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Drawing 1636044023.dwg  
Rev 2.3

Sheet	Description
1	Index
2	Power supply, open/close GB/MB, engine
3	Inputs, outputs
4	Customer terminals
5	Power circuit
6	Sockets and powerlocks options
7	Sockets and powerlocks options

Size	Cross section	Wire Type
aa	0,5 mm <sup>2</sup>	H05 V-K
a	1 mm <sup>2</sup>	H05 V-K
b	1,5 mm <sup>2</sup>	H07 V-K
c	2,5 mm <sup>2</sup>	H07 V-K
d	4 mm <sup>2</sup>	H07 V-K
e	6 mm <sup>2</sup>	H07 V-K
f	10 mm <sup>2</sup>	H07 V-K
g	16 mm <sup>2</sup>	H07 V-K
h	25 mm <sup>2</sup>	H07 V-K
i	35 mm <sup>2</sup>	H07 V-K
j	50 mm <sup>2</sup>	H07 V-K
k	70 mm <sup>2</sup>	H07 V-K
l	95 mm <sup>2</sup>	H07 V-K
ax	0,5 mm <sup>2</sup>	BELDEN 9271
bx	Ethernet	S/FTP CAT7
fx	10 mm <sup>2</sup>	EPR-CSP (BS6195)
gx	16 mm <sup>2</sup>	EPR-CSP (BS6195)
hx	25 mm <sup>2</sup>	EPR-CSP (BS6195)
ix	35 mm <sup>2</sup>	EPR-CSP (BS6195)
jx	50 mm <sup>2</sup>	EPR-CSP (BS6195)
kx	70 mm <sup>2</sup>	EPR-CSP (BS6195)
lx	95 mm <sup>2</sup>	EPR-CSP (BS6195)
mx	120 mm <sup>2</sup>	EPR-CSP (BS6195)
nx	150 mm <sup>2</sup>	EPR-CSP (BS6195)
ox	185 mm <sup>2</sup>	EPR-CSP (BS6195)

Size	Cross-se
0	Black
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Purple
8	Grey
9	White

Option	Description
O2	Dual frequency
O4	Earth leakage relay
O5	Earth leakage relay type B
O7	Battery charger
O8	Coolant heater
O9	Inlet shutdown valve
O11	Powerlocks
O12	Sockets
O13	Fleetlink
O14	Transformer maintenance
O15	Automatic DEF Transfer
O16	AFT

QAS	Q1 (In)	Ir	tr	I <sub>sd</sub>	I <sub>sd</sub>	N	T1-T2-T3	Wire size X	Wire size Z
660	1000A	0,95xIn=950A	12s	4 x Ir	100ms	4P4D	1600/5A	2 x nx	nx

Tag	Description	Location *
-A1	AGC150	02.04_A
-A2	CI0116	03.A5
-A3	IOM 230	04.A6
-A4	FX-30	04.A8
-B2	Fuel level sensor	02.F2
-D25	Diode	02.D8
-F1	Fuse - 2A	05.B8
-F2	Fuse - 2A	05.B8
-F3	Fuse - 2A	05.B8
-F4	Fuse - 2A	04.C3
-F5	Fuse - 2A	04.C3
-F6	Fuse - 2A	04.C3
-F7	Fuse - 6A	02.D8
-F10	Circuit breaker - 10A	02.D1
-F17	FLEETLINK	03.E8
-F20	Fuse - 2A	04.C2
-F21	Fuse - 10A	04.D1
-F27	Fuse (O13)	03.E7
-F31	Fuse - 20A (O16)	03.C5
-F32	Fuse - 2A (O11)	06.B6
-F33	Fuse - 2A (O11)	06.B6
-F34	Fuse - 2A (O11)	06.B6
-F35	Fuse - 2A (O11)	06.B6
-F36	Fuse - 2A (O11)	06.B6
-F37	Fuse - 2A (O11)	06.B6
-G3	Alternator	05.A6
-HL1	Battery disconnection lamp	02.F3
-HL2	ISV activated lamp	02.D9
-H22	ADT lamp (O15)	03.F1
-KA1	ADT Contactor (O15)	03.D2
-K6	Relay 24V 2CO - Fuel relay	02.D2
-K7	Relay 24V 1CO - ELR/ITR trip	05.F9
-K8	Relay 24V 2CO - Coolant heater OFF	02.C2
-K9	Relay 24V 1C - Open GB	02.B5
-K10	Relay 24V 1C - Close GB	02.B5
-K11	Relay 24V 1CO - Open MB	02.B5
-K12	Relay 24V 1CO - Close MB	02.B5
-K25	Relay 24V 1CO - Inlet shutdown valve control	02.B4
-K27	Relay 24V - Fleetlink Advanced Smart Box (O13)	03.E6
-K28	Relay 24V 2CO - AFT	02.C4
-K31	Relay 24V 1CO - Analyzer Power Locks (O11)	06.D8
-K40	Relay 24V 1CO - Genset Running	02.B4
-K41	Relay 24V 1CO - Common alarm	02.B4
-K42	Relay 24V 1CO - Low fuel level	02.B5
-K45	Relay 24V 2CO - Overfill sensor (O16)	03.D4
-K46	Relay 24V 1CO 20A - Fuel pump (O16)	03.D4
-KT1	Timer relay 150s (disconnection)	02.D6
-M1	Cooling compartment fan motor	05.F1
-M2	Engine compartment fan motor	05.F3
-N1	ECU	02.F7
-N3	PT100 4-20mA Converter	02.D8
-N4	AVR	05.A3
-N22	Earth leakage relay	05.E7
-N23	Earth leakage relay RCMA 420	05.E8
-PT1	Hour Meter	05.C9

Tag	Description	Location *
-Q1	Circuit breaker - GB	05.E6
-Q2_Q11	Circuit breaker - Sockets	07.B
-Q15	Circuit breaker - VSD	05.D1
-Q16	Circuit breaker - Engine fan motor	05.D3
-Q17	Circuit breaker - DEF Pump (O15)	03.D2
-Q23	Circuit breaker - 2P 6A	05.E9
-R3	Resistor - 120 Ω Engine CAN end	02.B7
-R21	Coolant heater - 2000W	04.F1
-S2	Spillage sensor	02.F3
-S3	Emergency stop - Cubicle	02.B1
-S9	Switch AFT (O16)	03.D4
-S8	Switch CBE ON/OFF	03.B6
-S10	Switch ON/OFF	02.C1
-S12	Switch frequency 60Hz	03.B6
-S14	Switch ISV ON/OFF	02.C9
-S15	Switch Resistance bus CAN ON/OFF	04.C10
-S16	Switch Thorus INT/EXT	05.D8
-S20	Switch - DEF Pump (O15)	03.C1
-S22	Switch - ELR	05.E7
-S30	PROGRAMMING VSD SWITCH	05.E2
-T1	Current transformer	05.B6
-T2	Current transformer	05.B6
-T3	Current transformer	05.B6
-T4	Current transformer 800/5A	06.D4
-T5	Current transformer 800/5A	06.D4
-T6	Current transformer 800/5A	06.D4
-T7	Current transformer 800/5A	06.E5
-T8	Current transformer 800/5A	06.E5
-T9	Current transformer 800/5A	06.E5
-T22	Earth leakage relay torus	05.D7
-T23	RCMA torus	05.D8
-TT1	PT100 - Coolant temperature	02.F8
-U1	VSD	05.E1
-U20	Battery charger	04.B2
-U27	Fleetlink Smartbox	03.C7
-U28	Fleetlink Corebox	03.C5
-V1	Current meter	06.C6
-V2	Current meter	06.C7
-X1	Terminal board	05.G6
-X2_X11	Socket 1PH/3PH - 16A to 125A	06.D
-X12	Powerlocks (O11)	06.C2
-X13	Socket 1PH16A	04.E2
-X14	Connector - Fuel level sensor	02.F2
-X15	Powerlocks (O11)	06.C2
-X16	Connector - ADT (O15)	03.G1
-X20	Connector - Cubicle-engine wire harness	02.E
-X21	Connector - Spillage Sensor	02.F3
-X22	Connector - Inlet shutdown valve	02.E9
-X23	Terminal strip - Control cubicle connections	
-X24	Terminal strip - Socket CB trip coil	06.D
-X25	Terminal strip - Customer terminals	04.E2-8
-X26	Terminal strip - TM connection	
-X27	Terminal strip - Fleetlink Smartbox	03.D9
-ALS	Connector - Analogue Load Sharing	04.C8
-C1	Connector - External Thorus	04.E7
-C2B	Connector - Remote start	04.E4

Tag	Description	Location *
-C4B-IN/OUT	Connector - Power management system	04.E9
-C6B	Connector - Main sensing	04.E3
-C8B	Connector - External tank	04.E8
-X44	Connector - Supply M2 (4C+T)	05.E3
-X45	Connector - Supply M1	05.E1
-X50	Connector - Alternator AVR exc	05.A5
-X51	Connector - Alternator AVR sensing	05.A5
-Y25	Inlet shutdown valve (O9)	02.F8
-Y26	ADT (O15)	03.F2

Terminal	Description
20	Fuel level sensor (analog)
39	ADT
40	Spillage liquid alarm
41	Remote start
42	Fan fail
43	VSD failure alarm
44	ELR/ITR alarm
45	AFT
46	Free
47	MB close feedback
48	MB open feedback
49	GM closed feedback
50	GB open feedback


Terminal	Description
10	Frequency 60Hz
11	CBE ON/OFF

Relay	Description
5	Fuel relay
6	Cranking
9	ADT (O15)
10	Genset Running
11	Dual frequency - 60Hz
12	Inlet shutdown valve control
13	Common alarm
14	Low fuel level
15	Close MB
16	Open MB
17	Close GB
18	Open GB

SEE THE CONFIGURATION SETTINGS DOCUMENT

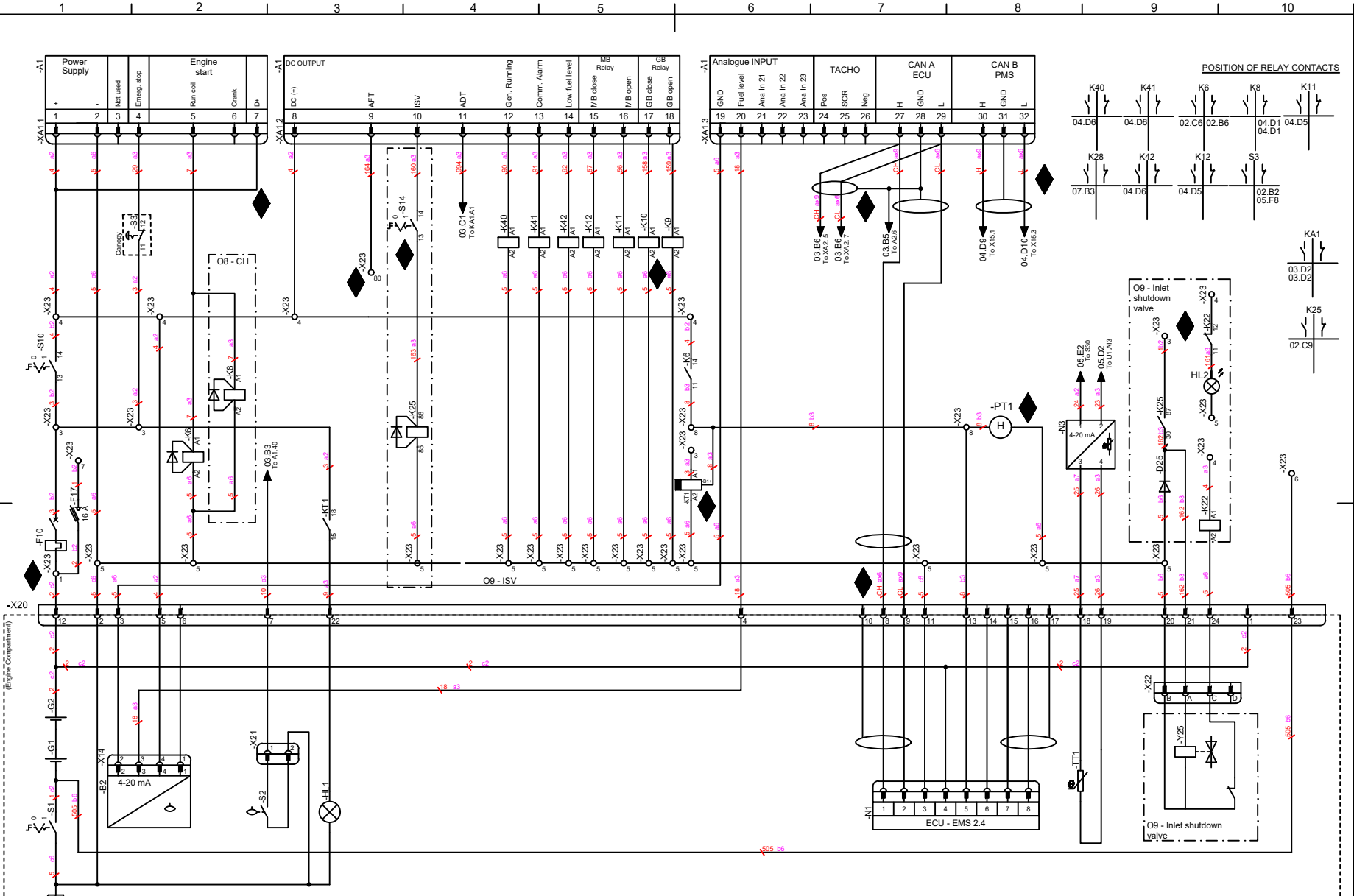
\* 04.D8  
Sheet  
Column

Rev	Modification	Date	Modified by
2	ALS Connection	2023-11-08	FArcega
1	Multiples Changes	2023-06-30	FArcega
0	Multiples Changes	2023-03-24	RGarcia

Drawing Owner ACD	ESF	Approved By A3	OArranz	Approved Date 2024-01-05	Status Released	Secrecy Class 1102 K/CONFIDENTIAL	Replaces 1636038696
 <b>DIAGRAM CIRCUIT</b> OTM AGC150 QAS+ 660 LOXAM						Designation Sheet 1 / 7	<h1>1636044023</h1>

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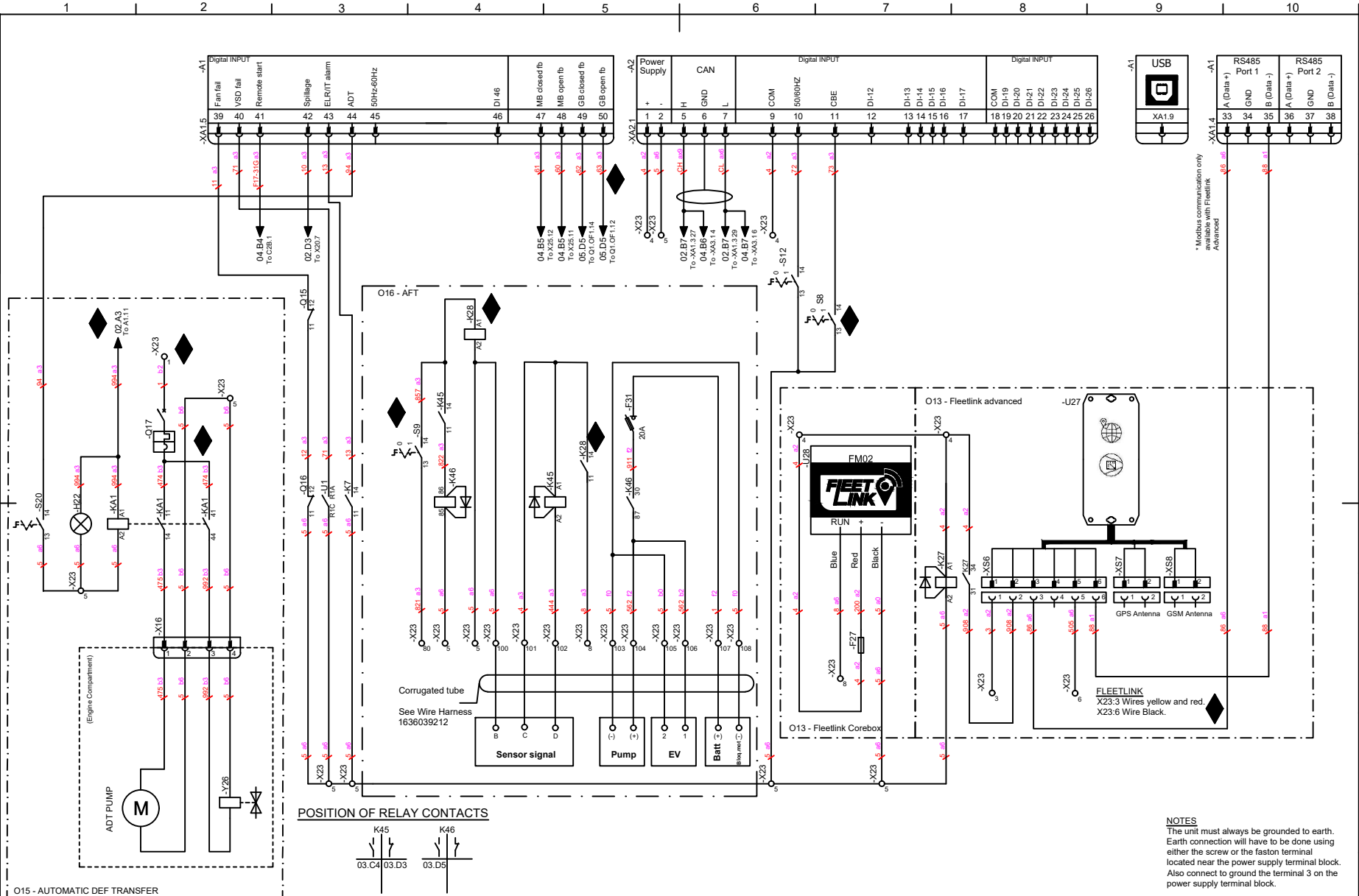
2	ALS Connection	2023-11-08	FRcega
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								Designation	Sheet 2 / 7
								<b>DIAGRAM CIRCUIT</b> OTM AGC 150 QAS+ 660 LOXAM	

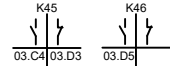
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**POSITION OF RELAY CONTACTS**



**NOTES**  
 The unit must always be grounded to earth. Earth connection will have to be done using either the screw or the faston terminal located near the power supply terminal block. Also connect to ground the terminal 3 on the power supply terminal block.

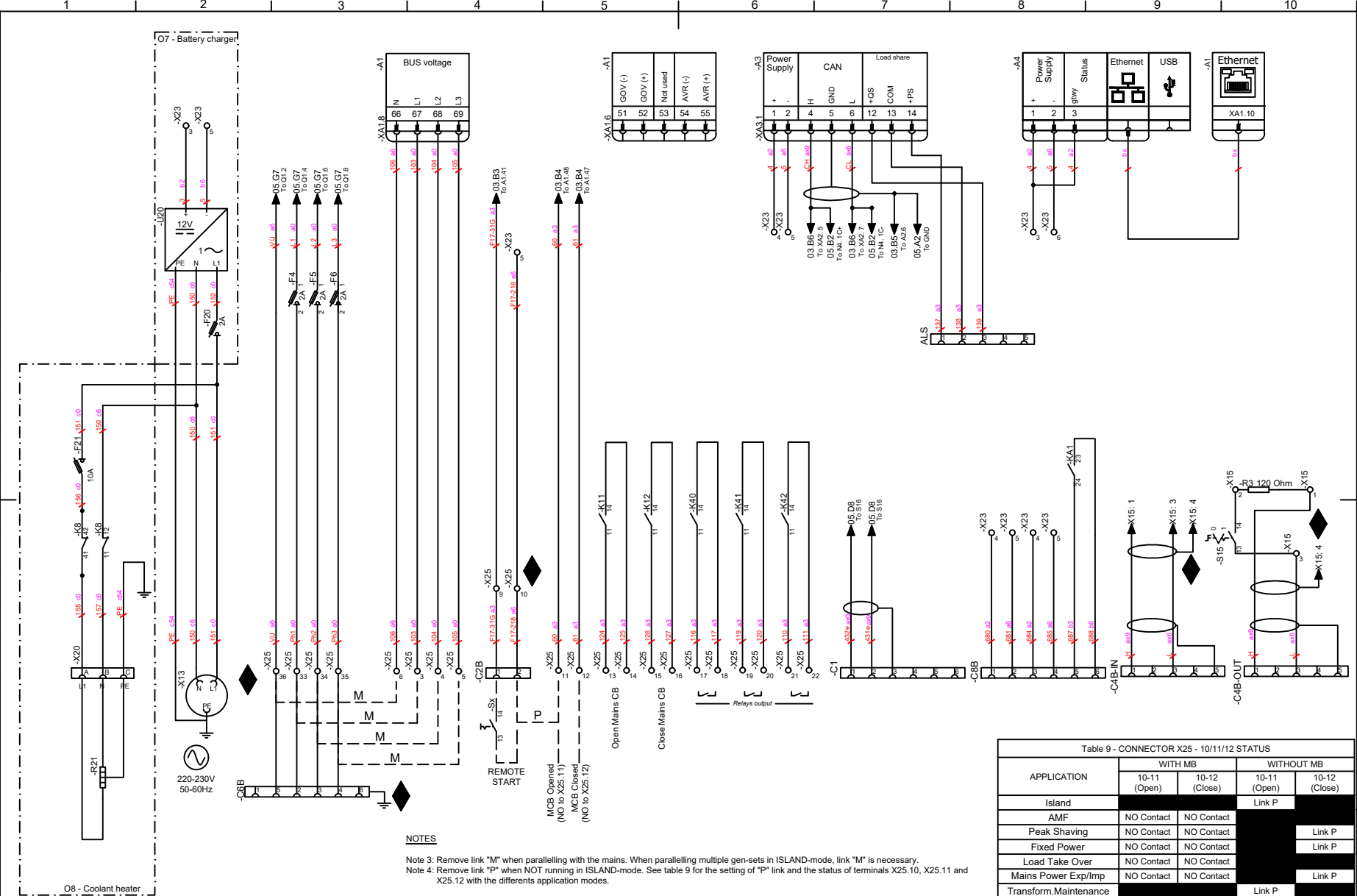
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<b>DIAGRAM CIRCUIT</b> OTM AGC 150 QAS+ 660 LOXAM						Designation Sheet 3 / 7
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**NOTES**  
 Note 3: Remove link "M" when paralleling with the mains. When paralleling multiple gen-sets in ISLAND-mode, link "M" is necessary.  
 Note 4: Remove link "P" when NOT running in ISLAND-mode. See table 9 for the setting of "P" link and the status of terminals X25.10, X25.11 and X25.12 with the different application modes.

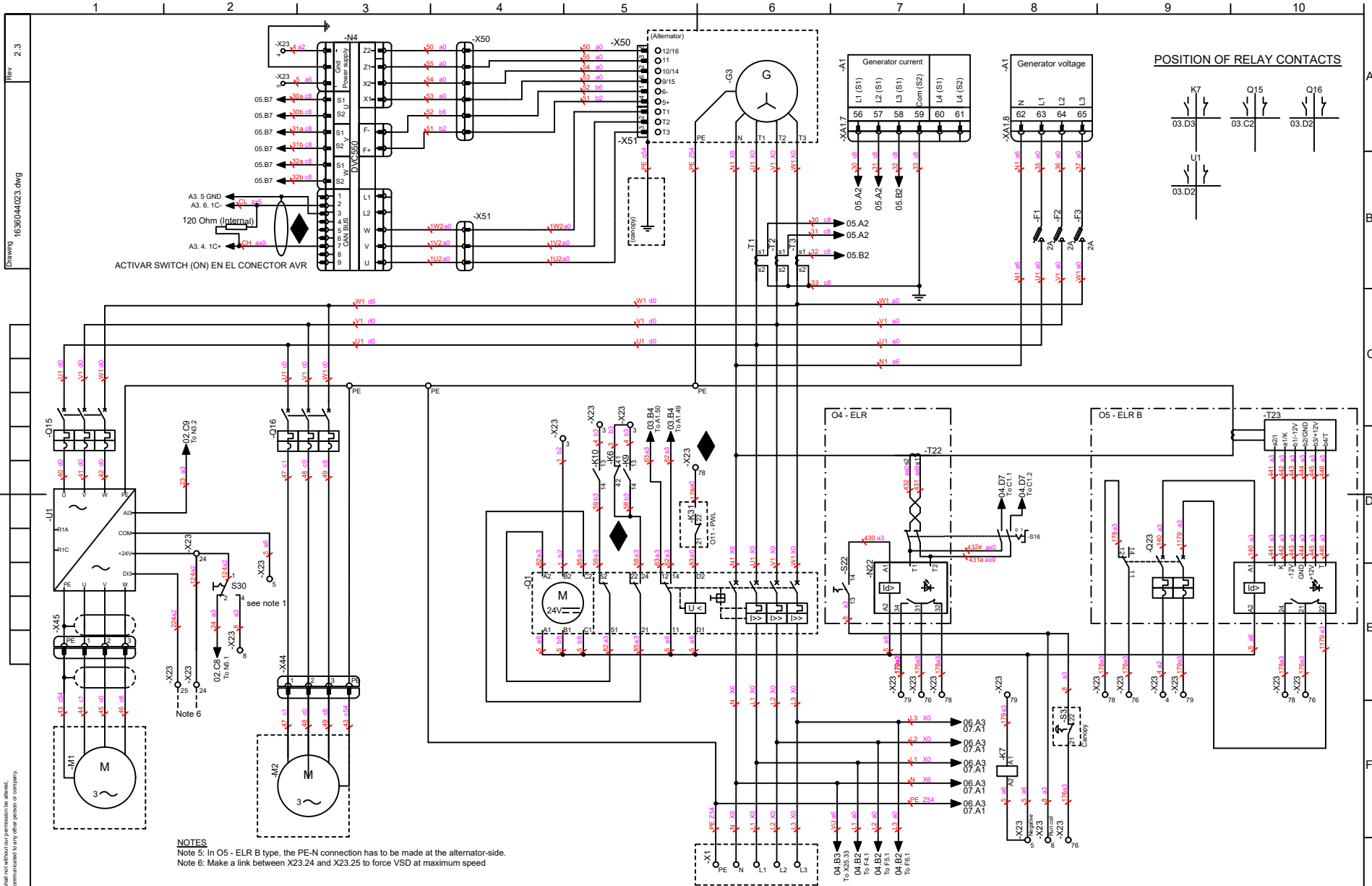
Table 9 - CONNECTOR X25 - 10/11/12 STATUS

APPLICATION	WITH MB		WITHOUT MB	
	10-11 (Open)	10-12 (Close)	10-11 (Open)	10-12 (Close)
Island			Link P	
AMF	NO Contact	NO Contact		
Peak Shaving	NO Contact	NO Contact		Link P
Fixed Power	NO Contact	NO Contact		Link P
Load Take Over	NO Contact	NO Contact		
Mains Power Exp/Imp	NO Contact	NO Contact		Link P
Transform.Maintenance			Link P	

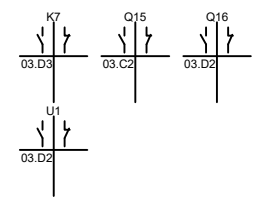
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**POSITION OF RELAY CONTACTS**



**NOTES**  
 Note 5: In O5 - ELR B type, the PE-N connection has to be made at the alternator-side.  
 Note 6: Make a link between X23.24 and X23.25 to force VSD at maximum speed

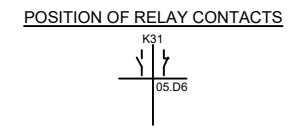
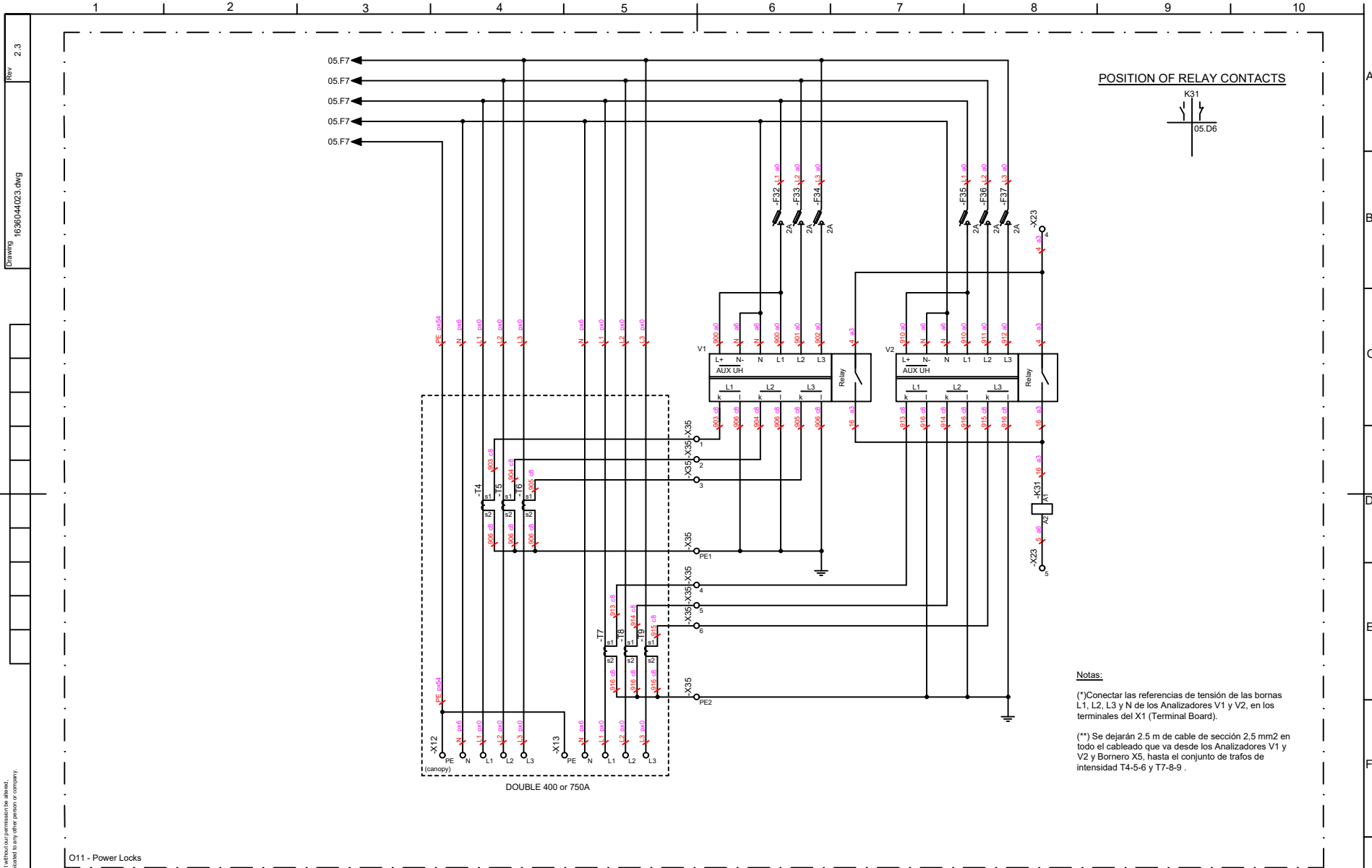
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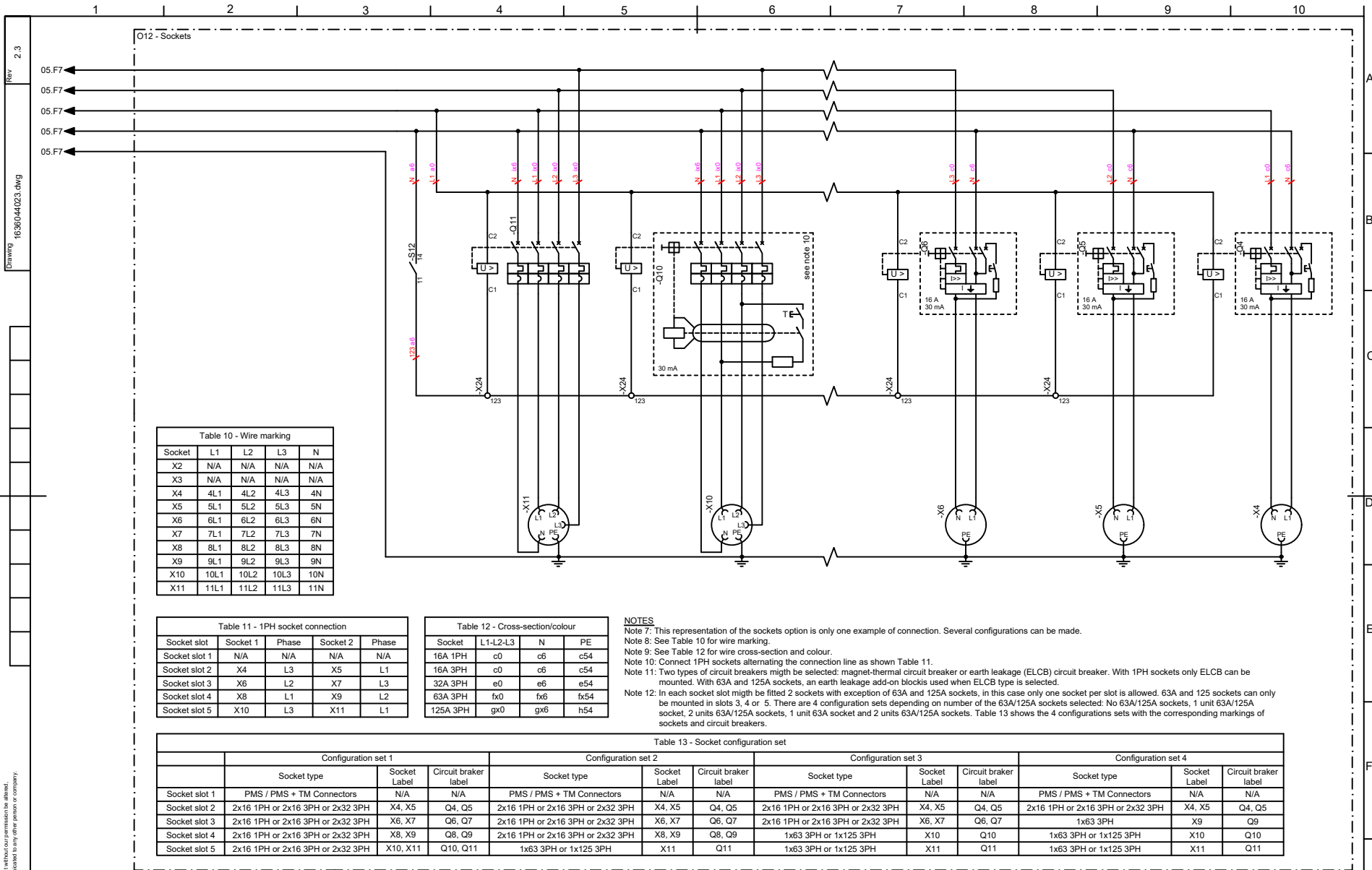
**Notas:**

(\*) Conectar las referencias de tensión de las bornas L1, L2, L3 y N de los Analizadores V1 y V2, en los terminales del X1 (Terminal Board).

(\*\*) Se dejarán 2.5 m de cable de sección 2.5 mm<sup>2</sup> en todo el cableado que va desde los Analizadores V1 y V2 y Bornero X5, hasta el conjunto de trafos de intensidad T4-5-6 y T7-8-9.

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<b>DIAGRAM CIRCUIT</b> OTM AGC150 QAS+ 660 LOXAM						Compare
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**Table 10 - Wire marking**

Socket	L1	L2	L3	N
X2	N/A	N/A	N/A	N/A
X3	N/A	N/A	N/A	N/A
X4	4L1	4L2	4L3	4N
X5	5L1	5L2	5L3	5N
X6	6L1	6L2	6L3	6N
X7	7L1	7L2	7L3	7N
X8	8L1	8L2	8L3	8N
X9	9L1	9L2	9L3	9N
X10	10L1	10L2	10L3	10N
X11	11L1	11L2	11L3	11N

**Table 11 - 1PH socket connection**

Socket slot	Socket 1	Phase	Socket 2	Phase
Socket slot 1	N/A	N/A	N/A	N/A
Socket slot 2	X4	L3	X5	L1
Socket slot 3	X6	L2	X7	L3
Socket slot 4	X8	L1	X9	L2
Socket slot 5	X10	L3	X11	L1

**Table 12 - Cross-section/colour**

Socket	L1-L2-L3	N	PE
16A 1PH	c0	c6	c54
16A 3PH	c0	c6	c54
32A 3PH	e0	e6	e54
63A 3PH	fx0	fx6	fx54
125A 3PH	gx0	gx6	h54

**NOTES**  
 Note 7: This representation of the sockets option is only one example of connection. Several configurations can be made.  
 Note 8: See Table 10 for wire marking.  
 Note 9: See Table 12 for wire cross-section and colour.  
 Note 10: Connect 1PH sockets alternating the connection line as shown Table 11.  
 Note 11: Two types of circuit breakers might be selected: magnet-thermal circuit breaker or earth leakage (ELCB) circuit breaker. With 1PH sockets only ELCB are mounted. With 63A and 125A sockets, an earth leakage add-on block is used when ELCB type is selected.  
 Note 12: In each socket slot might be fitted 2 sockets with exception of 63A and 125A sockets, in this case only one socket per slot is allowed. 63A and 125A sockets can only be mounted in slots 3, 4 or 5. There are 4 configuration sets depending on number of the 63A/125A sockets selected: No 63A/125A sockets, 1 unit 63A/125A socket, 2 units 63A/125A sockets, 1 unit 63A socket and 2 units 63A/125A sockets. Table 13 shows the 4 configurations sets with the corresponding markings of sockets and circuit breakers.

**Table 13 - Socket configuration set**

Socket slot	Configuration set 1			Configuration set 2			Configuration set 3			Configuration set 4		
	Socket type	Socket Label	Circuit breaker label	Socket type	Socket Label	Circuit breaker label	Socket type	Socket Label	Circuit breaker label	Socket type	Socket Label	Circuit breaker label
Socket slot 1	PMS / PMS + TM Connectors	N/A	N/A	PMS / PMS + TM Connectors	N/A	N/A	PMS / PMS + TM Connectors	N/A	N/A	PMS / PMS + TM Connectors	N/A	N/A
Socket slot 2	2x16 1PH or 2x16 3PH or 2x32 3PH	X4, X5	Q4, Q5	2x16 1PH or 2x16 3PH or 2x32 3PH	X4, X5	Q4, Q5	2x16 1PH or 2x16 3PH or 2x32 3PH	X4, X5	Q4, Q5	2x16 1PH or 2x16 3PH or 2x32 3PH	X4, X5	Q4, Q5
Socket slot 3	2x16 1PH or 2x16 3PH or 2x32 3PH	X6, X7	Q6, Q7	2x16 1PH or 2x16 3PH or 2x32 3PH	X6, X7	Q6, Q7	2x16 1PH or 2x16 3PH or 2x32 3PH	X6, X7	Q6, Q7	1x63 3PH	X9	Q9
Socket slot 4	2x16 1PH or 2x16 3PH or 2x32 3PH	X8, X9	Q8, Q9	2x16 1PH or 2x16 3PH or 2x32 3PH	X8, X9	Q8, Q9	1x63 3PH or 1x125 3PH	X10	Q10	1x63 3PH or 1x125 3PH	X10	Q10
Socket slot 5	2x16 1PH or 2x16 3PH or 2x32 3PH	X10, X11	Q10, Q11	1x63 3PH or 1x125 3PH	X11	Q11	1x63 3PH or 1x125 3PH	X11	Q11	1x63 3PH or 1x125 3PH	X11	Q11

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