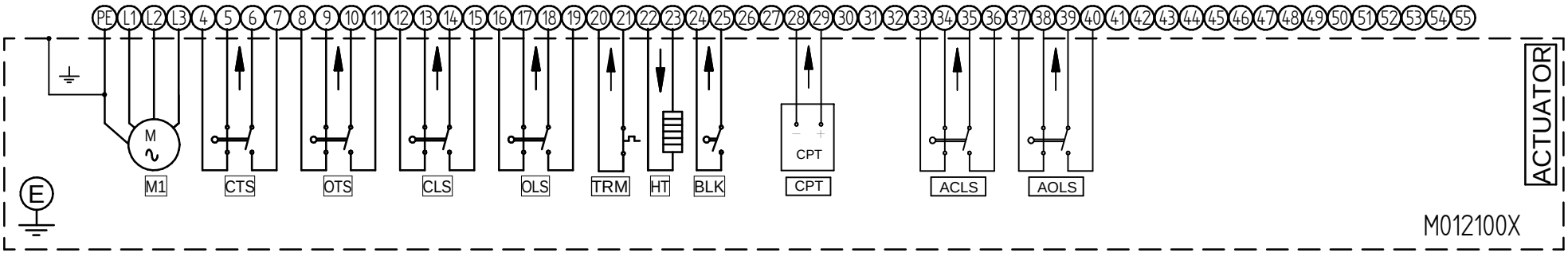
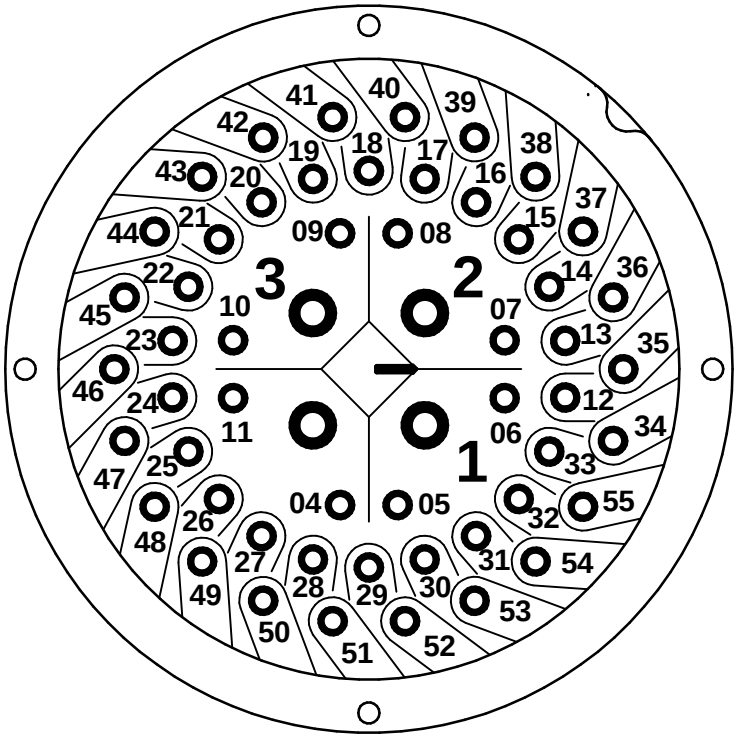


PLUG-AND-SOCKET CONNECTOR LAYOUT



LEGENDS:

M1	ELECTRIC MOTOR	ACTS	AUXILIARY CLOSE TORQUE SWITCH
CTS	CLOSE TORQUE SWITCH	AOTS	AUXILIARY OPEN TORQUE SWITCH
OTS	OPEN TORQUE SWITCH	ACLS	AUXILIARY CLOSE LIMIT SWITCH
CLS	CLOSE LIMIT SWITCH	AOLS	AUXILIARY OPEN LIMIT SWITCH
OLS	OPEN LIMIT SWITCH	IP1	VALVE MIDDLE TRAVEL POSITION SWITCH(No 1)
TRM	THERMAL PROTECTION DEVICE (MOTOR WIND).	IP2	VALVE MIDDLE TRAVEL POSITION SWITCH(No 2)
HT	ANTI-CONDENSATION HEATER	IP3	VALVE MIDDLE TRAVEL POSITION SWITCH(No 3)
BLK	BLINKER SWITCH	IP4	VALVE MIDDLE TRAVEL POSITION SWITCH(No 4)
POT	POTENTIOMETER (VALVE POSITION SIGNAL)	DSM	DIGITAL SWITCH MECHANISM(ELECTRONIC VALVE POSITION AND TORQUE SIGNALS)
CPT	CURRENT POSITION TRANSMITTER (VALVE POSITION SIGNAL)		

NOTES:

1. THE TERMINAL PLAN SHOWS THE MULTI-TURN ELECTRIC ACTUATOR IN INTERMEDIATE POSITION, ACTUATOR CLOSES VALVE CLOCKWISE.
2. SEE ACTUATOR USER MANUAL AND DATASHEETS FOR TECHNICAL DATA, PARAMETERS AND DESCRIPTION OF THE ACTUATOR ELECTRIC AND ELECTRONIC EQUIPMENT.
3. IF THE ACTUATOR IS CONFIGURED TO BYPASS THE MOTOR PROTECTION THERMOSTAT (TRM), THE ACTUATOR WILL NO LONGER COMPLY WITH THE ESSENTIAL SAFETY REQUIREMENTS.
4. THE USER MUST FIT A CLASS 10 OVERLOAD RELAY. THE RELAY MUST BE SIZED ACCORDING TO THE OVERCURRENT PROT. DEVICE SETTING VALUE FOR THE MOTOR.
5. REFER TO THE MOTOR DATA SHEET FOR THIS VALUE. THE OVERLOAD RELAY MUST BE SIZED TO ENSURE THAT IT TRIPS WITHIN 10 SECONDS IN A FAULT CONDITION.
6. THE USER MUST COMPLETE A RISK ASSESSMENT AND IMPLEMENT WHATEVER MEASURES ARE REQUIRED TO ENSURE THAT THE RESULTANT SYSTEM COMPLIES WITH ALL APPLICABLE LEGISLATION.

PARAMETER	VALUE	DESCRIPTION
TYPE	M	MULTI-TURN ELECTRIC ACTUATOR, STANDARD UNIT (SYNCROSET), MECHANICAL SWITCH MECH
MAIN POWER SUPPLY	0	A.C. THREE PHASE
FEEDBACK ANALOG POS. SIG.	1	0/4-20 mA CPT CURRENT POSITION TRANSMITTER, 2 WIRES
HEATER	2	ANTI-CONDENSATION HEATER, 220-240VAC
LIMIT SWITCHES	1	STANDARD+EXTRA LIMIT SWITCHES: 2 OPEN AND 2 CLOSE LIMIT SWITCHES (DPDT)
TORQUE SWITCHES	0	STANDARD:1 OPEN AND 1 CLOSE TORQUE SWITCHES (DPDT)
AUX. MIDDLE TRAVEL SWITCH	0	STANDARD: NOT INCLUDED (WITHOUT)

	ISSUE	DATE
1	FIRST PRODUCTION RELEASE	11-05-15
2	CTS (CLOSE BY TORQUE SWITCHING)	11-05-15

	ISSUE	DATE
3	REDRAWN IN SOLID EDGE	22-07-16
4	-	-

SHEET 1/2	DATE	SIGN.
MADE BY	11-05-2015	JB
CHECKED	11-05-2015	IM
APPROVED	10/05/2015	JAP

TERMINAL PLAN

WD CK-CKR STD., MSM, 3PH, 2WCPT, HT230, LIM+ALS, TOR, NOIMP

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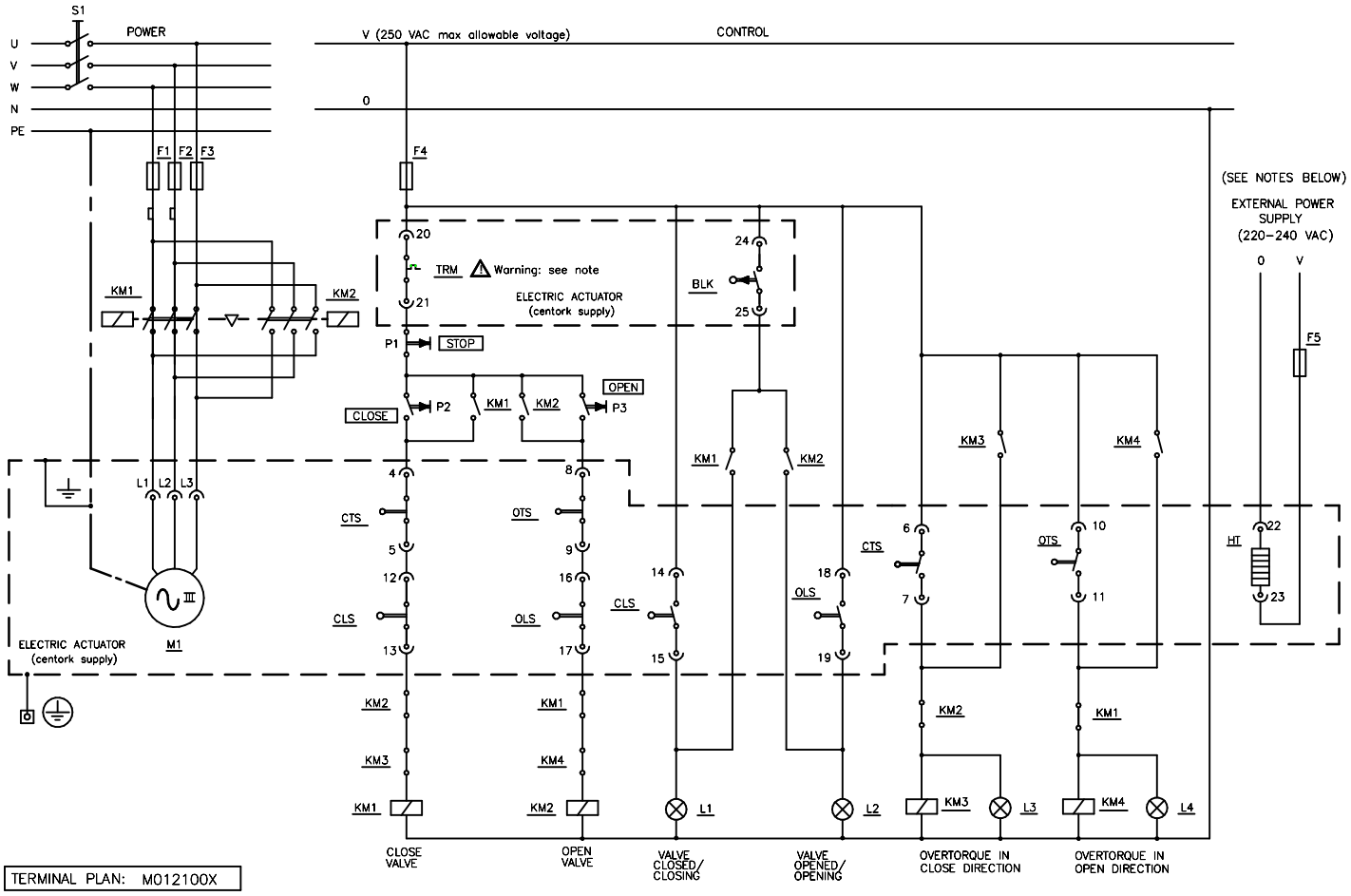

OPEN/CLOSE by limit switching

- CTS and OTS act as overload protection for the whole stroke, they interrupt the control circuit when reaching the actuator set tripping torque.
- OLS interrupts the control circuit when reaching the valve open limit set position.
- CLS interrupts the control circuit when reaching the valve close limit set position
- BLK gives information about valve movement.

OPEN by limit switching / CLOSE by torque switching

- CTS and OTS act as overload protection for the whole stroke, they interrupt the control circuit when reaching the actuator set tripping torque.
- OLS interrupts the control circuit when reaching the valve open limit set position.
- CTS interrupts the control circuit when closing (seating) the valve. Set the close limit switch CLS shortly before reaching the closed end position
- BLK gives information about valve movement.

OPEN/CLOSE by limit switching

SWITCH		CLOSED ← INTERMEDIATE → OPEN
CTS	4–5	
	6–7	
OTS	8–9	
	10–11	
CLS	12–13	
	14–15	
OLS	16–17	
	18–19	
BLK	24–25	

OPEN by limit switching/CLOSE by torque switching

SWITCH		CLOSED ← INTERMEDIATE → OPEN
CTS	4–5	
	6–7	
OTS	8–9	
	10–11	
CLS	12–13	
	14–15	
OLS	16–17	
	18–19	
BLK	24–25	

NOTES:

1. THE TERMINAL PLAN SHOWS THE ELECTRIC ACTUATOR IN INTERMEDIATE POSITION, ACTUATOR CLOSES VALVE CLOCKWISE
2. SEE ACTUATOR USER MANUAL FOR TECHNICAL DATA, PARAMETERS AND DESCRIPTION OF THE ACTUATOR ELECTRIC AND ELECTRONIC EQUIPMENT.
3. DPDT TORQUEN(CTS, OTS, ACTS, AOTS) AND LIMIT MICROSWITCHES (CLS, OLS, ACLS, AOLS) HAVE 1NO+1NC CONTACTS, ONLY SAME POTENTIAL CAN BE CONNECTED THROUGH BOTH CIRCUITS. STANDARD 250AVC/5A, 24VDC 3A. GOLD CONTACT SWITCHE (LOW ENERG. CIRCUITS) UNDER REQUEST
4. INTERMEDIATE POSITION SWITCHES, NO/NC CONTACT SETTABLE BY CAM (ACTUATOR)
5. EXTERNAL POWER SUPPLY FOR HEATER: HEATER MUST BE POWERED ACCORDING TO HEATER RATED VOLTAGE (SEE ACTUATOR ORDER FORM OR ORDER ACKNOWLEDGEMENT), A 250V 50mA QUICK BLOW FUSE MUST BE INSTALLED FOR 120V AND 240V RATED HEATERS
6. CPT ELECTRONIC POSITION TRANSMITTER: VOLTAGE/CURRENT 2, 3 AND 4 WIRES CONFIGURATIONS ARE POSSIBLE. CHECK PROPER TECHNICAL DATASHEET.
7. PRECISION POTENTIOMTER (POT): CHECK OHMIC VALUE
8. IF THE ACTUATOR IS CONFIGURED TO BYPASS THE MOTOR PROTECTION THERMOSTAT (TRM), THE ACTUATOR WILL NO LONGER COMPLY WITH THE ESSENTIAL SAFETY REQUIREMENTS.
9. THE USER MUST CONDUCT A RISK ASSESSMENT, AND IMPLEMENT WHATEVER EXTRA SAFETY MEASURES ARE REQUIRED, TO ENSURE THAT THE RESULTANT SYSTEM COMPLIES WITH THE LOW VOTAGE DIRECTIVE, AND ANY OTHER LEGISLATION IN FORCE AT THE INSTALLATION SITE.
10. A.C. SINGLE PHASE ACTUATORS ARE DELIVERED WITH THEIR CAPACITOR (VALUE INDICATED ON MOTOR NAMEPLATE). CAPACITOR MUST BE INSTALLED IN THE EXTERNAL ELECTRIC CABINET

	ISSUE	DATE
1	FIRST PRODUCTION RELEASE	11-05-15
2	CTS (CLOSE BY TORQUE SWITCHING)	11-05-15
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4	-	-

	DATE	SIGN.
SHEET 2/2		
MADE BY	11-05-2015	JB
CHECKED	11-05-2015	IM
APPROVED	10/05/2015	JAP

WIRING DRAWING
WD CK-CKR STD., MSM, 3PH, 2WCPT, HT230, LIM+ALS, TOR, NOIMP

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