

GENERAL NOTES

XXV - SPECIFICATION FOR A 2 THRU 4 PHASE DIGITAL SOLID STATE TRAFFIC TIMER - Continued

I) OPERATING MODE SWITCHES:

Each vehicle phase module shall include a selector switch to provide the following operational variations.

Recall Extendible - this position shall cause the phase to place an artificial call on the timer which guarantees the Initial plus Extension. Once into Extension the phase will operate and time based on actual demand.

Recall Maximum - this position shall cause the phase to place an artificial call on the timer and maintain that call through Initial and out to Maximum Termination. If at Maximum Termination, no actual opposing demand is present the timer shall rest in green in the phase.

Memory Off - this position eliminates the memory of all vehicle calls.

Memory On - this position shall be used for normal operation.

Vehicle phase modules equipped with pedestrian timing and Exclusive Pedestrian modules shall include a two position switch, which, in the "On" position will place the phase on "Recall-Pedestrian". This mode will place an artificial pedestrian call on the phase. Once pedestrian timing is completed, the phase will function normally through Extension timing.

J) PHYSICAL DESCRIPTION:

The following are minimum physical design requirements for all timers supplied under this specification:

Timer shall be housed in a compact portable aluminum enclosure with all timing devices, connectors, operating switches, etc. necessary for normal programming located on the timer front panel. *The enclosures shall fit neatly into the specified cabinets together with all accessories.*

All printed circuit boards shall be provided on plug-in assemblies.

All phase modules and printed circuit boards shall be designed to facilitate identification of components by component designation numbers. All components shall be soldered to printed circuit boards.

Printed circuit boards shall be 1/16" minimum thick glass epoxy using copper track with a minimum weight of two ounces per square foot.

All connectors shall be round threaded MS type each uniquely keyed to prevent intermixing.

All modules and printed circuit board assemblies shall be interchangeable for like functions, but shall be mechanically keyed to prevent insertion of assemblies with unlike functions.

Phase and interval sequencing logic circuitry shall be provided on separate plug-in modules removable from the front.

All maintenance shall be accomplished from the front.

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Suitable extensions shall be provided to test printed circuit modules while connected in the unit and functioning.

Power supply shall be removable from the front.

K) ENVIRONMENTAL PROTECTION:

The timer shall be suitable for use in a cast or sheet metal cabinet mounted out of doors on a ground base or pole depending on requirements. The following protections shall be built into the timer:

Electrical - the timer shall operate at 115 volts AC, + 10%. To prevent electrical noise from disrupting timer operations, all timer inputs shall be capacitor filtered and include power line surge protection. A power interruption of less than 0.5 seconds shall not affect the continued cyclic operation of the timer. Power failures longer than 0.5 seconds shall cause the timer to re-initialize when power is resumed. The timer power supply shall be designed to prevent over voltage from damaging any internal timer components.

Temperature - the timer shall operate satisfactorily over the range of -30°F to +165°F.

Humidity - the timer shall operate satisfactorily up to 95% relative humidity and shall be capable of passing MIL-E-005272C.

Vibrations - the equipment shall be capable of withstanding a .5G acceleration at any resonant frequency from 5 to 30 hertz in any of the three mutually perpendicular planes.

Dust Resistance - timer shall be fully enclosed to deter the entrance of dust and dirt. (See Sheet No. 14 for Payment) **

XXVI - SPECIFICATION FOR DIAL COORDINATING UNITS

A) PURPOSE:

The purpose of this specification is to set forth minimum design and operating requirements for Dial Coordinating Units for use with actuated traffic controllers.

B) GENERAL:

All component parts of the Dial Coordinating Unit shall be of high quality, meeting the acceptable standards of good engineering practices.

The coordinating unit shall operate satisfactorily at any temperature between -30°F and +165°F inside ambient.

C) POWER:

The coordinating unit shall be designed to operate from a 115 volt, 60 Hz single phase power source.

The coordinating unit shall function satisfactorily at any voltage, within plus or minus 10% of the rated voltage.

The three dial coordinating unit shall consume no more than 5 watts.

D) DESIGN:

1) Dial Unit:

Dial Coordinating Units shall be expandable, having provision for a maximum of 3 dial units.

Each dial unit shall be plug-connected and shall be so constructed that it may be installed or removed without the use of tools.

The timing dial of each dial unit shall be driven by a self-starting sealed, synchronous motor requiring no lubrication. This motor shall have ample torque to drive the dial at constant speeds under all normal operating conditions.

The dial unit shall have a manually operated reset switch normally used to disconnect the dial reset contacts from the motor brake relay (for secondary dial coordinating units) and for de-energization of the motor (for master dial coordinating units). This switch may readily be changed to an on-off motor switch at secondary dial coordinating units.

On the front of each timing dial there shall be calibrated scale for the setting of each function such as yield and force-off. The dial shall at all times show a visual indication of the percentage of the time cycle allocated to each interval.

The timing dial shall have an offset scale for setting the offset relationship between master and secondary dial coordinating unit within an interconnected system.

Each dial shall be equipped with color coded keys which shall snap in and out easily without tools and shall be self-locking.

The dial shall be equipped with an easily removable time cycle gear, available 30-120 seconds in 5 second steps. By specifying a dial equipped with a 1-RPM motor this range can be increased to 60-240 seconds in 10 second steps.

Each dial unit shall have a visual indication of the time cycle set on the dial.

Each dial unit shall be equipped with a five contact block wired for the following function. Three reset contacts, one split and one interlock (yield).

If specified, each dial unit shall be equipped with a seven contact block wired for the following functions. Three reset contacts, one split, one interlock (Yield) and two contacts that may be used as required (additional splits and/or resets).

2) Dial Coordinating Unit:

All dial coordinating units shall have provision to utilize one of three dials.

Dial coordinating units shall be for master, interruptor or secondary use as specified.

Dial coordinating units shall have the capability of various combinations of offsets, splits and force-offs (depending upon the type of dial unit installed as shown in the following table: