_C2) P1–5
(SOURCE1_NO2) P1–15
(SOURCE1_NO1) P1–3

* POWER SUPPLY
SOURCE 2 AC VOLTAGE SENSING
*(SOURCE2_A) P1–7
(SOURCE2_B) P1–18
*(SOURCE2_C) P1–6
(SOURCE2_N) P1–23

* POWER SUPPLY
SOURCE 1 AC VOLTAGE SENSING
*(SOURCE1_A) P1–12
(SOURCE1_B) P1–11
*(SOURCE1_C) P1–4
(SOURCE1_N) P1–22

AC1
AC2
BR
CNE

CONTACTOR

TO EMERGENCY SOURCE
EN EC EB EA
TS TS TS
TO LOAD
LN LC LB LA
TS TS TS
NN NC NB NA
TO NORMAL SOURCE

SCE
SCN
C NO

SN NO C
SE NO C
POSITION INDICATION

3 4 TB2
ENGINE START

AUXILLIARY CONTACTS
15A, 250VAC

STANDARD
A4–1 NC C NO
A3–1 NC C NO

OPTIONAL
A4–2 NC C NO
A3–2 NC C NO
A4–3 NC C NO
A3–3 NC C NO
A4–4 NC C NO
A3–4 NC C NO

LEGEND
A3–(#), A4–(#) – AUXILLIARY CONTACTS
BR – BRIDGE RECTIFIER
CNE – TRANSFER COIL (NORMAL/EMERGENCY)
K(#) – RELAY
LCD – LIQUID CRYSTAL DISPLAY
P(#) – PLUG
SCE – COIL CLEARING CONTACT (EMERGENCY)
SCN – COIL CLEARING CONTACT (NORMAL)
SE – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KSS
40–260A
SPECIFIC BREAKER MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89714

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX ± .010 ANGLES ± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 √ MAX. FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–11–13
CHECKED	MTL	11–11–13
APPROVED	HCC	11–11–13

TITLE: DIAGRAM, SCHEMATIC
SCALE / / / | CAD NO. | SHEET 1–1
PLOTTED | DWG. NO. GM89713 | D

ENCLOSURE

RIGHT SIDE WALL

DOOR

REV	DATE	REVISION	BY	M F
–	11–21–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–3) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

OPTIONAL NEUTRAL CONFIGURATIONS
NONE
SWITCHED

TS

AC2
BR
AC1

TS COIL
CNE

SCN
SCE

LA LB LC LN LOAD
NA NB NC NN NORMAL
EA EB EC EN EMERGENCY

SE
SN
10
POSITION INDICATION

A4 A3
AUXILLIARY CONTACTS (STANDARD)
AUXILLIARY CONTACTS (OPTIONAL)

TB2
3 4
ENGINE START
8 9

MEMBRANE SWITCH
LCD DISPLAY
STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
ETHERNET INTERFACE

P14 P17 P9
P16
(OPTION BOARDS)
P12
USB PORT

TB2 MODBUS
4 5 6
GND + –
1 2 3
GND + –

TB1
PROGRAMMABLE INPUTS/OUTPUTS
OUT 1 NO C NC 6 5 4
OUT 2 NO C NC 12 11 10
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAITENANCE
POWER DISABLE
SPARE

P2
PROGRAMMED TRANSITION

P3
CURRENT SENSING (OPTIONAL)

K1
K2

MPAC POWER/
CONTROL BOARD

P1

J1

LEGEND

A3, A4 – AUXILLIARY CONTACTS
BR – BRIDGE RECTIFIER
CNE – TRANSFER COIL (NORMAL/EMERGENCY)
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
SCE – COIL CLEARING CONTACT (EMERGENCY)
SCN – COIL CLEARING CONTACT (NORMAL)
SE – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK

J1 CONNECTIONS (CONTACTOR TO MAIN LOGIC BOARD)

1	1	(SCE–NO)	13	13	(SE–NO)
2	2	(BR–AC1)	14	14	(SN–NO)
3	3	(SCN–NO)	15	15	(TS–NC)
4	4	(TS–NC)	16	16	(TS–EC)
5	5	(BR–AC2)	17	N/C	.
6	6	(TS–EC)	18	18	(TS–EB)
7	7	(TS–EA)	19	N/C	.
8	8	(TB2–3)	20	N/C	.
9	9	(TB2–4)	21	N/C	.
10	10	(SE–C)	22	22	(TS–NN)
11	11	(TS–NB)	23	23	(TS–EN)
12	12	(TS–NA)	24	N/C	.

MODEL KSS
40–260A
SPECIFIC BREAKER MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89713

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX± .010 ANGLES± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–21–13
CHECKED	MTL	11–21–13
APPROVED	HCC	11–21–13

KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 1–1
PLOTTED | DWG. NO. GM89714 | D

REV	DATE	REVISION	BY	M F
–	11–11–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

LEGEND

A3–(#), A4–(#) – AUXILLIARY CONTACTS
CE – CLOSED IN EMERGENCY
CN – CLOSED IN NORMAL
K(#) – RELAY
LCD – LIQUID CRYSTAL DISPLAY
P(#) – PLUG
RE – BRIDGE RECTIFIER (EMERGENCY)
RN – BRIDGE RECTIFIER (NORMAL)
SE – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

MPAC POWER/CONTROL BOARD
P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)
ETHERNET INTERFACE
STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
MEMBRANE SWITCH
LCD DISPLAY
TB2 (MODBUS)
P12 USB PORT (ON BACK OF BOARD)
P16 (OPTION BOARDS)
TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
SW1
PASSWORD
MAITENANCE
POWER DISABLE
SPARE
CONTACTOR
TB2
ENGINE START
(GEN_START_2) P1–9
(GEN_START_1) P1–8
(GROUND) P1–10
(POSITION_SOURCE2) P1–13
(POSITION_SOURCE1) P1–14
(SOURCE1_C2) P1–5
(SOURCE2_C2) P1–16
(SOURCE1_NO2) P1–15
K1
K2
14 13 10
NO NO
SN SE
C C
POSITION INDICATION
TO EMERGENCY SOURCE
16
EN EC EB EA
7
AC1
RE
AC2
306R
307R
CE COIL
5
P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
CURRENT SENSING
* POWER SUPPLY
SOURCE 2 AC VOLTAGE SENSING
*(SOURCE2_A) P1–7
(SOURCE2_B) P1–18
*(SOURC2_C) P1–6
(SOURCE2_N) P1–23
TS TS TS
TO LOAD
LN LC LB LA
TS TS TS
12
AC1
RN
AC2
206B
209B
CN COIL
2
NN NC NB NA
TO NORMAL SOURCE
AUXILLIARY CONTACTS
15A, 250VAC
STANDARD
A4–1 A3–1
OPTIONAL
A4–2 A3–2
A4–3 A3–3
A4–4 A3–4
NC C NO
K1
P2 (PROGRAMMED TRANSITION.)
K2
* POWER SUPPLY
SOURCE 1 SENSING AC VOLTAGE
*(SOURCE1_A) P1–12
(SOURCE1_B) P1–11
*(SOURCE1_C) P1–4
(SOURCE1_N) P1–22
K1 K2 (SOURCE2_C1) P1–1
K1 (SOURCE1_NO1) P1–3
(SOURCE1_C1) P1–2

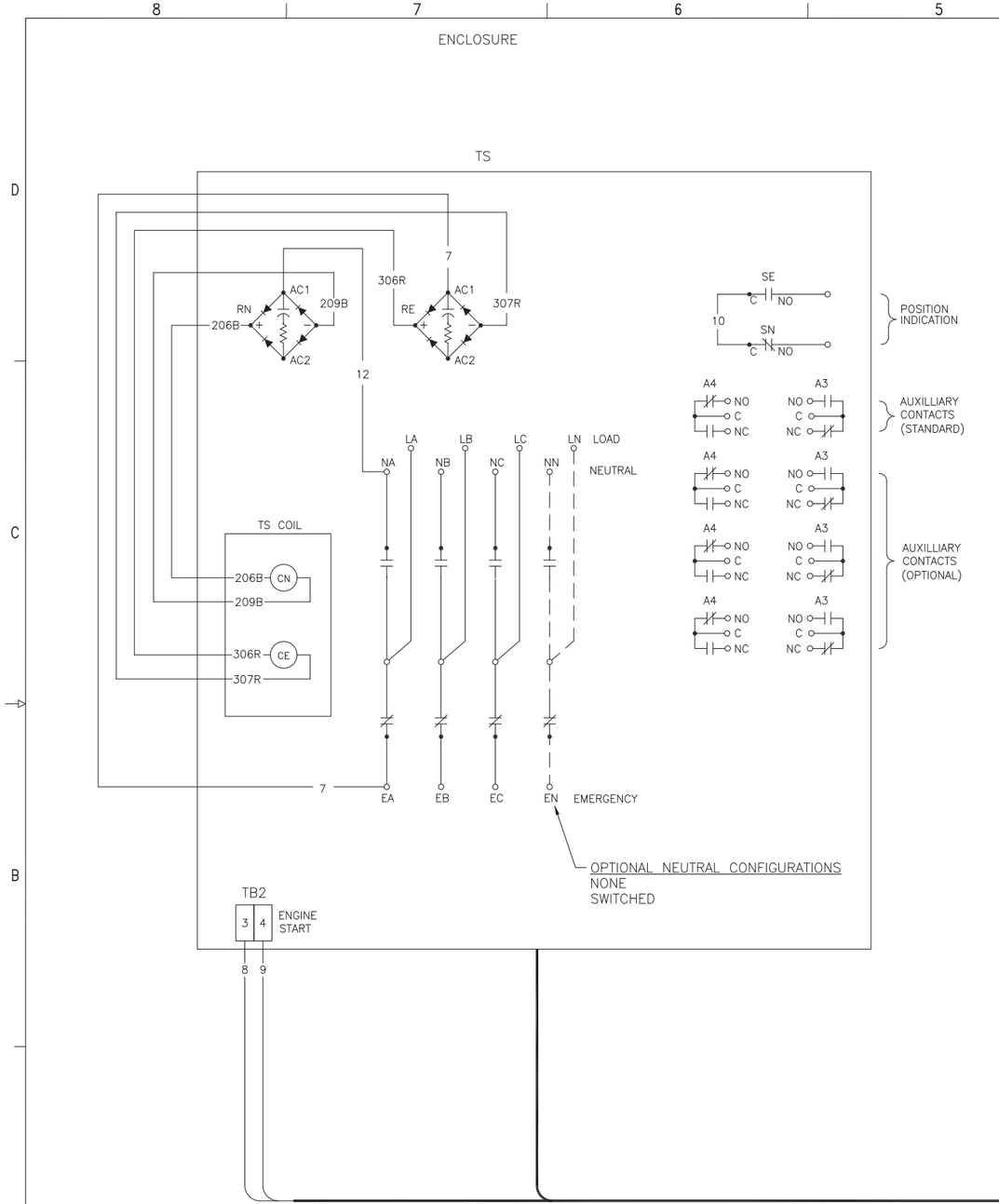
NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

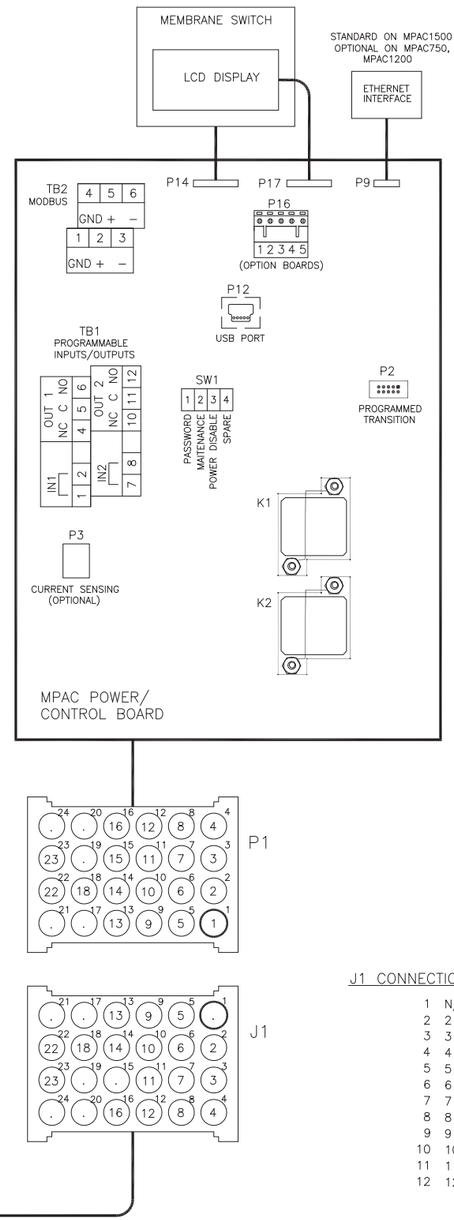
MODEL KSS
400–600A
SPECIFIC BREAKER MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89716

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	11–11–13
CHECKED MTL	11–11–13
APPROVED HCC	11–11–13

TITLE: DIAGRAM, SCHEMATIC
SCALE / / / CAD NO. SHEET 1–1
PLOTTED DWG. NO. GM89715 D





REV	DATE	REVISION	BY	M F
–	11–21–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–3) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

LEGEND

A3, A4 – AUXILLIARY CONTACTS
CE – TRANSFER COIL (CLOSED IN EMERGENCY)
CN – TRANSFER COIL (CLOSED IN NORMAL)
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
RE – BRIDGE RECTIFIER (EMERGENCY)
RN – BRIDGE RECTIFIER (NORMAL)
SE – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

J1 CONNECTIONS (CONTACTOR TO MAIN LOGIC BOARD)

1	N/C	.	13	13	(SE–NO)
2	2	(RN–AC2)	14	14	(SN–NO)
3	3	(TS–NC)	15	N/C	.
4	4	(TS–NC)	16	16	(TS–EC)
5	5	(RE–AC2)	17	N/C	.
6	6	(TS–EC)	18	18	(TS–EB)
7	7	(TS–EA)	19	N/C	.
8	8	(TB2–3)	20	N/C	.
9	9	(TB2–4)	21	N/C	.
10	10	(SE–C)	22	22	(TS–NN)
11	11	(TS–NB)	23	23	(TS–EN)
12	12	(TS–NA)	24	N/C	.

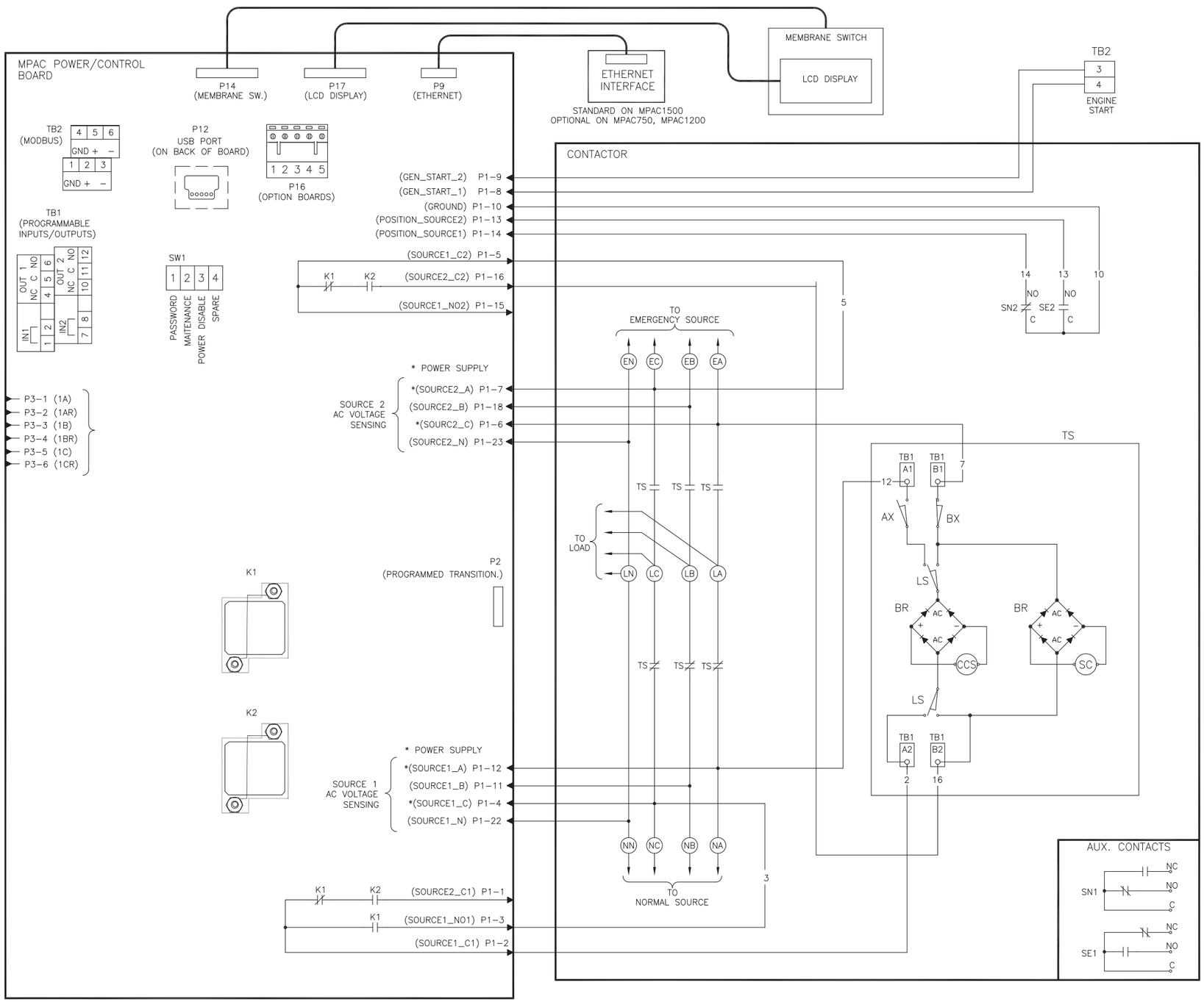
MODEL KSS
400–600A
SPECIFIC BREAKER MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89715

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	11–21–13
CHECKED MTL	11–21–13
APPROVED HCC	11–21–13

TITLE: DIAGRAM, WIRING
SCALE: / / / CAD NO. SHEET 1–1
PLOTTED DWG. NO. GM89716 D

REV	DATE	REVISION	BY	M F
–	11–11–13	NEW DRAWING [CT55122]	DFS	
A	10–31–14	UPDATED BX TO BE NORMALLY CLOSED [CT97908]	JDH	
B	8–14–15	(D–8) TBS MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



LEGEND

AX – COIL CLEARING SWITCH (NORMAL)
BR – BRIDGE RECTIFIER
BX – COIL CLEARING SWITCH (EMERGENCY)
CCS – CLOSING COIL SOLENOID
K(#) – RELAY
LS – LINE SELECT SWITCH
LCD – LIQUID CRYSTAL DISPLAY
P(#) – PLUG
SC – SELECT COIL
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*),–(B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KSS
800–1000A
SPECIFIC BREAKER MECHANISM
STANDARD TRANSITION
FOR WIRING DIAGRAM SEE GM89718

UNLESS OTHERWISE SPECIFIED – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX ± .010 ANGLES ± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 MAX. FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–11–13
CHECKED	MTL	11–11–13
APPROVED	HCC	11–11–13

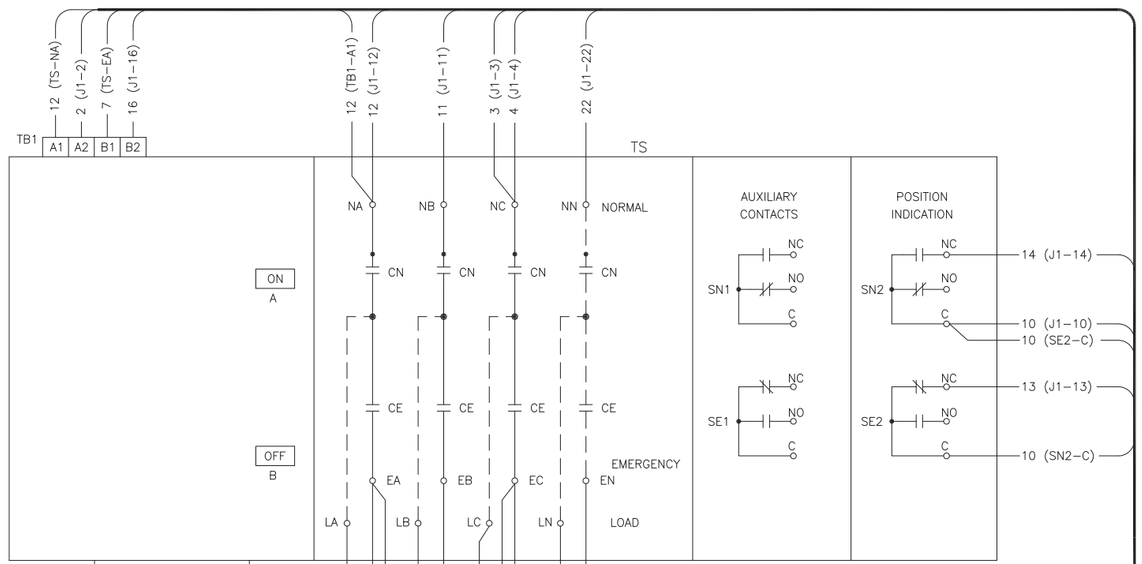
TITLE: DIAGRAM, SCHEMATIC

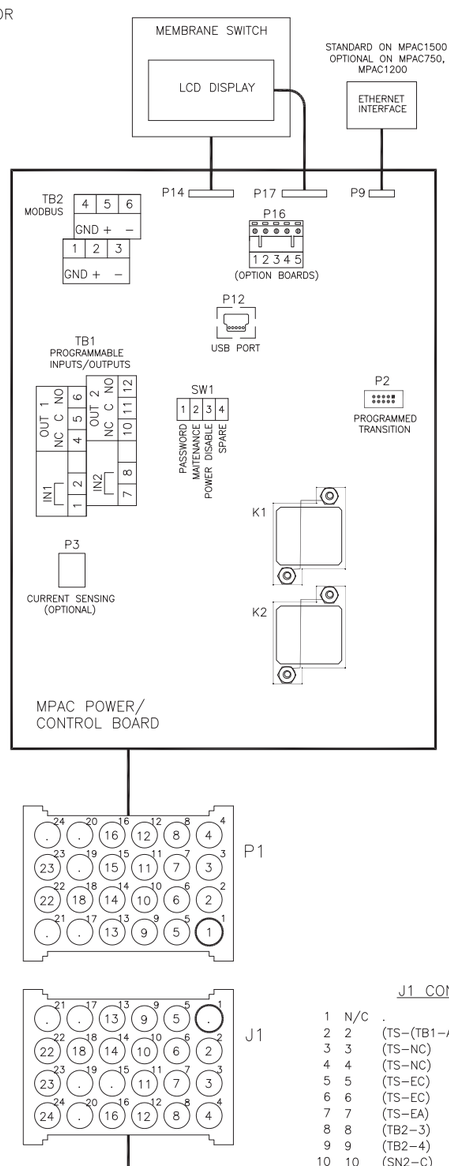
SCALE / / / | CAD NO. | SHEET 1–1
PLOTTED | DWG. NO. GM89717 | D

REV	DATE	REVISION	BY	M F
–	11–21–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–3) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

ENCLOSURE

DOOR





LEGEND

CE – CLOSED IN EMERGENCY POSITION CONTACTS
CN – CLOSED IN NORMAL POSITION CONTACTS
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

J1 CONNECTIONS

1	N/C	.	13	13	(SE2–NC)
2	2	(TS–(TB1–A2))	14	14	(SN2–NC)
3	3	(TS–NC)	15	N/C	.
4	4	(TS–NC)	16	16	(TS–(TB1–B2))
5	5	(TS–EC)	17	N/C	.
6	6	(TS–EC)	18	18	(TS–EB)
7	7	(TS–EA)	19	N/C	.
8	8	(TB2–3)	20	N/C	.
9	9	(TB2–4)	21	N/C	.
10	10	(SN2–C)	22	22	(TS–NN)
11	11	(TS–NB)	23	23	(TS–EN)
12	12	(TS–NA)	24	N/C	.

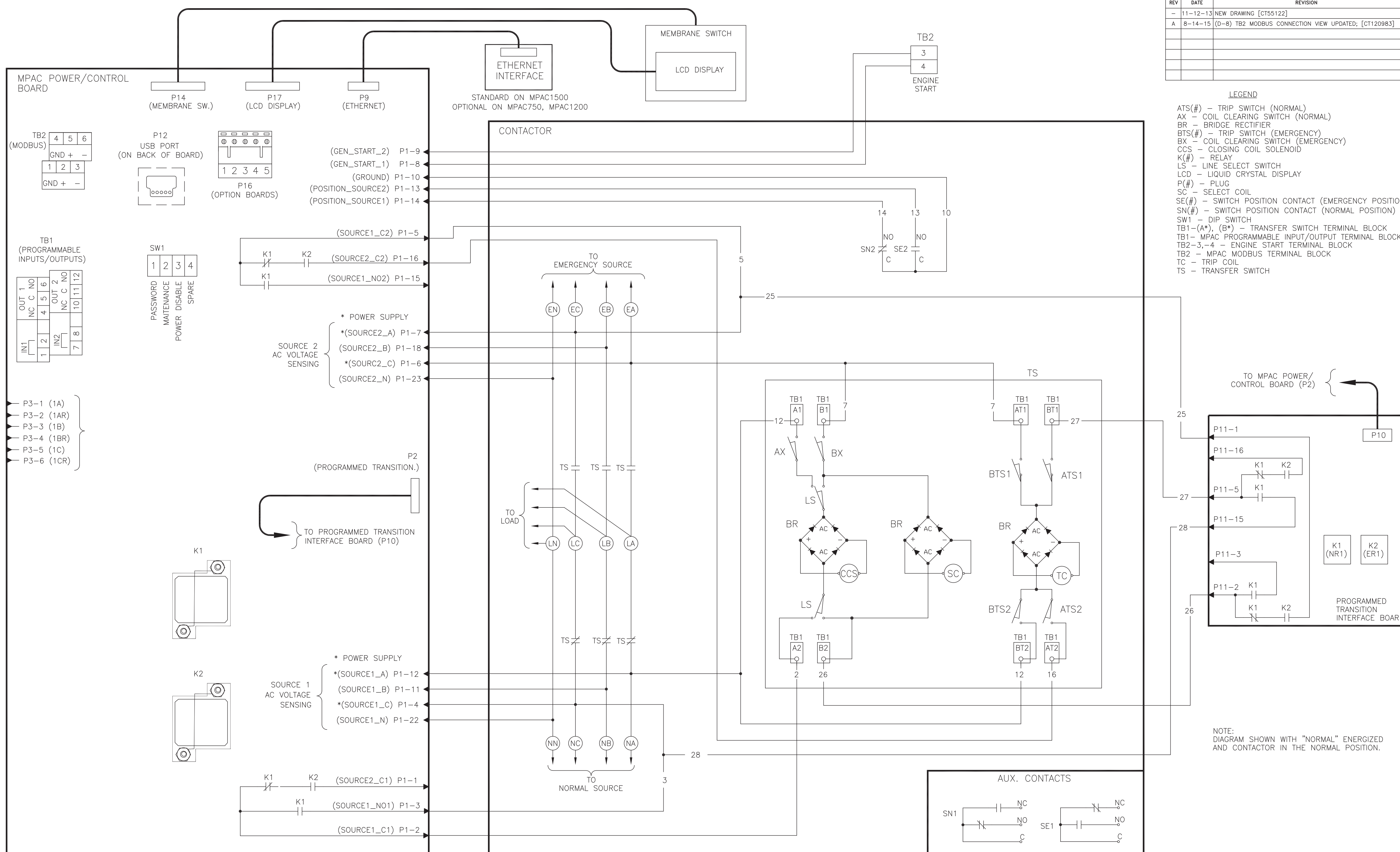
MODEL KSS
800–1000A
SPECIFIC BREAKER MECHANISM
STANDARD TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89717

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–21–13
CHECKED	MTL	11–21–13
APPROVED	HCC	11–21–13

TITLE: DIAGRAM, WIRING
SCALE: / / /
CAD NO.
SHEET 1–1
PLOTTED
DWG. NO. GM89718 D

REV	DATE	REVISION	BY	MF
–	11–12–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	



MPAC POWER/CONTROL BOARD
P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)
ETHERNET INTERFACE
STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
MEMBRANE SWITCH
LCD DISPLAY
TB2
ENGINE START
TB2 (MODBUS)
GND + –
P12 USB PORT (ON BACK OF BOARD)
P16 (OPTION BOARDS)
(GEN_START_2) P1–9
(GEN_START_1) P1–8
(GROUND) P1–10
(POSITION_SOURCE2) P1–13
(POSITION_SOURCE1) P1–14
(SOURCE1_C2) P1–5
(SOURCE2_C2) P1–16
(SOURCE1_NO2) P1–15
TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
OUT 1
OUT 2
IN1
IN2
SW1
PASSWORD
MAITENANCE
POWER DISABLE
SPARE
* POWER SUPPLY
SOURCE 2 AC VOLTAGE SENSING
*(SOURCE2_A) P1–7
(SOURCE2_B) P1–18
*(SOURC2_C) P1–6
(SOURCE2_N) P1–23
P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
P2 (PROGRAMMED TRANSITION.)
TO PROGRAMMED TRANSITION INTERFACE BOARD (P10)
K1
K2
SOURCE 1 AC VOLTAGE SENSING
*(SOURCE1_A) P1–12
(SOURCE1_B) P1–11
*(SOURCE1_C) P1–4
(SOURCE1_N) P1–22
(SOURCE2_C1) P1–1
(SOURCE1_NO1) P1–3
(SOURCE1_C1) P1–2
CONTACTOR
TO EMERGENCY SOURCE
EN EC EB EA
TO LOAD
LN LC LB LA
NN NC NB NA
TO NORMAL SOURCE
SN2
SE2
TS
AX BX LS BR CCS SC TC
BTS1 ATS1 BTS2 ATS2
TB1 A1 B1 AT1 BT1 A2 B2 BT2 AT2
AUX. CONTACTS
SN1
SE1
NC NO C
TO MPAC POWER/ CONTROL BOARD (P2)
P10
P11–1
P11–16
P11–5
P11–15
P11–3
P11–2
K1 (NR1)
K2 (ER1)
PROGRAMMED TRANSITION INTERFACE BOARD

LEGEND

ATS(#) – TRIP SWITCH (NORMAL)
AX – COIL CLEARING SWITCH (NORMAL)
BR – BRIDGE RECTIFIER
BTS(#) – TRIP SWITCH (EMERGENCY)
BX – COIL CLEARING SWITCH (EMERGENCY)
CCS – CLOSING COIL SOLENOID
K(#) – RELAY
LS – LINE SELECT SWITCH
LCD – LIQUID CRYSTAL DISPLAY
P(#) – PLUG
SC – SELECT COIL
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1– MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TC – TRIP COIL
TS – TRANSFER SWITCH

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KSP
100–600A
SPECIFIC BREAKER MECHANISM
PROGRAMMED TRANSITION
FOR 100–400A WIRING DIAGRAM SEE GM89720
FOR 600A WIRING DIAGRAM SEE GM89723

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–12–13
CHECKED	MTL	11–12–13
APPROVED	HCC	11–12–13

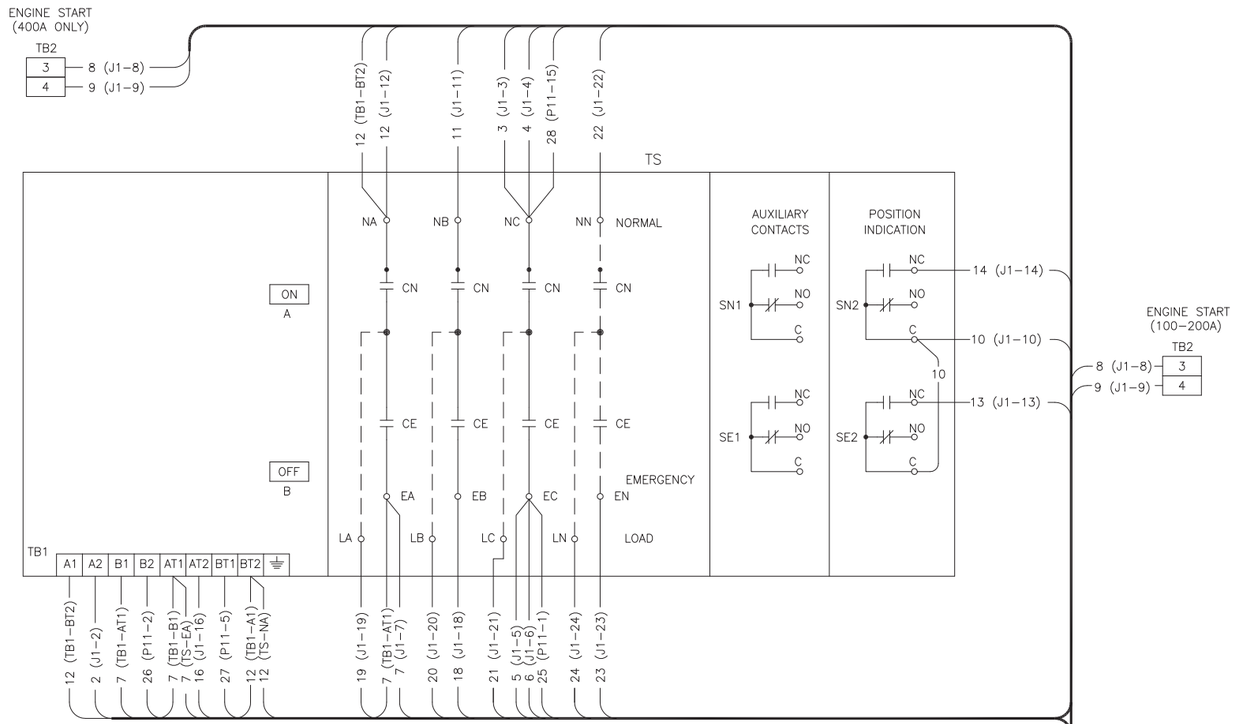
KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

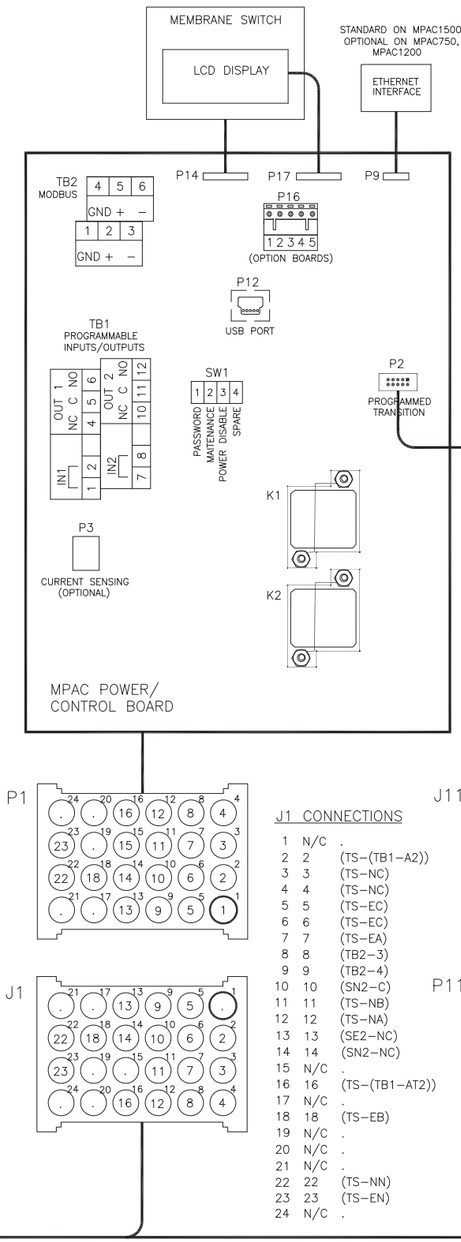
TITLE DIAGRAM, SCHEMATIC
SCALE / / / CAD NO. SHEET 1–1
PLOTTED DWG. NO. GM89719 D

REV	DATE	REVISION	BY	M F
–	11–21–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–3) TB2 MODBUS CONNECTOR VIEW UPDATED; [CT120983]	BTW	

ENCLOSURE

DOOR

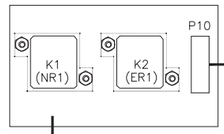




LEGEND

CE – CLOSED IN EMERGENCY POSITION CONTACTS
CN – CLOSED IN NORMAL POSITION CONTACTS
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

PROGRAMMED TRANSITION
INTERFACE BOARD



J1 CONNECTIONS

1	N/C	.
2	2	(TS–(TB1–A2))
3	3	(TS–NC)
4	4	(TS–NC)
5	5	(TS–EC)
6	6	(TS–EC)
7	7	(TS–EA)
8	8	(TB2–3)
9	9	(TB2–4)
10	10	(SN2–C)
11	11	(TS–NB)
12	12	(TS–NA)
13	13	(SE2–NC)
14	14	(SN2–NC)
15	N/C	.
16	16	(TS–(TB1–AT2))
17	N/C	.
18	18	(TS–EB)
19	N/C	.
20	N/C	.
21	N/C	.
22	22	(TS–NN)
23	23	(TS–EN)
24	N/C	.

P11 CONNECTIONS

1	25	(TS–EC)
2	26	(TS–(TB1–B2))
3	N/C	.
4	N/C	.
5	27	(TS–(TB1–BT1))
6	N/C	.
7	N/C	.
8	N/C	.
9	N/C	.
10	N/C	.
11	N/C	.
12	N/C	.
13	N/C	.
14	N/C	.
15	28	(TS–NC)
16	N/C	.
17	N/C	.
18	N/C	.
19	N/C	.
20	N/C	.
21	N/C	.
22	N/C	.
23	N/C	.
24	N/C	.

MODEL KSP
100–400A
SPECIFIC BREAKER MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89719

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–21–13
CHECKED	MTL	11–21–13
APPROVED	HCC	11–21–13

KOHLER CO.
POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

TITLE: DIAGRAM, WIRING

SCALE: / / / | CAD NO. | SHEET 1–1

PLOTTED | DWG. NO. GM89720 | D

REV	DATE	REVISION	BY	M F
–	11–22–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–3) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

ENCLOSURE

ENGINE START
(400A ONLY)

TB2
3 — 8 (J1–8)
4 — 9 (J1–9)

12 (TN–H2) | 11 (J1–11) | 4 (TN–H1) | 22 (J1–22)

TS

NA NB NC NN NORMAL

CN CN CN CN

CE CE CE CE

EA EB EC EN EMERGENCY

LA LB LC LN LOAD

ON
A

OFF
B

AUXILIARY CONTACTS

SN1: NC, NO, C

SE1: NC, NO, C

POSITION INDICATION

SN2: NC, NO, C — 14 (J1–14), 10 (J1–10)

10

SE2: NC, NO, C — 13 (J1–13)

TB2
8 (J1–8)
9 (J1–9)

TB1
A1 A2 B1 B2 AT1 AT2 BT1 BT2 ⏚

32 (TN–X1)
32 (TB1–B2)
2 (J1–2)
37 (TE–X1)
37 (TB1–AT1)
26 (P11–2)
37 (TB1–B1)
16 (J1–16)
27 (P11–5)
32 (TB1–A1)

19 (J1–19)
7 (TE–H2)
20 (J1–20)
18 (J1–18)
21 (J1–21)
6 (TE–H1)
24 (J1–24)
23 (J1–23)

LEFT SIDE WALL

TN: H2, H1, X1, X2
12 (J1–12)
12 (TS–NA)
4 (J1–4)
4 (TS–NC)
32 (TB1–A1)
3 (J1–3)
28 (P11–15)

TE: H2, H1, X1, X2
7 (J1–7)
7 (TS–EA)
6 (J1–6)
6 (TS–EC)
37 (TB1–B1)
25 (P11–1)
5 (J1–5)

P11

21	.	.	.	.	27	25
	.	.	.	.	.	26
	.	.	28	.	.	.
24	.	.	.	.	.	4

1

DOOR

MEMBRANE SWITCH
LCD DISPLAY

STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
ETHERNET INTERFACE

P14 P17 P9

TB2 MODBUS
4 5 6
GND + –
1 2 3
GND + –

P16
1 2 3 4 5
(OPTION BOARDS)

P12
USB PORT

TB1
PROGRAMMABLE INPUTS/OUTPUTS
OUT 1 NC C NO 6 5 4
OUT 2 NC C NO 12 11 10
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAITENANCE
POWER DISABLE
SPARE

P2
PROGRAMMED TRANSITION

P3
CURRENT SENSING
(OPTIONAL)

K1
K2

MPAC POWER/
CONTROL BOARD

PROGRAMMED TRANSITION
INTERFACE BOARD

K1 (NR1)
K2 (ER1)
P10

P1

J1 CONNECTIONS

1	N/C	.
2	2	(TS–(TB1–A2))
3	3	(TN–X2)
4	4	(TN–H1)
5	5	(TE–X2)
6	6	(TE–H1)
7	7	(TE–H2)
8	8	(TB2–3)
9	9	(TB2–4)
10	10	(SN2–C)
11	11	(TS–NB)
12	12	(TN–H2)
13	13	(SE2–NC)
14	14	(SN2–NC)
15	N/C	.
16	16	(TS–(TB1–AT2))
17	N/C	.
18	18	(TS–EB)
19	19	(TS–LA)
20	20	(TS–LB)
21	21	(TS–LC)
22	22	(TS–NN)
23	23	(TS–EN)
24	24	(TS–LN)

J11

P11

P11 CONNECTIONS

1	25	(TE–X2)
2	26	(TS–(TB1–B2))
3	N/C	.
4	N/C	.
5	27	(TS–(TB1–BT1))
6	N/C	.
7	N/C	.
8	N/C	.
9	N/C	.
10	N/C	.
11	N/C	.
12	N/C	.
13	N/C	.
14	N/C	.
15	28	(TN–X2)
16	N/C	.
17	N/C	.
18	N/C	.
19	N/C	.
20	N/C	.
21	N/C	.
22	N/C	.
23	N/C	.
24	N/C	.

LEGEND

CE – CLOSED IN EMERGENCY POSITION CONTACTS
CN – CLOSED IN NORMAL POSITION CONTACTS
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TE – TRANSFORMER (EMERGENCY)
TN – TRANSFORMER (NORMAL)
TS – TRANSFER SWITCH

MODEL KSP
100–400A
SPECIFIC BREAKER MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89722

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–22–13
CHECKED	MTL	11–22–13
APPROVED	HCC	11–22–13

TITLE: DIAGRAM, WIRING

SCALE / / / | CAD NO. | SHEET 1–1

PLOTTED | DWG. NO. GM89721 | D

REV	DATE	REVISION	BY	M F
–	11–12–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–8) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

LEGEND

ATS(#) – TRIP SWITCH (NORMAL)
AX – COIL CLEARING SWITCH (NORMAL)
BR – BRIDGE RECTIFIER
BTS(#) – TRIP SWITCH (EMERGENCY)
BX – COIL CLEARING SWITCH (EMERGENCY)
CCS – CLOSING COIL SOLENOID
K(#) – RELAY
LS – LINE SELECT SWITCH
LCD – LIQUID CRYSTAL DISPLAY
P(#) – PLUG
SC – SELECT COIL
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1– MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TC – TRIP COIL
TS – TRANSFER SWITCH

MPAC POWER/CONTROL BOARD
P14 (MEMBRANE SW.)
P17 (LCD DISPLAY)
P9 (ETHERNET)
ETHERNET INTERFACE
STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
MEMBRANE SWITCH
LCD DISPLAY
TB2 (MODBUS)
P12 USB PORT (ON BACK OF BOARD)
P16 (OPTION BOARDS)
TB1 (PROGRAMMABLE INPUTS/OUTPUTS)
SW1
PASSWORD
MAITENANCE
POWER DISABLE
SPARE
CONTACTOR
TB2
ENGINE START
(GEN_START_2) P1–9
(GEN_START_1) P1–8
(GROUND) P1–10
(POSITION_SOURCE2) P1–13
(POSITION_SOURCE1) P1–14
(SOURCE1_C2) P1–5
(SOURCE2_C2) P1–16
(SOURCE1_NO2) P1–15
K1 K2
14 13 10
NO NO
SN2 SE2
C C
TO EMERGENCY SOURCE
EN EC EB EA
* POWER SUPPLY
*(SOURCE2_A) P1–7
(SOURCE2_B) P1–18
*(SOURC2_C) P1–6
(SOURCE2_N) P1–23
SOURCE 2 AC VOLTAGE SENSING
TE
H1 X2
H2 X1
5
25
TS
TS TS TS
TO LOAD
LN LC LB LA
TB1 A1 TB1 B1
37
32
AX
BX
LS
BR
AC AC
CCS
SC
TB1 AT1 TB1 BT1
37 27
BTS1 ATS1
BR
TC
BTS2 ATS2
TB1 A2 TB1 B2
2 26
TB1 BT2 TB1 AT2
32 16
TS TS TS
NN NC NB NA
TO NORMAL SOURCE
TN
H2 X1
H1 X2
3
28
P3–1 (1A)
P3–2 (1AR)
P3–3 (1B)
P3–4 (1BR)
P3–5 (1C)
P3–6 (1CR)
CURRENT SENSING
P2 (PROGRAMMED TRANSITION.)
TO PROGRAMMED TRANSITION INTERFACE BOARD (P10)
K1
K2
* POWER SUPPLY
*(SOURCE1_A) P1–12
(SOURCE1_B) P1–11
*(SOURCE1_C) P1–4
(SOURCE1_N) P1–22
SOURCE 1 AC VOLTAGE SENSING
K1 K2
(SOURCE2_C1) P1–1
K1
(SOURCE1_NO1) P1–3
(SOURCE1_C1) P1–2
AUX. CONTACTS
SE1 NC NO C
SN1 NC NO C
TO MPAC POWER/ CONTROL BOARD (P2)
25
P11–16
P11–1
P10
K1 K2
P11–5
K1
P11–15
27
28
P11–3
P11–2 K1
K1 K2
26
K1 (NR1)
K2 (ER1)
PROGRAMMED TRANSITION INTERFACE BOARD

NOTE:
DIAGRAM SHOWN WITH "NORMAL" ENERGIZED AND CONTACTOR IN THE NORMAL POSITION.

MODEL KSP
100–600A
SPECIFIC BREAKER MECHANISM
PROGRAMMED TRANSITION
FOR 100–400A WIRING DIAGRAM SEE GM89721
FOR 600A WIRING DIAGRAM SEE GM89724

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	11–12–13
CHECKED MTL	11–12–13
APPROVED HCC	11–12–13

TITLE: DIAGRAM, SCHEMATIC
SCALE / / / CAD NO. SHEET 1–1
PLOTTED DWG. NO. GM89722 D

REV	DATE	REVISION	BY	M F
–	11–23–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–4) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

ENCLOSURE

DOOR

TB2
ENGINE START
3 4
8 (J1–8)
9 (J1–9)

TB1
A1 A2 B1 B2 AT1 AT2 BT1 BT2

12 (TB1–BT2)
2 (J1–2)
7 (TB1–AT1)
26 (P11–2)
7 (TB1–B1)
7 (TS–EA)
16 (J1–16)
27 (P11–5)
12 (TS–NA)
12 (TB1–A1)

12 (TB1–BT2)
12 (J1–12)
11 (J1–11)
3 (J1–3)
4 (J1–4)
28 (P11–15)
22 (J1–22)

TS
NA NB NC NN NORMAL
CN CN CN CN
CE CE CE CE
EA EB EC EN EMERGENCY
LA LB LC LN LOAD

ON
A
OFF
B

AUXILIARY CONTACTS
SN1 NC NO C
SE1 NC NO C

POSITION INDICATION
SN2 NC NO C
14 (J1–14)
10 (J1–10)
10
SE2 NC NO C
13 (J1–13)

19 (J1–19)
7 (TB1–AT1)
7 (J1–7)
20 (J1–20)
18 (J1–18)
21 (J1–21)
5 (J1–5)
6 (J1–6)
25 (P11–1)
24 (J1–24)
23 (J1–23)

MEMBRANE SWITCH
LCD DISPLAY
STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
ETHERNET INTERFACE

P14 P17 P9
P16 (OPTION BOARDS) 1 2 3 4 5
P12 USB PORT

TB2 MODBUS
4 5 6
GND + –
1 2 3
GND + –

TB1 PROGRAMMABLE INPUTS/OUTPUTS
OUT 1 NC C NO 6 4 5
OUT 2 NC C NO 12 11 10
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAITENANCE
POWER DISABLE
SPARE

P2 PROGRAMMED TRANSITION

K1
K2

P3
CURRENT SENSING (OPTIONAL)

MPAC POWER/
CONTROL BOARD

PROGRAMMED TRANSITION INTERFACE BOARD
P10
K1 (NR1)
K2 (ER1)

P1
J1
J11

LEGEND

CE – CLOSED IN EMERGENCY POSITION CONTACTS
CN – CLOSED IN NORMAL POSITION CONTACTS
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TS – TRANSFER SWITCH

J1 CONNECTIONS

1	N/C	.
2	2	(TS–(TB1–A2))
3	3	(TS–NC)
4	4	(TS–NC)
5	5	(TS–EC)
6	6	(TS–EC)
7	7	(TS–EA)
8	8	(TB2–3)
9	9	(TB2–4)
10	10	(SN2–C)
11	11	(TS–NB)
12	12	(TS–NA)
13	13	(SE2–NC)
14	14	(SN2–NC)
15	N/C	.
16	16	(TS–(TB1–AT2))
17	N/C	.
18	18	(TS–EB)
19	N/C	.
20	N/C	.
21	N/C	.
22	22	(TS–NN)
23	23	(TS–EN)
24	N/C	.

P11 CONNECTIONS

1	25	(TS–EC)
2	26	(TS–(TB1–B2))
3	N/C	.
4	N/C	.
5	27	(TS–(TB1–BT1))
6	N/C	.
7	N/C	.
8	N/C	.
9	N/C	.
10	N/C	.
11	N/C	.
12	N/C	.
13	N/C	.
14	N/C	.
15	28	(TS–NC)
16	N/C	.
17	N/C	.
18	N/C	.
19	N/C	.
20	N/C	.
21	N/C	.
22	N/C	.
23	N/C	.
24	N/C	.

MODEL KSP
600A
SPECIFIC BREAKER MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89719

UNLESS OTHERWISE SPECIFIED: – 1) DIMENSIONS ARE IN INCHES 2) TOLERANCES ARE: .XXX ± .010 ANGLES ± 1/2° .XX ± .030 SURFACE FINISH .X ± .060 MAX. FRACTIONS ±

APPROVALS	DATE
DRAWN DFS	11–22–13
CHECKED MTL	11–22–13
APPROVED HCC	11–22–13

TITLE: DIAGRAM, WIRING
SCALE: / / / CAD NO. SHEET 1–1
PLOTTED DWG. NO. GM89723 D

REV	DATE	REVISION	BY	M F
–	11–22–13	NEW DRAWING [CT55122]	DFS	
A	8–14–15	(D–4) TB2 MODBUS CONNECTION VIEW UPDATED; [CT120983]	BTW	

ENCLOSURE

ENGINE START
TB2
3 4
8 (J1–8)
9 (J1–9)

32 (TB1–BT2)
2 (J1–2)
37 (TB1–AT1)
26 (P11–2)
37 (TB1–B1)
37 (TE–X1)
16 (J1–16)
27 (P11–5)
32 (TB1–A1)
32 (TN–X1)

TB1
A1 A2 B1 B2 AT1 AT2 BT1 BT2

12 (TN–H2)
11 (J1–11)
4 (TN–H1)
22 (J1–22)

TS

ON
A

OFF
B

NA NB NC NN NORMAL
CN CN CN CN
CE CE CE CE
EA EB EC EN EMERGENCY
LA LB LC LN LOAD

19 (J1–19)
7 (TE–H2)
20 (J1–20)
18 (J1–18)
21 (J1–21)
6 (TE–H1)
24 (J1–24)
23 (J1–23)

AUXILIARY CONTACTS
SN1 NC NO C
SE1 NC NO C

POSITION INDICATION
SN2 NC NO C
14 (J1–14)
10 (J1–10)
10
SE2 NC NO C
13 (J1–13)

RIGHT SIDE WALL

TN
3 (J1–3)
28 (P11–15)
32 (TB1–BT2)
X2 X1 H1 H2
4 (TS–NC)
4 (J1–4)
12 (TS–NA)
12 (J1–12)

TE
25 (P11–1)
5 (J1–5)
37 (TB1–AT1)
X2 X1 H1 H2
6 (J1–6)
6 (TS–EC)
7 (J1–7)
7 (TS–EA)

DOOR

MEMBRANE SWITCH
LCD DISPLAY

STANDARD ON MPAC1500
OPTIONAL ON MPAC750, MPAC1200
ETHERNET INTERFACE

TB2 MODBUS
4 5 6
GND + –
1 2 3
GND + –

P14 P17 P9
P16
1 2 3 4 5
(OPTION BOARDS)

P12
USB PORT

TB1
PROGRAMMABLE INPUTS/OUTPUTS
OUT 1 NC C NO 4 5 6
OUT 2 NC C NO 10 11 12
IN1 1 2
IN2 7 8

SW1
1 2 3 4
PASSWORD
MAINTENANCE
POWER DISABLE
SPARE

P2
PROGRAMMED TRANSITION

K1
K2

P3
CURRENT SENSING (OPTIONAL)

MPAC POWER/ CONTROL BOARD

PROGRAMMED TRANSITION INTERFACE BOARD
P10
K1 (NR1)
K2 (ER1)

LEGEND

CE – CLOSED IN EMERGENCY POSITION CONTACTS
CN – CLOSED IN NORMAL POSITION CONTACTS
J(#) – CONNECTOR (JACK)
K(#) – RELAY
P(#) – CONNECTOR (PLUG)
SE(#) – SWITCH POSITION CONTACT (EMERGENCY POSITION)
SN(#) – SWITCH POSITION CONTACT (NORMAL POSITION)
SW1 – DIP SWITCH
TB1–(A*), (B*) – TRANSFER SWITCH TERMINAL BLOCK
TB1 – MPAC PROGRAMMABLE INPUT/OUTPUT TERMINAL BLOCK
TB2–3,–4 – ENGINE START TERMINAL BLOCK
TB2 – MPAC MODBUS TERMINAL BLOCK
TE – TRANSFORMER (EMERGENCY)
TN – TRANSFORMER (NORMAL)
TS – TRANSFER SWITCH

P1
J1
J11
P11

J1 CONNECTIONS

1	N/C	.
2	2	(TS–(TB1–A2))
3	3	(TN–X2)
4	4	(TN–H1)
5	5	(TE–X2)
6	6	(TE–H1)
7	7	(TE–H2)
8	8	(TB2–3)
9	9	(TB2–4)
10	10	(SN2–C)
11	11	(TS–NB)
12	12	(TN–H2)
13	13	(SE2–NC)
14	14	(SN2–NC)
15	N/C	.
16	16	(TS–(TB1–AT2))
17	N/C	.
18	18	(TS–EB)
19	19	(TS–LA)
20	20	(TS–LB)
21	21	(TS–LC)
22	22	(TS–NN)
23	23	(TS–EN)
24	24	(TS–LN)

P11 CONNECTIONS

1	25	(TE–X2)
2	26	(TS–(TB1–B2))
3	N/C	.
4	N/C	.
5	27	(TS–(TB1–BT1))
6	N/C	.
7	N/C	.
8	N/C	.
9	N/C	.
10	N/C	.
11	N/C	.
12	N/C	.
13	N/C	.
14	N/C	.
15	28	(TN–X2)
16	N/C	.
17	N/C	.
18	N/C	.
19	N/C	.
20	N/C	.
21	N/C	.
22	N/C	.
23	N/C	.
24	N/C	.

MODEL KSP
600A
SPECIFIC BREAKER MECHANISM
PROGRAMMED TRANSITION
FOR SCHEMATIC DIAGRAM SEE GM89722

UNLESS OTHERWISE SPECIFIED –
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES ARE:
.XXX ± .010 ANGLES ± 1/2°
.XX ± .030 SURFACE FINISH
.X ± .060 √ MAX.
FRACTIONS ±

APPROVALS		DATE
DRAWN	DFS	11–22–13
CHECKED	MTL	11–22–13
APPROVED	HCC	11–22–13

TITLE: DIAGRAM, WIRING
SCALE: / / / CAD NO. SHEET 1–1
PLOTTED DWG. NO. GM89724 D

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