



SESMAN

Manual Operation and Indication Unit for PLC

- Operates motor control actuators as well as pneumatic actuators
- Only digital PLC control outputs needed (analogue outputs not needed).
- Very useful when manual or local operation is needed.
- Designed to meet with the environmental stresses of ships and heavy industry.
- Specially well suited for combustion control systems.
- Easy and safe to operate and install.
- Can be used as indication unit.

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SESMAN MANUAL CONTENTS

SESMAN	1
Manual Operation and Indication Unit for PLC	1
SESMAN MANUAL CONTENTS	2
DESCRIPTION	3
BRIEF	3
DETAILED	4
PANEL FUNCTIONS	4
ADJUSTMENTS	4
SESMAN TECHNICAL DATA:	5
DIMENSIONS:	5
POWER SUPPLY:	5
AMBIENT TEMP:	5
VIBRATIONS:	5
IMMUNITY: EN 50 082-2	5
EMISSION:	5
MOTOR RELAY CONTACTS:	5
ANALOGUE OUTPUT SIGNAL:	5
DIGITAL INPUTS:	5
DIGITAL OUTPUTS:	5
ANALOGUE INPUT SIGNALS:	5
ALL ANALOGUE INPUTS:	5
INSTALLATION	6
ORDERING INFORMATION	6

DESCRIPTION

BRIEF

The SESMAN Man/Auto Unit can operate any motor control valve or digital actuator as well as provide 4-20mA to an I/P-converter for a pneumatic actuator. For motor control actuators the internal relays may be used for direct connection to the actuator or buffered with external motor control relays.

The transmitter signal is 4-20 mA. Actuator position signal from position potentiometer 100 ohm to 1kOhm or 4-20 mA positioner.

Connection to the PLC controller is made with digital and analogue signals. Process signal and actuator position analogue signals are connected to the SESMAN unit and linked back to the PLC controller. Both analogue signals to the controller is of 4-20 mA type and the digital signals are 24 volts DC.

When SESMAN is used with 4-20 mA actuators the PLC controller can still use digital increase and decrease signals instead of analogue 4-20 mA output signal, as SESMAN converts from digital to analogue actuator control signal. This means that the same PLC controller type may be used, independent of actuator type.

SESMAN has a digital display for process signal and a bar graph for actuator position. The digital display may be adjusted to preferred units to display actual process value rather than only 0 to 100%. The actuator range is displayed by pressing the Display Range pushbutton on the front panel.

The actuator position is range and zero adjustable. The actuator position may also be transferred to the display by pressing the actuator pushbutton on the front panel if higher position resolution is needed than the 5% the bar graph uses.

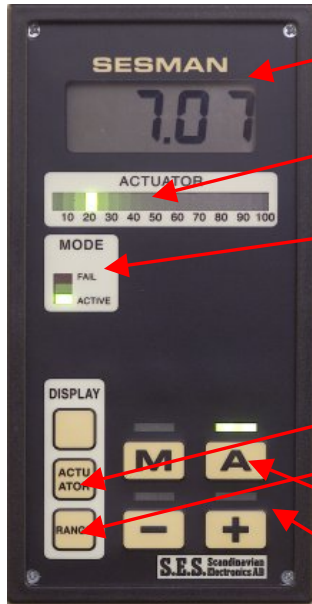
For operation Man, Auto, Increase (+) and Decrease (-) panel pushbuttons are used.

All adjustments are made on the right hand side of the unit.

SESMAN may be used as stand alone manual operated actuator operator or together with a normal process controller as man/auto station. It's very useful in PLC-based control systems when a local operation or indication unit is used. It can operate with the PLC-controller very smoothly and no 4-20 mA output signals from the PLC is needed, only a few digital and two 4-20 mA input signals on the PLC are needed. SESMAN power supply is 24 VDC to suit most PLC systems.

DETAILED

PANEL FUNCTIONS

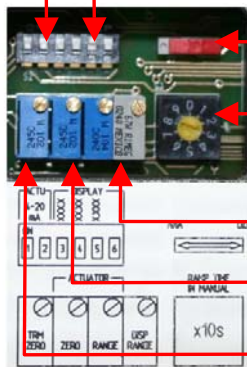


- INDICATOR for process value. Adjustable from 0.250 – 1999. With DISPLAY pushbuttons, other signals may be displayed
- Bar graph for Actuator position indication
- Mode indicator. FAIL will force the controller to Manual mode. If the digital input signal “Control OK” disappears FAIL will be activated.
- DISPLAY SELECTOR. Actuator position in 0.0 to 100.0 % may be displayed. With RANGE process value range may be displayed.
- OPERATION PUSHBUTTONS. Here the actuator position may be increased or decreased from + / - pushbuttons in manual mode. Manual / Auto mode may also be selected. Selected mode and increase / decrease are also indicated

ADJUSTMENTS

Made on unit right hand side

↑ ON
↓ OFF



- Actuator position type. For potentiometer position transmitter S1 and S2 should be off. For 4-20mA position transmitter S1 and S2 should be on
- Display decimal point position selector switches
- DIGital (motor) or ANAlogue actuator selector
- Actuator control signal ramp time in 10 second steps in manual mode. Only in use when analogue (4-20 mA) actuator is selected.
- Display range adjustment trimmer. Adjustment range 0.250 - 1999
- Actuator position zero and range adjustment
- Process value transmitter zero adjustment trimmer

SESMAN TECHNICAL DATA:

DIMENSIONS:

W x H x D	72x144x130 mm
Depth behind panel	140 mm
Depth in front of panel	8 mm
Panel cut out	67x137 mm + 0.5 mm
Max panel thickness	25 mm
Weight	0.5 kg

POWER SUPPLY:

24 VDC \pm 5%	160 mA
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AMBIENT TEMP:

-10 to +55 °C	IEC 68-2-30 Db
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VIBRATIONS:

4-100 Hz 0,7 g	IEC 68-2-6 Fc
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IMMUNITY:

Discharge	Air 8kV Contact 4kV	EN 50 082-2
RF	10V/m 80-1000MHz 80% AM	EN 61 000-4-2
Injected	10V 0,15-80MHz	EN 61 000-4-3
Burst	1kV / 2kV	EN 61 000-4-6
Conducted AF	24V 50-3kHz	IEC 801-4
Surges	1kV diff / 2kV c.m.	IEC 801-5
High Voltage	1,5kV AC	BV 19-27.2

EMISSION:

Max 60dB μ V 0,15-30MHz	EN 55 022 Class B
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MOTOR RELAY CONTACTS:

AC 230V 2A 600VA
DC 300V 0.5A 100W

ANALOGUE OUTPUT SIGNAL:

Control output	4-20 mA max load = 500 Ω
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DIGITAL INPUTS:

24V DC \pm 20% (internal or external supply)	10mA each input
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DIGITAL OUTPUTS:

24V DC \pm 20%	Max 20mA each output
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ANALOGUE INPUT SIGNALS:

Process signal 4-20mA	R in 110 Ω approx.
Actuator pos 100 Ω – 1 k Ω or 4-20 mA	R in 1 M Ω approx. R in 110 Ω approx

ALL ANALOGUE INPUTS:

Common mode voltage 20 Volts max.

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INSTALLATION

When mounting the SESMAN controller in a panel or cabinet, make sure that the pin screw holders are in their correct positions in the controller housing before tightening. Otherwise the controller housing may be damaged. Mounting depth is 140 mm cables included. Please note that cables should be mounted so the unit may be drawn out of the control panel to be able to make adjustments on the units right hand side.

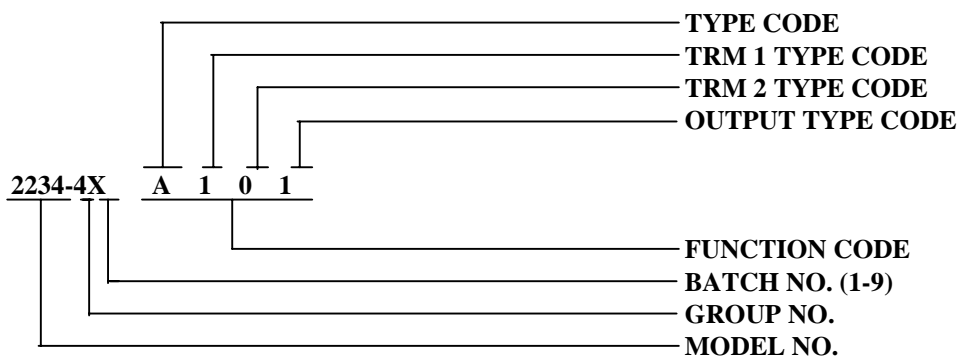
Power supply voltage is 24 Volts DC.

Digital input signals to the SESMAN unit are 24V DC. These inputs are galvanic insulated. Thus the 24V DC can be supplied either internally by SESMAN or externally from any 24V DC power supply unit. Input current per channel is approx 10 mA.

Digital output signals from the SESMAN unit are 24V DC. The outputs are internally supplied with 24 Volts DC. Max external load is 20 mA per channel

ORDERING INFORMATION

ORDER NO.	FUNCTIONS				
S.E.S. AB TYPE NO.	FUNCTION CODE	PROCESS VALUE TRM 1	ACTUATOR POSITION TRM 2	CONTROLLER OUTPUT	DESCRIPTION
004761-41	A101	4-20mA	POT/4-20mA	4-20mA	
004760-41	P40	4-20mA	POT/4-20mA	Digital	Relay output for motor actuator

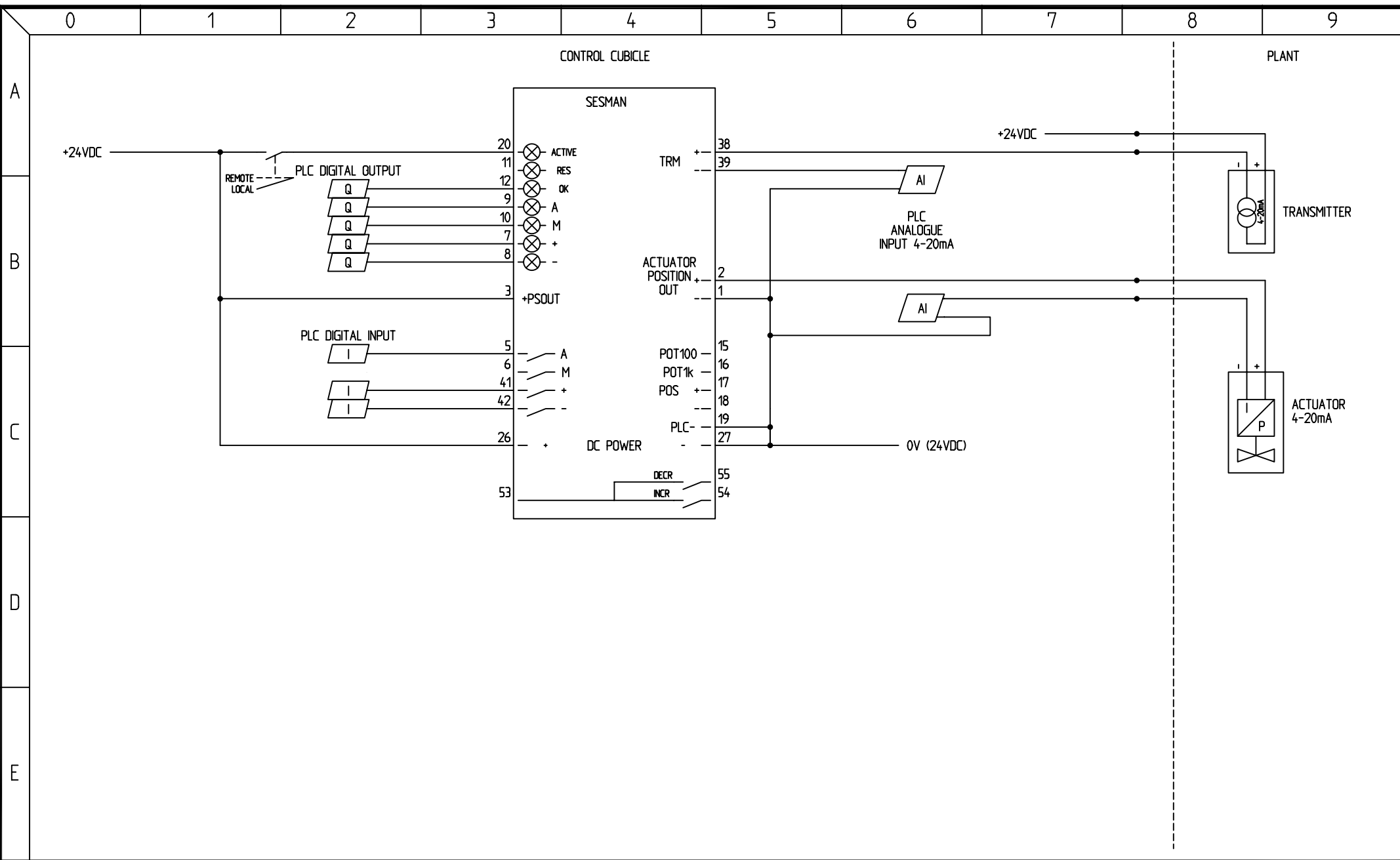


Please specify all input and output types in your order.

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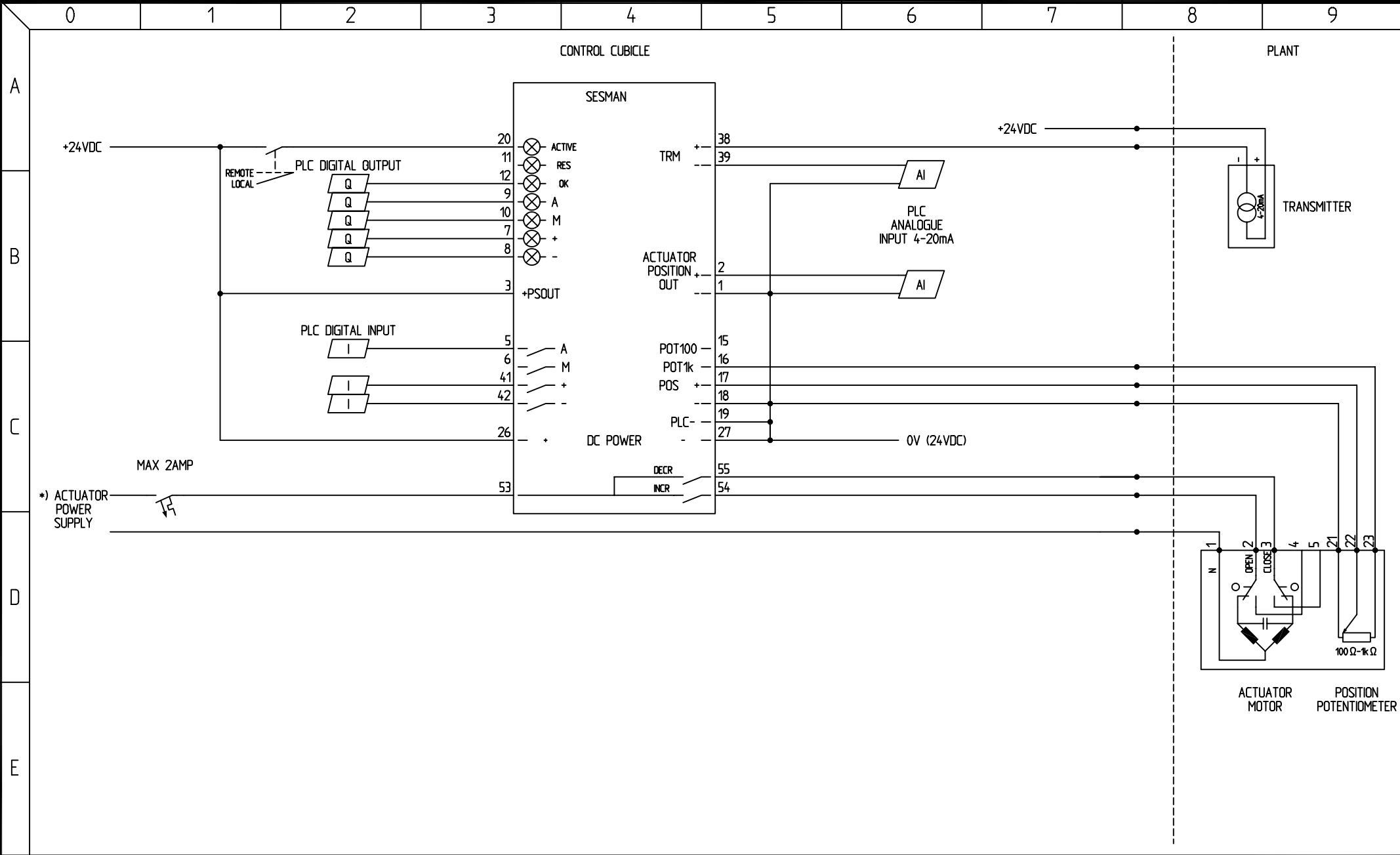


Anmärkningar/Remarks	Senaste Ändring/ Last revision	Anläggning/Plant	Jmf ritn/See drawing	Forts/Next sh 3
	Best nr/Order No.	Benämning/Designation TYPICAL CONNECTION ANALOGUE ACTUATOR	Littera	Antbl/Tot sh 2
		Konstr/Design	Godk/Approv	Ritning nr/Drawing No. 5130-31
		Datum/Date 2005-05-27	Ersätter/Replaces	Stor/ Size A3

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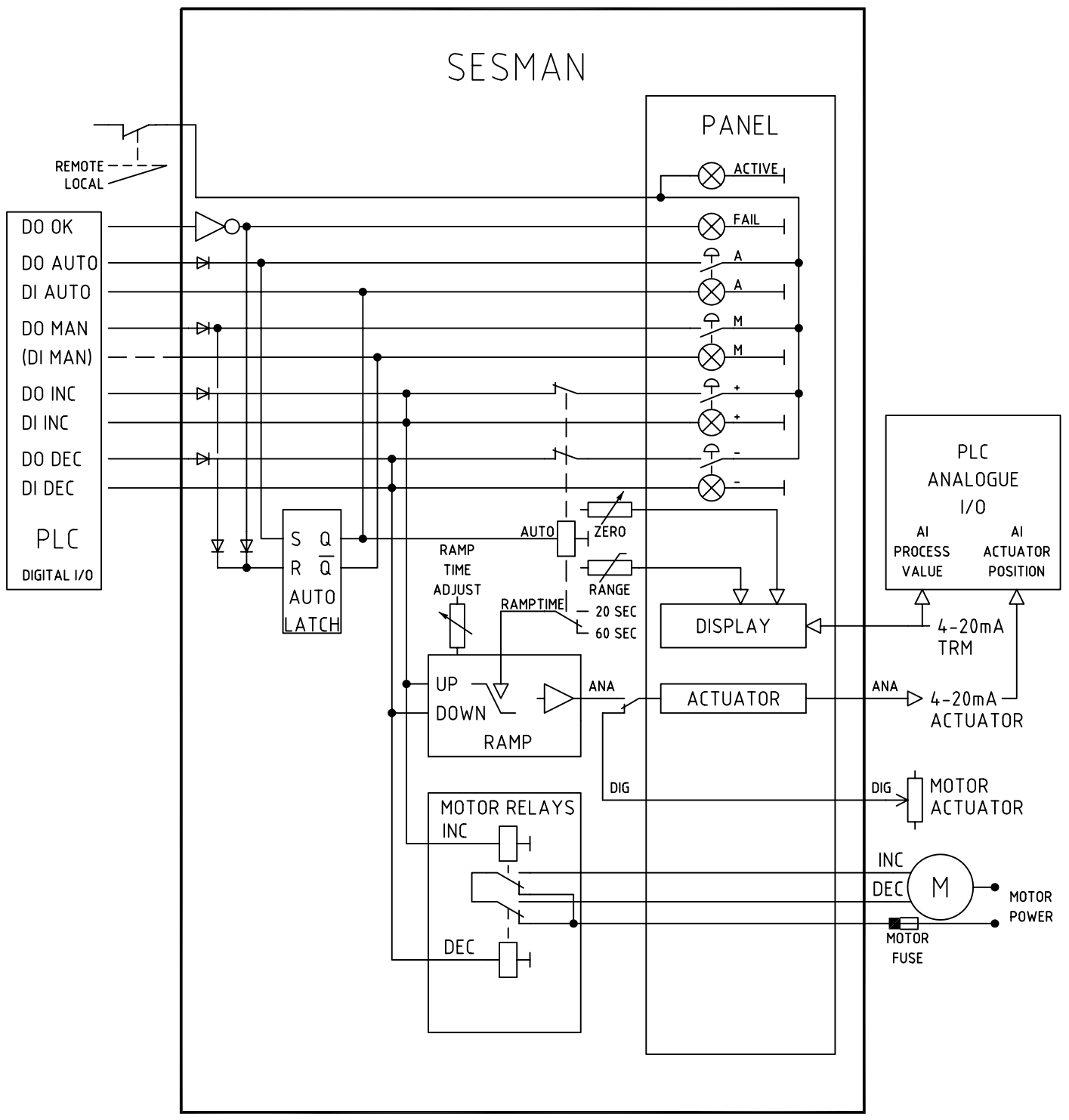


Anmärkningar/Remarks MAX 230V AC 2A 300V DC 0.5A WITHOUT EXTERNAL RELAYS	Senaste Ändring/ Last revision	Anläggning/Plant	Jmf ritn/See drawing	Forsta/Next sh 2
	Best nr/Order No.	Benämning/Designation TYPICAL CONNECTION MOTOR ACTUATOR	Littera	Antbl/Tot sh Blad/Sheet 1
Konstr/Design		Gransk/Check	Godk/Approv	Ersätter/Replaces
Datum/Date 2005-05-27		Fil nr/File No.		Ritning nr/Drawing No. 5130-31
S.E.S. Scandinavian Electronics AB				Storl/Size A3

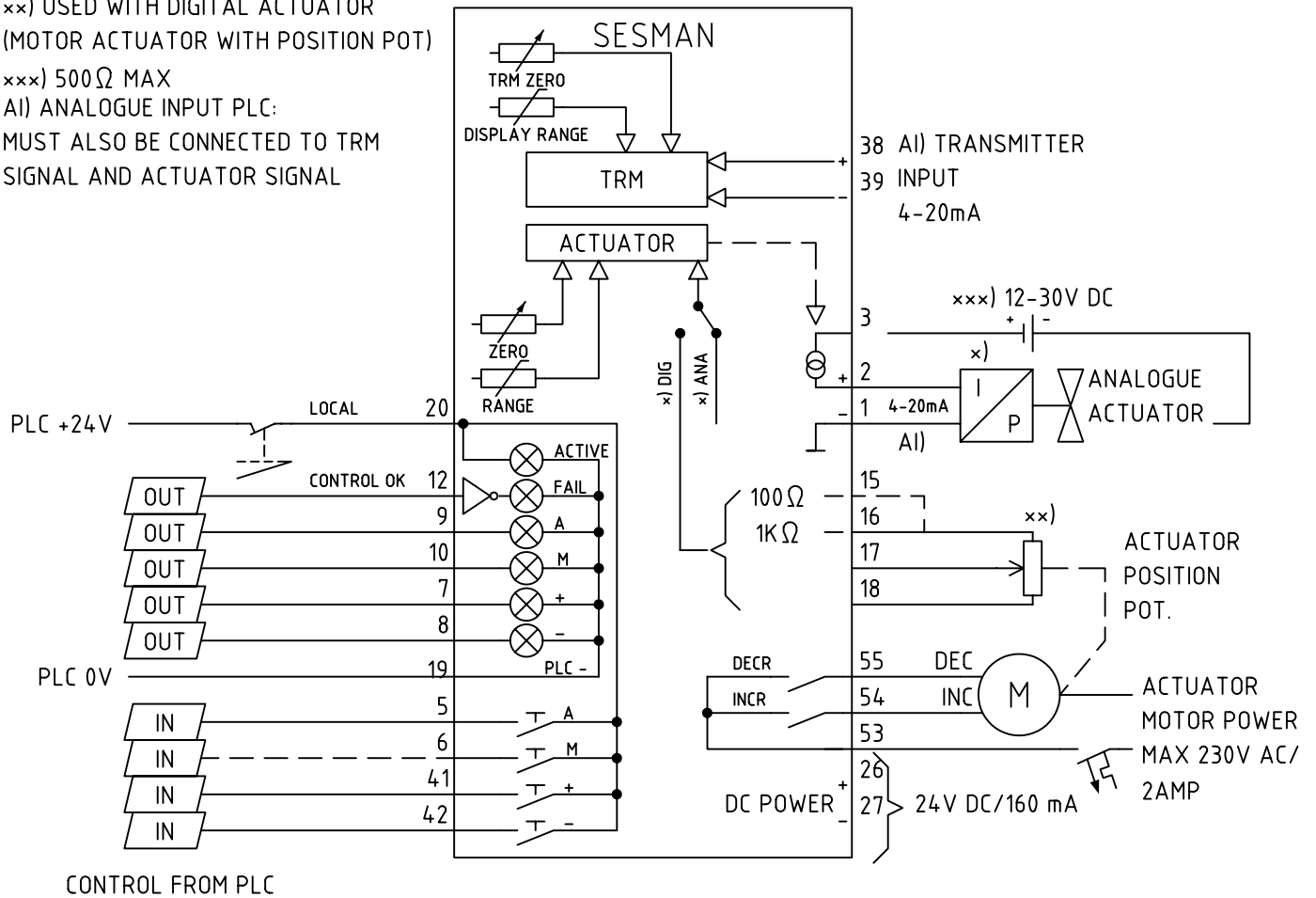
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SESMAN



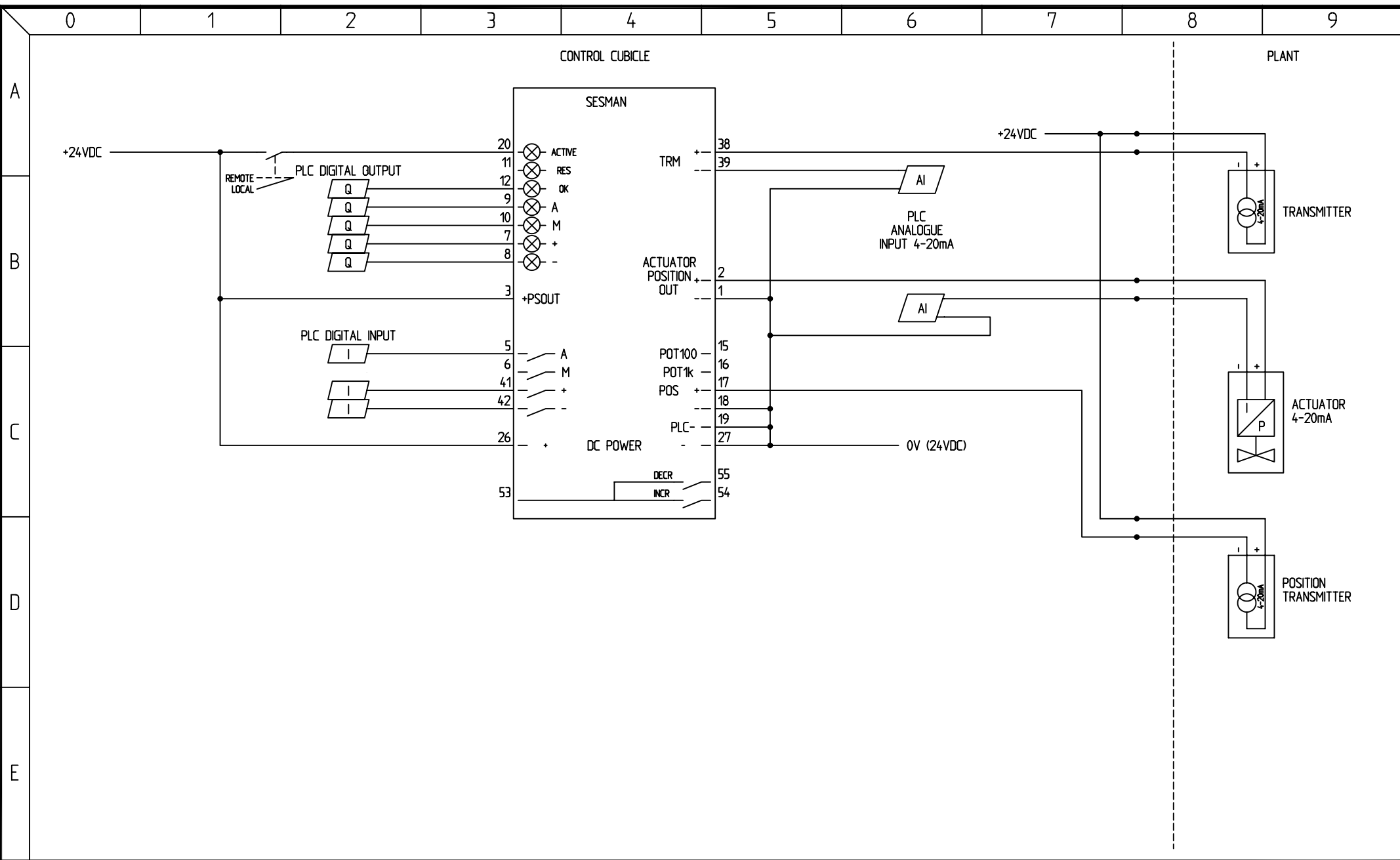
×) USED WITH ANALOGUE ACTUATOR
 ××) USED WITH DIGITAL ACTUATOR
 (MOTOR ACTUATOR WITH POSITION POT)
 ×××) 500Ω MAX
 A) ANALOGUE INPUT PLC:
 MUST ALSO BE CONNECTED TO TRM
 SIGNAL AND ACTUATOR SIGNAL



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	Best nr/Order No.	Benämning/Designation	Littera	Antbl/Tot sh	Blad/Sheet
<p style="text-align: center;">TYPICAL CONNECTION</p> <p style="text-align: center;">WITH 4-20mA POSITION SIGNAL</p> <p style="text-align: center;">S.E.S. Scandinavian Electronics AB</p>		Konstr/Design	Gransk/Check	Godk/Approv	Ersätter/Replaces
		Datum/Date	2005-05-27		Fil nr/File No.
5130-31					Stor/Size
					3
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