Danfoss T1 Electrohydraulic Two Position Controls Owner's Manual

MAKING MODERN LIVING POSSIBLE
Electrical Installation
Series 51 Motor
Electrohydraulic Two-Position
Controls T1, T2

Contents

T1 Electrohydraulic Two Position Controls

Revision history
Table of revisions

Date	Changed	Rev
August 2015	Converted to Danfoss layout	BA
April 2007	First edition	AA

Literature references

S51 electrohydraulic two-position controls T1, T2 literature references

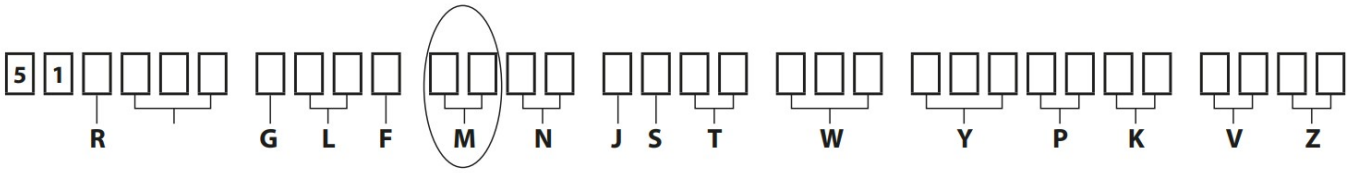
Literature title	Description	Literature number
S51 and 51-1 Bent Axis Variable Displacement Motors Technical Information	Complete product electrical and mechanical specifications	520L0440
On/Off Functions Function Block User Manual	Compliant function block set-up information	11022918

Latest version of technical literature
Danfoss product literature is online at: **http://powersolutions.danfoss.com/literature/**

Product overview

Product image
S51 electrohydraulic two-position controls T1, T2

Nomenclature



Code M options

M	Description
T1	Electrohydraulic two-position control, 12 Vdc, DIN connector
T2	Electrohydraulic two-position control, 24 Vdc, DIN connector

Only certain control options for the S51 motor utilize the Electrohydraulic Two-Position Control. Please refer to the motor's nomenclature to determine if the motor is equipped with the proper option. The nomenclature can be found on the motor's nametag.

Theory of operation

S51 electrohydraulic two-position controls T1, T2

Displacement can be changed electrohydraulically under load from minimum displacement to maximum displacement and vice versa, by using a solenoid. When the solenoid is energized the motor has maximum displacement and the pressure compensator does not function.

- Solenoid not energized = minimum displacement
- Solenoid energized = maximum displacement

PCOR

The control can be overridden by Pressure Compensator Override (PCOR) using high loop pressure. When the PCOR activates, the motor displacement increases toward maximum. Pressure ramp from PCOR start pressure (with motor at minimum displacement) until maximum displacement is reached is less than 10 bar [145 psi]. This ensures optimal power utilization throughout the entire displacement range of the motor. PCOR start pressure is adjustable from 110 to 370 bar [1600 to 5370 psi].

T*C0

Pressure compensator configuration: T*C0 with hydraulic brake pressure defeat.

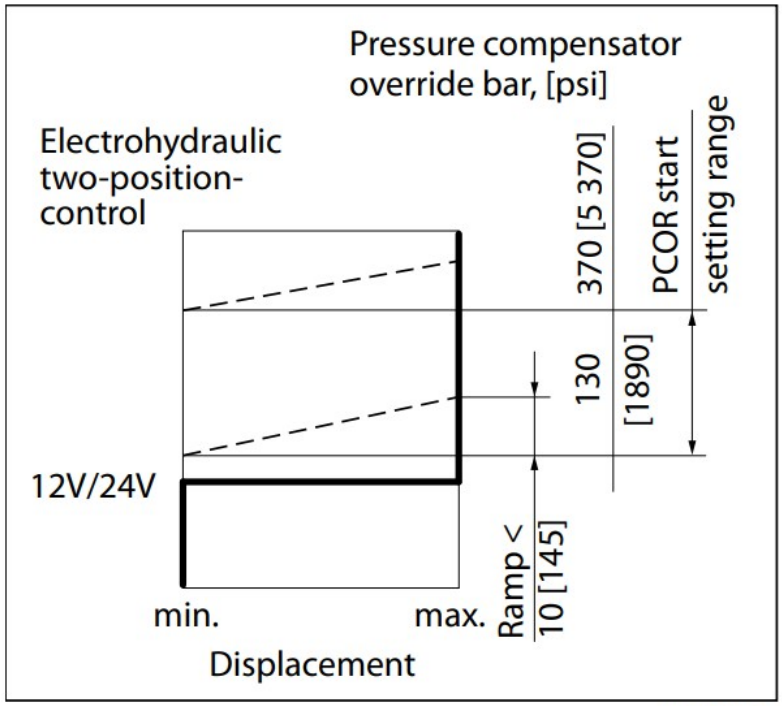
A shuttle valve ahead of the pressure compensator prevents operation in the deceleration direction (when motor is running in pump mode). This is designed to prevent rapid or uncontrolled deceleration while the vehicle/machine is slowing down. The shuttle valve must be controlled by a 2-line external signal. Pressure compensator override with brake pressure defeat is mainly used in systems with pumps having electric or hydraulic proportional controls or automotive controls.

T*C2

Pressure compensator configuration: T*C2 without brake pressure defeat

Pressure compensator functions when the motor is running in motor mode as well as in pump (deceleration) mode.

Control operation T1, T2****



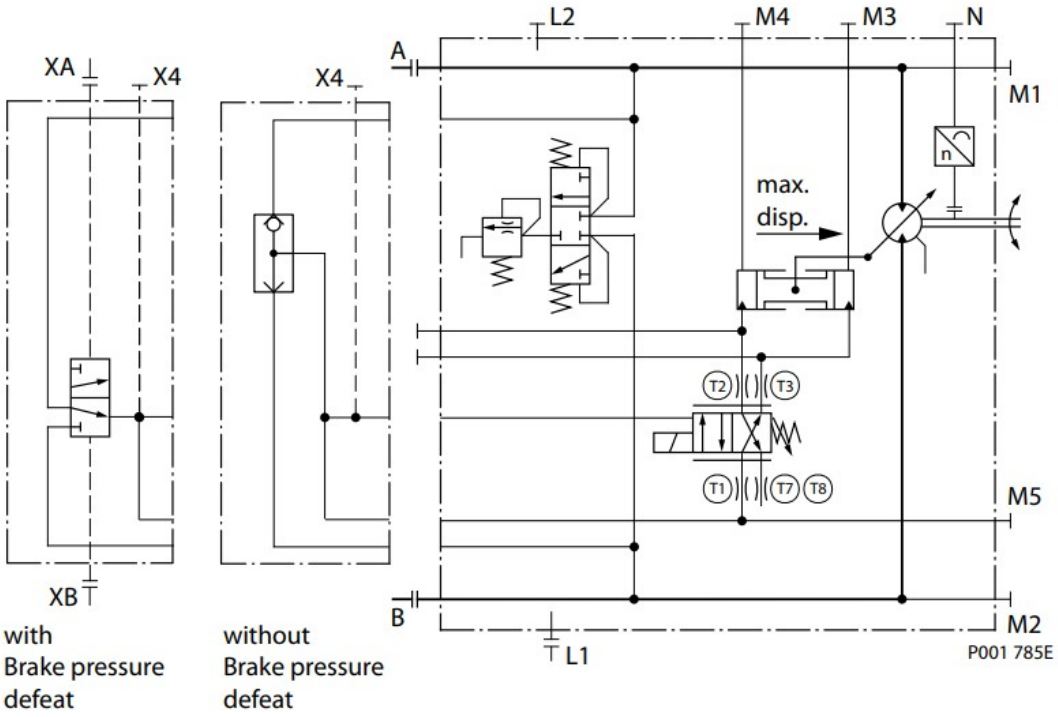
P001 872E

Warning

Unintended vehicle or machine movement hazard. The loss of hydrostatic drive line power, in any mode of operation (forward, neutral, or reverse) may cause the system to lose hydrostatic braking capacity. You must provide a braking system, redundant to the hydrostatic transmission, sufficient to stop and hold the vehicle or machine in the event of hydrostatic drive power loss.

Hydraulic schematics

Circuit diagram – motor with electrohydraulic two-position control T1**, T2**



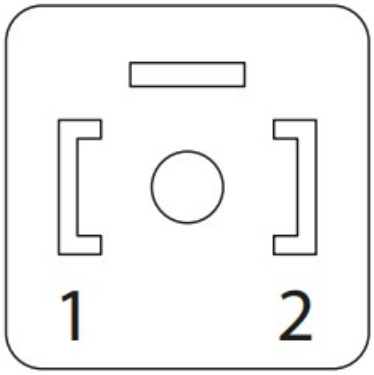
Ports:
A, B = Main pressure lines
L1, L2 = Drain lines
M1, M2 = Gauge port for A and B
M3, M4 = Gauge port servo pressure
M5 = Gauge port servo supply
XA, XB = Control pressure ports, brake pressure defeat
T1, T2, T3, T7, T8 = Optional orifices
N = Speed sensor

Electrical specifications
Two-position solenoid

M-option	**T1**	**T2**
Voltage	12 Vdc	24 Vdc
Rated power	34 W	34 W

Electrical installation

Pinout
DIN 43650 connector
Pin location



Pinout

Pin	Function
1	PWM signal
2	Ground

Pinout (alternative)

Pin	Function
1	Ground
2	PWM signal

Pin compatibility
PLUS+1® module pin type

Pin	Function
1,2	DOUT
1,2	DOUT/PVG Power
1,2	PWMOUT/DOUT/PVG Power supply
1,2	PWMOUT/DOUT/PVGOUT
1,2	Power ground –

Mating connector
DIN 43650 connector parts list

Description	Quantity	Ordering Number
DIN 43650 connector	1	Hirschmann 932 106-100
Mating connector kit	1	Danfoss K09129

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Documents / Resources

Danfoss T1 Electrohydraulic Two Position Controls [pdf] Owner's Manual
T1 Electrohydraulic Two Position Controls, T1, Electrohydraulic Two Position Controls, Two Position Controls, Position Controls, Controls

References

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