

NATIONAL TIME is pleased to reintroduce the impulse time system- with today's high tech performance! Microprocessor technology has replaced the slow, troublesome spring/ratchet/solenoid engagement designs currently offered by other manufacturers. National's revolutionary Rotary Drive time system can instantly correct all of the building clocks to the exact hour and minute at any time of the day! With our on demand instant time correction, you no longer have to wait up to twelve hours or perform confusing, tedious sequences of manual stops, starts and resets. We give you the correct time when you need it --- NOW! For systems not incorporating the National MC100, On-Demand correction may be achieved using the PS-3-URT-OD Power supply or URTOD-HH module. See C-429 and C-434. Rotary Drive guarantees to outperform all existing clock technology without sacrificing the unsurpassed durability you have come to expect from National Time's synchronous motor drive systems.

The 3WS series will emulate most existing synchronous clock operation without the frailties of solenoids, ratchets, switches or levers. See Compatibility List bulletin C-430. Each clock is equipped with an all metal case, convex glass crystal, and white polystyrene dial having black markings and hands. A sway-proof hanger plate is furnished that securely holds clock to wall. Cases are attractively finished in Powder Gray enamel. Other finishes and shatterproof lens are available upon request. Shatterproof lens now standard on 12" round. Refer to Bulletin C-323 for classic dial series.



Case Style FR
Flush Round



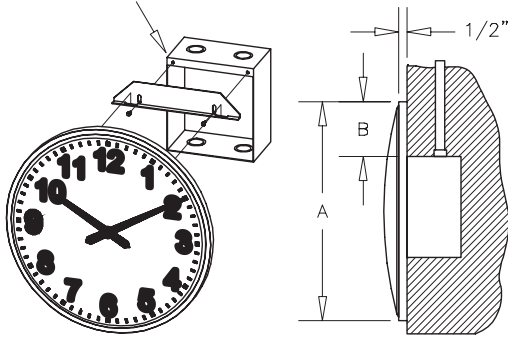
Case Style FQ
Flush Square

Features:

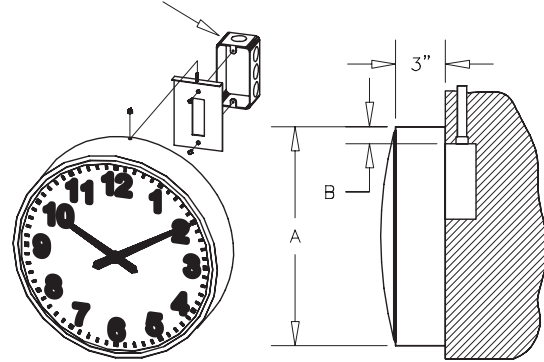
- Revolutionary Rotary Drive Design
- Microprocessor Controlled
- Lowest Power Consumption
- On-Demand Instant Correction
- Universal Reset Operation
- Swift, Smooth, Ratchet-free Operation
- Compatible with Existing 2 & 3 Wire Minute Impulse Systems
- Compatible with Existing 3-Wire Synchronous Clocks

Flush/Surface Mount Clocks

#143 Wall Box
(7"H x 6-1/2"W x 3-1/4"D)
(Order Separately)



Single Gang Outlet Box
(Supplied by others)



| Flush Mount Dial Size | Dim A Outside Dia. | Dim B Box top to Clock top |
|-----------------------|--------------------|----------------------------|
| 10" Round | 11-1/4" | 2" |
| 12" Round | 13" | 3-1/4" |
| 12" Square | 12-1/2" | 2-3/4" |
| 16" Round | 16-1/2" | 4-3/4" |
| 24" Round | 24" | 8" |

| Surface Mount Dial Size | Dim A Outside Dia. | Dim B Box top to Clock top |
|-------------------------|--------------------|----------------------------|
| 10" Round | 11-5/8" | 1-1/8" |
| 12" Round | 13-7/16" | 13/16" |
| 12" Square | 12-1/2" | 5/8" |
| 16" Round | 17" | 3/4" |
| 24" Round | 24" | 11/16" |

Case Style:

F=Flush
S=Surface
D=Double Face

Shape:

R=Round
Q=Square

Rotary Drive
Movement

FR-12RD-MODEL NO.-SP

Size Insert Model number from below

SP= Shatter-Proof convex crystal
(Leave Blank for Standard Glass)
-SP now standard on 12" Round

| Model No. | Description |
|------------------|---|
| 2WI-00 | 2-Wire Impulse; 24VDC; Reverse Polarity; On Demand resets |
| 3WI-00 | 3-Wire Impulse; 24VDC; On Demand resets |
| 2WS-03 | 2-Wire Synchronous; 24VAC; On Demand Resets; 12:00am/pm resets |
| 3WS-00 | 3-Wire Sync.; 24VAC; On Demand resets or 59th or 00 minute Synchronous Compatible |
| Part No. | |
| D2T-120/24-2W | 120VAC to 24VAC Transformer for Single Face 2WS Clock |
| D2T-120/24-3W | 120VAC to 24VAC Transformer for Single Face 3WS Clock |
| D3.5T-120/24-D2W | 120VAC to 24VAC Transformer for Double Face 2WS Clock |
| D3.5T-120/24-D3W | 120VAC to 24VAC Transformer for Double Face 3WS Clock |

Compatibility:

Operating Voltage:

May be used in-line with existing clock types. On Demand resets require National's Master. On synchronous systems, On Demand resets will not effect existing clocks. On impulse systems, existing impulse clocks cannot occupy the same circuit if On Demand resets are desired.

Synchronous Resets: 8 second hour, 14 second 12hr; 25 second hour, 25 minute 12hr; 2 second 12hr; 55 second hour. See C-430 for compatibility list.

24VDC versions: 19-32VDC @ 150mA; Filtered DC supply required for 24VDC On Demand resets.

24VAC versions: 17-28VAC @ 3.8W;

120VAC versions 102-132VAC @ 3W (Require D2T-120/24 or D3.5T-120/24 Transformers)

See Bulletin C-430 For Compatibility List. Consult Factory for other reset Compatibilities or Custom protocols

U.S. Patents 5,282,180; 5,442,599;