minutes (10s place)   minutes (1s place)   seconds (10s place)   seconds (1s place)   tenths display

OG1B
OR
OR Gate

OG1A
OR

S2
GND
Vcc
reset

DC5   DC4   DC3   DC2   DC1

R9(2) R9(1) R0(2) R0(1) CKB
GND   VCC   CKA
Vcc

AG1C
AND
AND gate

NG2

3AGB

NG1

3AGA

AG1B
AND
AND gate

AG1A
AND
AND gate

BCD5   BCD4   BCD3   BCD2   BCD1
BCD decoder   BCD decoder

GND D C B A LT RB1 VccRB0

7SG5   7SG4   7SG3   7SD2   7SD1
7-seg disp   7-seg disp   7-seg disp   7-seg disp   7-seg disp

GND dp g f e d c b a   Vcc

GND

S1
pause

T1
555 timer
10nF

Vcc OUT CTRL
RESET DIS THR TRG GND

GND

V1
DC 15

Vcc

R1
8.2K

R2
56K

C1
1.2uF

Title

Size
A3

Number

Revision

Date: 10/30/2025
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Sheet of
Drawn By:

Comment	Description	Designator	Footprint	LibRef	Quantity
DM7411N		3AG		3AND gate	1
7-seg disp		7SD1, 7SD2, 7SG3, 7SG4, 7SG5		7-seg disp	5
AND gate		AG1		AND gate	1
BCD decoder		BCD1, BCD2, BCD3, BCD4, BCD5		BCD decoder	5
Cap	Capacitor	C1, C2	RAD-0.3	Cap	2
Decade counter (SN76LS90N)		DC1, DC2, DC3, DC4, DC5	SN74LS90N	Decade counter (SN76LS90N)	5
NOT gate		NG1, NG2		NOT gate	2
OR Gate		OG1		OR Gate	1
Res1	Resistor	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39	AXIAL-0.3	Res1	39
pause	Single-Pole, Single-Throw Switch	S1	SPST-2	SW-SPST	1
reset		S2	Switch	Switch	1
555-timer		T1		555-timer	1
DC 15	Voltage Source	V1		VSRC	1