

Schneider Service Manual

TWDLMDA20DRT

1. Description

Schneider Electric TWDLMDA20DRT

3. Product Information

Schneider Electric TWDLMDA20DRT
extendable PLC base Twido 24 V - 12 I 24 V
DC - 8 O solid state and relay
Main
Commercial Status Commercialised
Range of product Twido
Product or component
type
Modular base controller
Discrete I/O number 20
Discrete input number 12
Discrete input logic Sink or source
Discrete input voltage 24 V
Discrete input voltage
type
DC
Discrete output number 6 for relay
2 for transistor (source)
[Us] rated supply voltage
24 V DC
Number of I/O expansion module
7
Free slots 2
Use of slot 32 K or 64 K memory cartridge and 1 realtime clock
Complementary
Input voltage limits 20.4...26.4 V
Discrete input current 7 mA for I0.8 to I0.11
7 mA for I0.2 to I0.5
5 mA for I0.6 to I0.7
5 mA for I0.0 to I0.1
Input impedance 5700 Ohm for I0.6 to I0.7
5700 Ohm for I0.0 to I0.1
4700 Ohm for I0.8 to I0.11
4700 Ohm for I0.2 to I0.5
Filter time 45 µs for I0.6 to I0.7 at state 0
45 µs for I0.0 to I0.1 at state 0
40 µs for I0.8 to I0.11 at state 1
40 µs for I0.2 to I0.5 at state 1
35 µs for I0.6 to I0.7 at state 1
35 µs for I0.0 to I0.1 at state 1
150 µs for I0.8 to I0.11 at state 0
150 µs for I0.2 to I0.5 at state 0
Insulation between channel and internal logic 1500 Vrms for 1 minute
Insulation resistance between channel None
Discrete output voltage 24 V
Output voltage limits 20.4...28.8 V
Current per channel 0.36 A for transistor output
2 A for relay output
Current per output common 8 A for relay output
1 A for transistor output
Response time 5 µs for Q0.0 to Q0.1 at state 1
5 µs for Q0.0 to Q0.1 at state 0
[Ures] residual voltage ≤ 1 V at state 1
Leakage current 0.1 mA
Output overvoltage protection 39 V
Tungsten load 8 W
Surge current ≤ 5 A for relay output
Discrete output current 300 mA
Minimum load 0.1 mA

Contact resistance $\leq 40000 \mu\text{Ohm}$

Load current 2 A at 30 V DC resistive load, operating rate = 30 cyc/mn for relay output

2 A at 30 V DC inductive load, operating rate = 30 cyc/mn for relay output

2 A at 240 V AC resistive load, operating rate = 30 cyc/mn for relay output

2 A at 240 V AC inductive load, operating rate = 30 cyc/mn for relay output

Mechanical durability ≥ 20000000 cycles for relay output

Electrical durability ≥ 100000 cycles for relay output

Current consumption 5 mA at 5 V DC at state 0

40 mA at 24 V DC at state 1

30 mA at 5 V DC at state 1

I/O connection Removable screw terminal block

Input/Output number ≤ 244 , HE-10 connector with I/O expansion module

≤ 188 , spring terminal block with I/O expansion module

≤ 132 , removable screw terminal block with I/O expansion module

Supply voltage limits 20.4...26.4 V

Protection type Power protection with internal fuse

Power consumption in W ≤ 19 W (base + 4 expansion module)

Inrush current ≤ 50 A for power supply

≤ 1 A for transistor output

Insulation resistance $> 10 \text{ MOhm}$ at 500 V, between supply and earth terminals

$> 10 \text{ MOhm}$ at 500 V, between I/O and earth terminals

Program memory 3000 instructions

6000 instructions with 64 K memory cartridge

Exact time for 1 K instruction 1 ms

System overhead 0.5 ms

Memory description Internal RAM, floating, trigonometrical

Internal RAM, double words, no floating, no trigonometrical

Internal RAM, 3000 internal words, no floating, no trigonometrical

Internal RAM, 256 internal bits, no floating, no trigonometrical

Internal RAM, 128 timers, no floating, no trigonometrical

Internal RAM, 128 counters, no floating, no trigonometrical

Battery type Lithium for internal RAM, autonomy: 30 days, charging time = 15 h, battery life = 10 yr

Integrated connection type Non isolated serial link mini DIN, Modbus/character mode master/slave RTU/ASCII (RS485) half duplex, 38,4 kbit/s

Power supply

Counting input number 2 channel(s) at 5000 Hz 16 bits

2 channel(s) at 20000 Hz 32 bits

Positioning functions PWM/PLS 2 channel(s) at 7 kHz

Analogue input number 1

Analogue input range 0...10 V

Analogue input resolution 9 bits

Input impedance 100000 Ohm

Complementary function Event processing

PID

Analogue adjustment points 1 point adjustable from 0...1023

Status LED 1 LED per channel for I/O status

1 LED green for RUN

1 LED green for PWR

1 LED for STAT

1 LED for ERR

CAD overall width 48 mm

CAD overall height 95 mm

CAD overall depth 70 mm

Terminals description PLC n°1 (0)IN_DIS#0

(1)IN_DIS#1

(10)IN_DIS#10

(11)IN_DIS#11

(2)IN_DIS#2

(3)IN_DIS#3

(4)IN_DIS#4

(5)IN_DIS#5

(6)IN_DIS#6

(7)IN_DIS#7

(8)IN_DIS#8

(9)IN_DIS#9

(COM)COM_NEG#0-11

ALT

TB_1

Terminals description PLC n°2 (0)IN_DIS#0

(1)IN_DIS#1

(10)IN_DIS#10

(11)IN_DIS#11

(2)IN_DIS#2

(3)IN_DIS#3

(4)IN_DIS#4

(5)IN_DIS#5

(6)IN_DIS#6

(7)IN_DIS#7

(8)IN_DIS#8

(9)IN_DIS#9

(COM)COM_POS#0-11

ALT_1

TB_1

Terminals description PLC n°3 (0)OUT_DIS#0

(1)OUT_DIS#1

(2)OUT_DIS#2

(3)OUT_DIS#3

(4)OUT_DIS#4

(5)OUT_DIS#5

(6)OUT_DIS#6

(7)OUT_DIS#7

(COM0)COM0_POS#0-1

(COM1)COM1#2-4

(COM2)COM2#5-6

(COM3)COM3#7

(NC)UNUSED

(V-)PW_NEG

TB_2

Product weight 0.185 kg

Environment

Immunity to microbreaks 10 ms

Dielectric strength 500 V for 1 minute, between supply and earth terminals

1500 V for 1 minute, between I/O and earth terminals

Product certifications CSA

UL

Marking CE

Ambient air temperature for storage -25...70 °C

Ambient air temperature for operation 0...55 °C

Relative humidity 30...95 % without condensation

IP degree of protection IP20

Operating altitude 0...2000 m

Storage altitude 0...3000 m

Vibration resistance 4 gn, 25...100 Hz mounting on: plate or panel with fixing kit

1.6 mm, 2...25 Hz mounting on: plate or panel with fixing kit

1 gn, 57...150 Hz mounting on: 35 mm symmetrical DIN rail

0.075 mm, 10...57 Hz mounting on: 35 mm symmetrical DIN rail

Shock resistance 15 gn for 11 ms