	DC MOTOR CONTROLLER	DCM
UNITED AUTOMATION	MODULE	X10335

INTRODUCTION

This general purpose, modulated, pulse width, low voltage DC controller, can be operated in any of the following modes:

Motor Control: High Frequency (RT/RT1 no link) speed control set by a 5KΩ potentiometer.

Lighting/Heating Control: Low frequency (RT/RT1 linked) output level set by a 5KΩ potentiometer as above.

Temperature Control: Thermistor connected across RT/RT1, with a temperature range of 5-130°C. Temperature set by a 5KΩ potentiometer.

APPLICATIONS

Include speed control of low voltage, high frequency, DC motors, low voltage lighting and medium frequency heaters.

FEATURES

RoHS Compliant Directive 2002/95/EC

- Manual or signal control

- Temperature control with optional sensor

- 180 or 350Hz selectable frequency ranges

- Short circuit protection

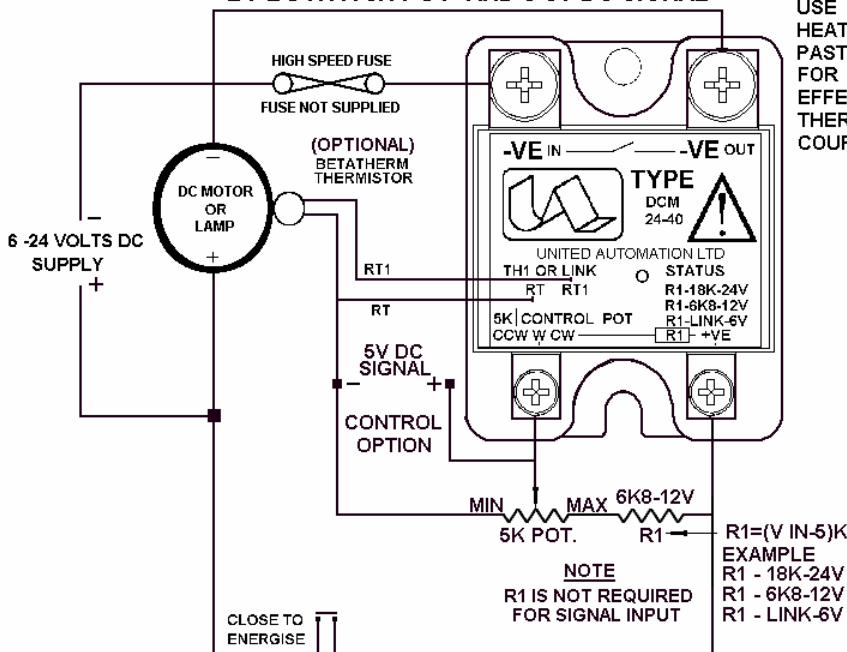- 6 to 24v DC supply voltage range.
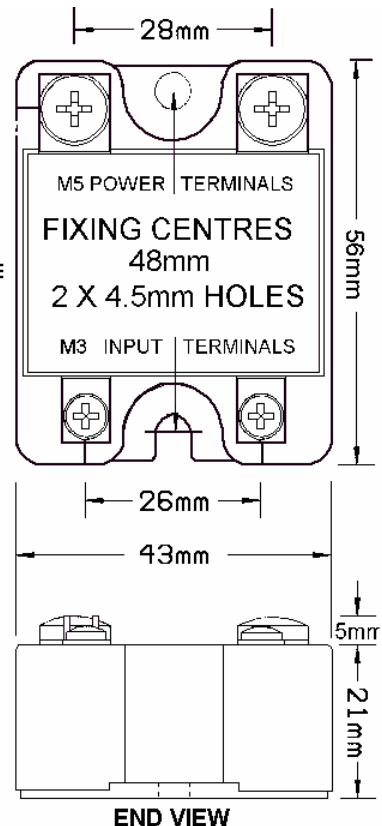
INSTALLATION

MOTOR CONTROL CONNECTIONS

WARNING
SWITCH OFF SUPPLY BEFORE COMMENCING ANY SERVICE WORK.
ALL SET POINTS CAN BE CONTROLLED
BY BOTH A 5K POT AND 0-5V DC SIGNAL

HIGH SPEED FUSE
FUSE NOT SUPPLIED

(OPTIONAL)
BETATHERM
THERMISTOR

DC MOTOR
OR
LAMP

6 -24 VOLTS DC
SUPPLY

5V DC
SIGNAL

CONTROL
OPTION

MIN   MAX   6K8-12V
5K. POT.   R1

CLOSE TO
ENERGISE

NOTE
R1 IS NOT REQUIRED
FOR SIGNAL INPUT

USE
HEATSINK
PASTE
FOR
EFFECTIVE
THERMAL
COUPLING

-VE IN —————— -VE OUT

TYPE
DCM
24-40

UNITED AUTOMATION LTD
TH1 OR LINK   O STATUS
RT RT1   R1-18K-24V
                  R1-6K8-12V
5K CONTROL POT   R1-LINK-6V
CCW W CW   R1- +VE

R1=(V IN-5)K
EXAMPLE
R1 - 18K-24V
R1 - 6K8-12V
R1 - LINK-6V

28mm

M5 POWER | TERMINALS

FIXING CENTRES
48mm
2 X 4.5mm HOLES

M3 INPUT | TERMINALS
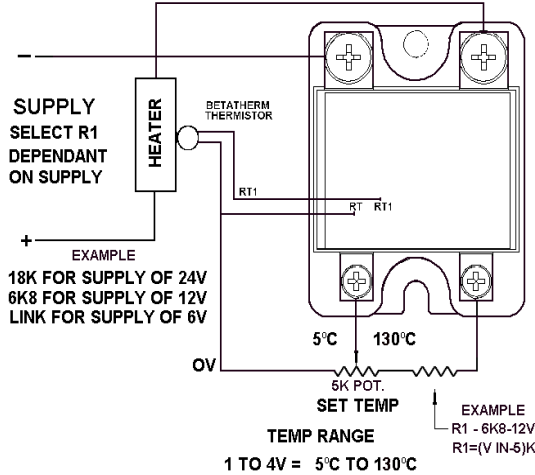
56mm

26mm
43mm

5mm
21mm
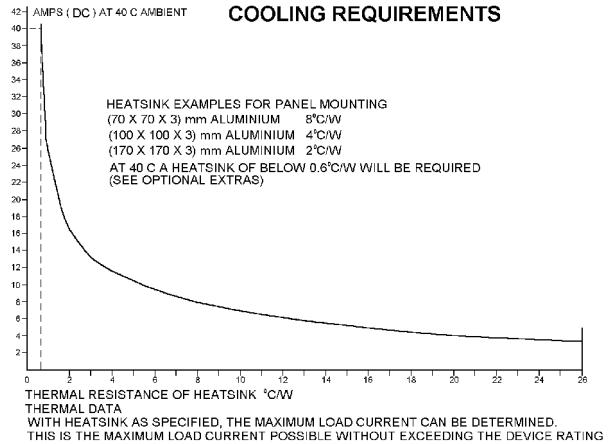
END VIEW

INSTALLATION

TEMPERATURE CONTROL CONNECTION FOR 12V SUPPLY

WARNING
SWITCH OFF SUPPLY BEFORE COMMENCING ANY SERVICE WORK.
ALL SET POINTS CAN BE CONTROLLED
BY BOTH A 5K POT AND 0-5V DC SIGNAL

SUPPLY
SELECT R1
DEPENDANT
ON SUPPLY

EXAMPLE
18K FOR SUPPLY OF 24V
6K8 FOR SUPPLY OF 12V
LINK FOR SUPPLY OF 6V

5°C   130°C

0V

5K POT.
SET TEMP

TEMP RANGE

1 TO 4V = 5°C TO 130°C

EXAMPLE
R1 - 6K8-12V
R1=(V IN-5)K

COOLING REQUIREMENTS

AMPS (DC) AT 40 C AMBIENT

HEATSINK EXAMPLES FOR PANEL MOUNTING
(70 X 70 X 3) mm ALUMINIUM   8°C/W
(100 X 100 X 3) mm ALUMINIUM   4°C/W
(170 X 170 X 3) mm ALUMINIUM   2°C/W
AT 40 C A HEATSINK OF BELOW 0.6°C/W WILL BE REQUIRED
(SEE OPTIONAL EXTRAS)

THERMAL RESISTANCE OF HEATSINK °C/W
THERMAL DATA
WITH HEATSINK AS SPECIFIED, THE MAXIMUM LOAD CURRENT CAN BE DETERMINED.
THIS IS THE MAXIMUM LOAD CURRENT POSSIBLE WITHOUT EXCEEDING THE DEVICE RATING

SPECIFICATIONS

Maximum DC system line voltage	24V dc
Unit limiting DC current	40A dc
Control input voltage range	0-5V dc
Control input current @ 5V typical	1mA dc
High frequency mode(no link across RT and RT1)	350Hz
Medium frequency mode (link RT and RT1)	180Hz
Optional for temperature control (terminals RT & RT1): Thermistor type- Betatherm - 10K3A1 5 - 130°C	
Unit operating temperature range	0 to 65°C
Unit storage temperature range	0 to 85°C

FUSING

It is recommended that semiconductor, fast acting type fuses or circuit breakers (Semiconductor-MCB) be used for unit/device protection. On initial operation some loads may need an increased Factor of Safety (F of S) for unit and/or device protection. See SRA Data sheet for further information.

CE MARKING

This product family carries a "CE" marking. For information see recommendation section and contact our sales desk. See Declaration of Conformity.

RECOMMENDATION

Other documents available on request, which may be appropriate for your applications.

CODE	IDENTITY	DESCRIPTION
X10229	RFI	Filter recommendation: Addressing the EMC directive.
X10213	ITA	Interaction: Uses for phase angle and for burst fire control.
X10255	SRA	Safety requirements: Addressing the Low Voltage Directive (LVD) including: Thermal data/cooling, "Live" parts warning, Earth requirements and Fusing recommendations.
AP02/4	COS	UAL Conditions of sale

NOTE: It is recommended that installation and maintenance of this equipment should be carried out by suitably qualified/trained personnel with reference to the current edition of the I.E.E. Wiring Regulations (BS7671). The regulations contain important requirements regarding the safety of electrical equipment. For International Standards refer to Directive I.E.C. 950.

ORDER CODE:

Optional extras include:-	State part number: DCM –24-40 Betatherm 10K3A1 bead sensor only –	Stock code D80005
	Betatherm 10K3A1 bead (type-X) sensor with 1m PTFE leads:	Stock code A26046
	Betatherm 10K3A1 enclosed (type-E) sensor with 1m PTFE leads	Stock code A26036
Further extras include:-	Heatsink assemblies for 40A capability; Heat sink paste; 5K potentiometer.	

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