Tecofi

VALVE MANUFACTURER - FRANCE

INSTALLATION INTRUCTIONS

ACTUATOR J34 : T20 TO T300

Tecofi France
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ACTUATOR J34 : T20 TO T300 INSTALLATION INSTRUCTIONS

READ THESE INSTRUCTIONS BEFORE CONNECTING THE ACTUATOR. DAMAGE CAUSED BY NON COMPLIANCE OF THESE INSTRUCTIONS IS NOT COVERED BY OUR WARRANTY.

J34 electric actuators (models T20 to T300) operate with the use of live electricity. It is recommended that only qualified electrical engineers be allowed to connect or adjust these actuators.

1. VOLTAGE

All our actuators models **T20** to **T300** are ready to work from **24 to 240 VDC/VAC 50/60Hz**.

2. ELECTRICAL CONNECTORS

WARNING: Before connecting ensure that the voltage to be applied to the actuator is within the range shown on the identification label. The supplied electrical connectors, used to connect to the actuator are DIN plugs. Ensure the diameter of cable to used conforms to the maximun and minimun requirements of the DIN plugs to maintain water tightness (fig.1).

CONNECTOR	SMALL BLACK		BIG GRIS or BLACK	
	DIN43650/C		EN175301-803 FORMA A	
model	min Ø	max Ø	min Ø	max Ø
J34 T20 à T300	5mm	6mm	8mm	10,5mm

fig.1

Warning: Ensure that the square rubber seal is in place when fixing each DIN plug to the actuator. Failure to do so could allow water ingress and damage caused by this installation error will invalidate any warranty. The DIN plugs are fixed to their respective bases on the actuator housing with a screw. Do not over tight the screw when assembling (Max. 0.5Nm).

1 Gasket
2 Terminal strip
3 cable fixing screws
4 Housing
5 Washer
6 Grommet
7 Gland - nut
8 Fixing screw
9 Washer
10 Gasket

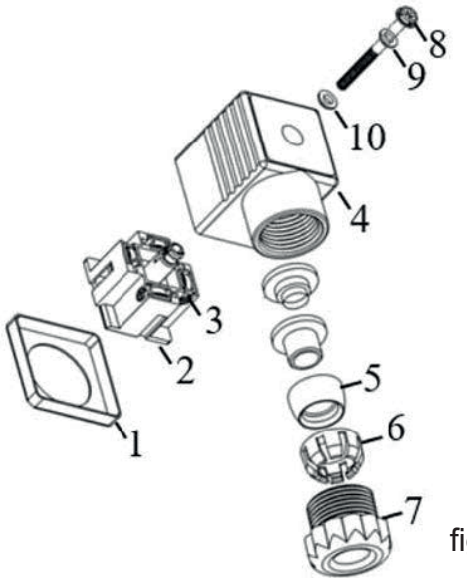
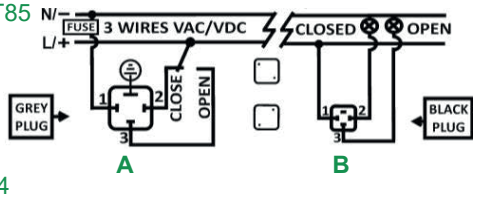


fig.2

External Connecting Diagram: J34 model T20 to T300.

J34
T20/T85



J34
T140/T300

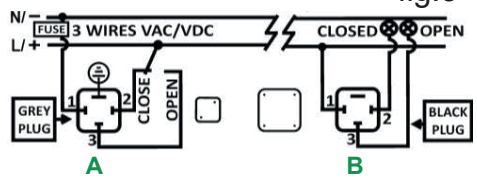


fig.3

STANDARD MODE : 3 WIRES ON - OFF

A = Power supply plug
A: VAC 3 wires (grey plug)
PIN 1 = NEUTRAL + PIN 2 = Close actuator
PIN 1 = NEUTRAL + PIN 3 = Open actuator

A: VDC 3 wires (grey plug)
PIN 1 = NEGATIVE + PIN 2 = POSITIVE = Close actuator
PIN 1 = NEGATIVE + PIN 3 = POSITIVE = Open actuator

B = Volt free contact plug
PIN 1 / PIN 2 = Close
PIN 1 / PIN 3 = Open

J34
T20/T85

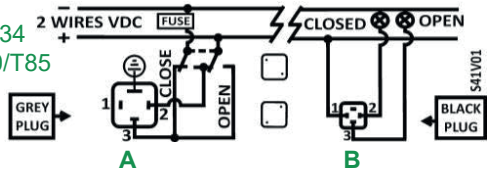
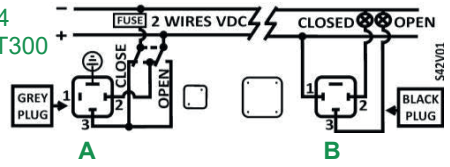


fig.4

J34
T140/T300

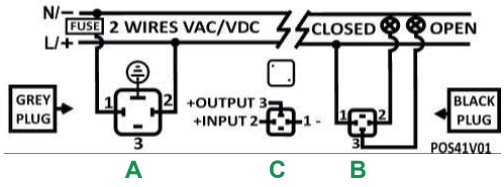


STANDARD MODE : 3 WIRES ON - OFF

A = Power supply plug
A: VDC 2 wires (grey plug)
PIN 2 = POSITIVE + PIN 3 = NEGATIVE = Close actuator
PIN 2 = NEGATIVE + PIN 3 = POSITIVE = Open actuator

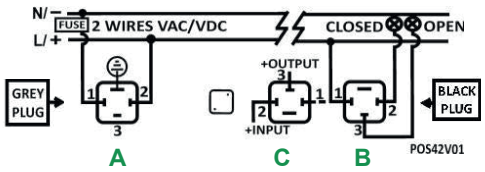
B = Volt free contact plug
PIN 1 / PIN 2 = Close actuator
PIN 1 / PIN 3 = Open actuator

J34
T20/T85



J34
T140/T300

fig.5



POSITIONER VAC/VDC

A = Power supply plug
A: VAC 2 wires (grey plug)
PIN 1 = NEUTRAL + PIN 2 = Power supply plug

A: VDC 2 wires (grey plug)
PIN 1 = NEGATIVE + PIN 2 = POSITIVE = Power supply plug

B = Volt free contact plug
PIN 1 / PIN 2 = Close
PIN 1 / PIN 3 = Open

C = Instumentation Signal
C: Input signal : 4/20mA or 0/10V
PIN 1 = NEGATIVE + PIN 2 = POSITIVE = Input signal
PIN 1 = NEGATIVE + PIN 3 = POSITIVE = Output signal

3. LOCAL VISUAL POSITION INDICATOR

All J34 actuators are supplied with a local visual position indicator comprises a black base with a yellow insert that shows, both the position and direction of rotation (fig.6).

The open and close positions have the following logos molded into the top cover OPEN 90 and CLOSE 0.
Opening = Closing =


fig.6 0 = Close


fig.6 90 = Open

4. EMERGENCY MANUAL OVERRIDE FACILITY

The J34 has 2 operating modes, automatic and manual, the required mode is selected by using a lever on the lower half of the actuator housing (fig.7).

The 2 positions are marked:
AUTO = Automatic operation
MAN = Manual operation

WARNING : Do not remove the selector lever securing screw, as this will allow its internal mechanism to become loose and will cause irreparable damage to the actuator's gearbox.
Removing this screw will invalidate the warranty.

When "AUTO" position is selected:
The hand wheel, of models 20, 35, 55, and 85 rotates automatically, it is very important not to block it, otherwise the actuator could suffer unrepairable damages.

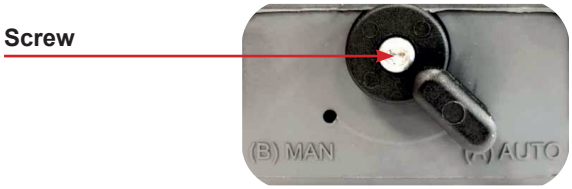


fig.7 J34 T20 to T85

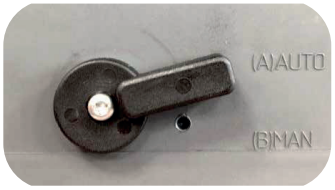


fig.7 J34 T140 to T300

When "MAN" function is selected:

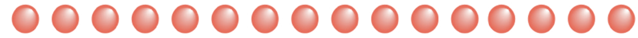
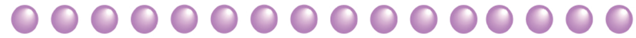
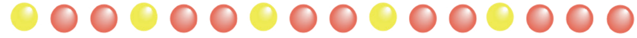
1. The electronic system cuts the power to the motor after a few seconds.
2. The mechanical connection between the motor and the output shaft is disconnected.
3. The desired position can be achieved by using the manual override lever or the hand wheel.
4. There are two ways to reactive the motor after being isolated whilst in "MAN" position:
   - 4.1 With the actuator in "MAN" function, turn the hand wheel to the open or close position. The motor will start working. Now change the manual override from "MAN" to "AUTO", and the actuator is ready to operate automatically again.
   - 4.2 Change from "MAN" mode to "AUTO". Desactivate the supply voltage for a few seconds which resets the actuator and it could operate automatically again.

5. EXTERNAL LED LIGHT STATUS

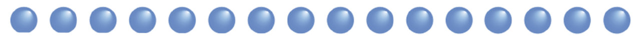
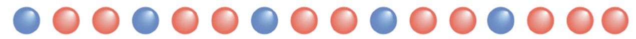
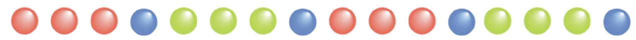
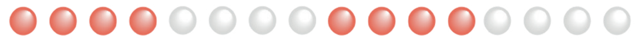
The **LED** status light provides visual communication between the actuator and the user. The current operational status of the actuator is shown by either solid lit, or different flashing sequences of **LED light**. (fig.8)


fig.8

ACTUATOR ON-OFF OPERATIONAL

ACTUATOR ON-OFF OPERATIONAL	LED STATUS
Actuator without power being supplied	
Open Actuator	
Close Actuator	
Stop Actuator. PIN1 (N) or (-) + PIN2+3 (F) or (+) Connection (standard mode only)	
Actuator opening	
Actuator closing	
Actuator limiter function on, open direction	
Actuator limiter function on, close direction	
Motor off, after fixed time	
Actuator in middle position. For 3 position actuator only	
wirh BSR option : BATTERY BACKUP — Actuator without power and working with the NO BSR system. MAX 3 min	
wirh BSR option : BATTERY BACKUP — Actuator without power and working with the NC BSR system. MAX 3 min	
wirh BSR option : BATTERY BACKUP — Battery protection. Danger, the battery needs recharging. BSR blocked	

ACTUATOR WITH POSITIONER OPERATIONAL STATUS

ACTUATOR WITH POSITIONER OPERATIONAL STATUS	LED STATUS
Actuator without power supply	
Actuator in the correct position	
Actuator opening	
Actuator closing	
Actuator with positioner, in self-adjustment mode	
Actuator with limiter function on, open direction	
Actuator with limiter function on, close direction	
Motor off, after fixed time	
Higher instrumentation signal. Blocked actuator. Need RESET	
No instrumentation signal delected or with 0mA When 0-20mA or 0V when 0-10V	
with BSR option : BATTERY BACKUP — Actuator without power supply. Working with BSR NO. For 3min Max	
with BSR option : BATTERY BACKUP — Actuator without power supply. Working with BSR NO. For 3min Max	
with BSR option : BATTERY BACKUP — Battery protection. Danger, the battery needs recharging. BSR blocked	

Instructions BSR V1 30032023

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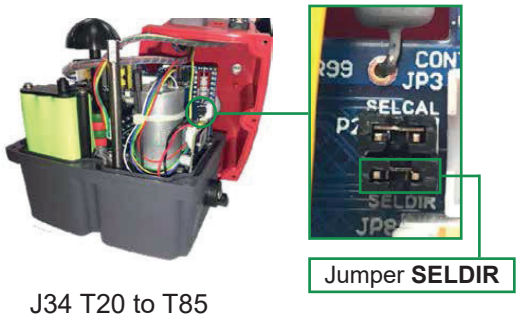
6. BSR - BATTERY BACKUP

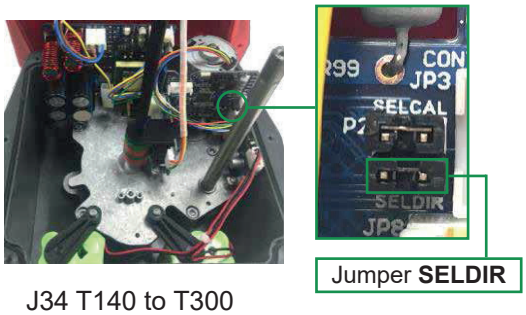
In case of an electrical failure, the actuator which is fitted with the BSR plug-in failsafe system, will go to the predetermined position: NO (Normally Open) or NC (Normally Close).

Set up by using the SELDIR Jumper (fig.9):
- NC : jumper on
- NO : jumper off



J34 T20 to T85

fig.9



J34 T140 to T300

fig.9

7. DPS

Use the configuration you need by moving the DIPs:
Place the DIPs (fig.10) according to the signal you need to work with.

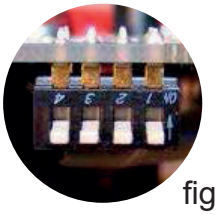
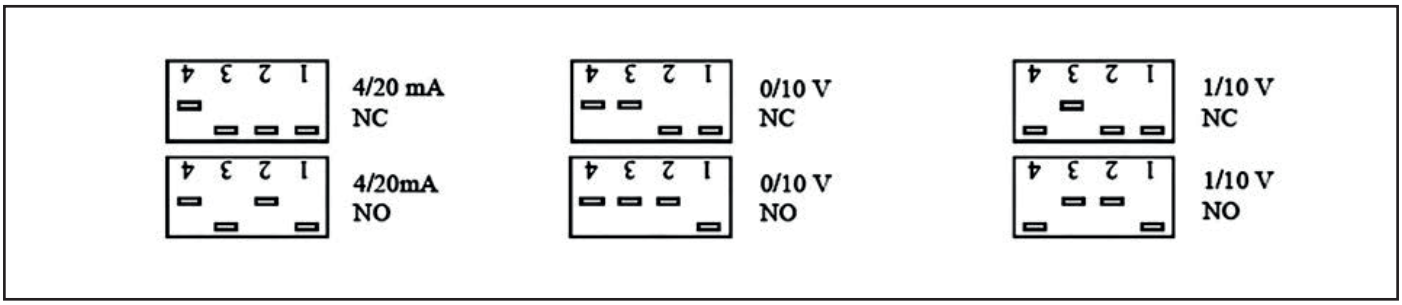


fig.10



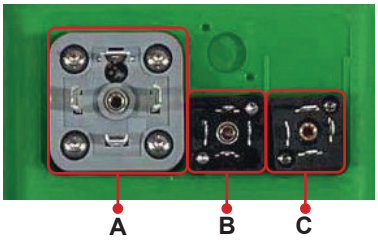
External adjustment

B. Plug - Connect a cable between PIN 1 (on the right side) and PIN Earth (on the bottom) (fig.11)
A. Plug - Connect voltage to the actuator in the following way:
VAC: PIN1 (neutral) and PIN2 (phase).
VDC: PIN1 (negative) and PIN2 (positive).

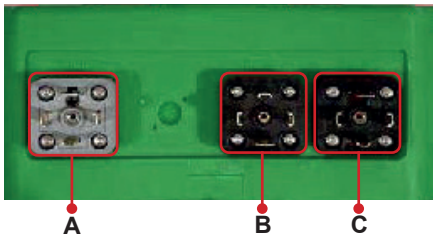
***VERY IMPORTANT:** BEFORE CONNECTING **"A"** PLUG TO THE ACTUATOR, CHECK THAT THE VOLTAGE IS THE SAME AS THE ONE SPECIFIED ON THE ID LABEL (CARTER).

B. Plug - Disconnect the cable between PIN 1 (on the left side) and PIN Earth (on the bottom).
The actuator will make a complete maneuver.
The actuator is ready to connect the (4/20mA or 0/10V) signal to the B plug

J34 T20 to T85 cover



J34 T140 to T300 cover



8. HEATER

ATC is in charge of the automatic control of inner temperature. It is ON while the actuator is connected to the power supply. Therefore, we strongly recommend to maintain the power supply connected to the actuator, otherwise the ATC system would remain disconnected.

9. MOUNTING TO COMPONENT BEING ACTUATED (EX:1/4 TURN VALVE)

It is vital that the mounting kit used to connect the electrical actuator to the component (ex: valve) is correctly manufactured and assembled. The mounting bracket's holes must be drilled to ensure that the centerline of the actuator's drive is perfectly in line with the component's drive-centerline, and that the drive coupling/adaptor rotates around this centerline. The mounting holes of the actuator conform to ISO 5211, and the female output drive conforms to DIN 3337.
We strongly recommend that valves/components to be actuated that have ISO 5211 compliant top work are used wherever possible as it greatly assists in ensuring the concentricity of mounting the actuator to the valve.
The male square end of the drive coupling MUST NOT be longer than the maximum depth of the actuator female output drive when the assembly is bolted together.
Failure to comply with these instructions will cause uneven wear and dramatically reduce the working life of the valve and actuator.

* In case of a power supply failure, the actuator would stop in the position it were at this moment. When the power supply is reestablished, the actuator would keep on working following the prior direction.

VERY IMPORTANT :
Check that any object are blocking the valve (damper, etc.). Connect the actuator, following the connection diagram on the label of the actuator. We recommend that the actuator has an independent system of fuses, which could protect the actuator against other electrical devices.