

Type J4S Singlephase Watt-hour Meter

The type J4S singlephase watt-hour meter, for socket mounting services, has design characteristics providing close initial calibration, long term stability and maintenance-free performance.

Used for revenue billing, J4S meters are available for measuring kilowatt-hours on self-contained and transformer-rated services.

Construction Features

Baseplate Assembly

The J4S has a ruggedly designed, one-piece, molded baseplate made of arc-tracking resistant phenolic material. A fiber glass filter removes dust particles from air passing through the filter and reduces condensation in the meter. Arc gaps are provided on self-contained meters for surge protection to 5000 volts between the arc strap and current coil. A movable fifth terminal feature is available for transformer-rated versions at either the 6 o'clock or 9 o'clock position.

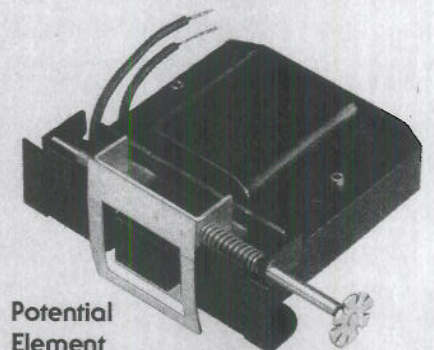
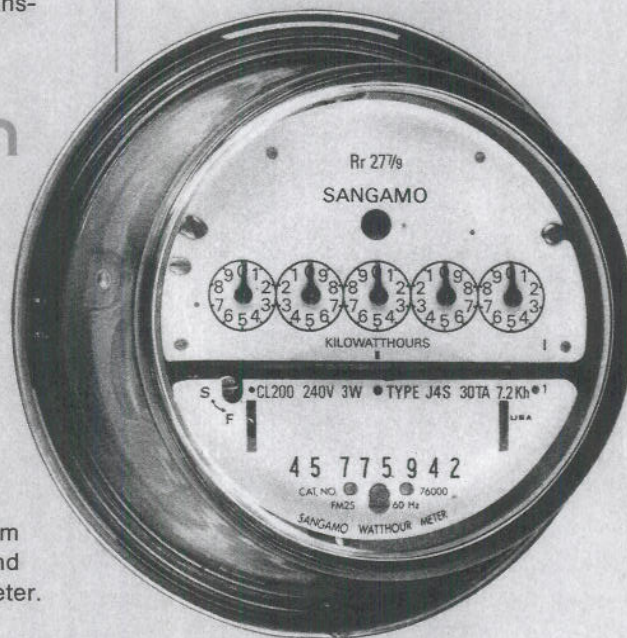
Frame Assembly

A one-piece, die-cast frame holds all parts in exact alignment to maintain accuracy throughout the service life of the meter. The aluminum alloy frame has an alodine finish for maximum protection against corrosion. The frame is die-cast around the damping magnets and temperature compensators. The screw type full load adjustment is readily accessible from the front of the meter and allows an adjustment of up to 8%.

Potential Element Assembly

The potential coil, which has many turns of fine wire wound on a molded nylon bobbin, is encapsulated with high quality polypropylene. This quality built coil combines low watts-loss with high dielectric strength, moisture protection and high voltage breakdown level (10,000 volts impulse). Silicon steel laminations, riveted together, form the core. Lead insulation is Hypalon for maximum protection against

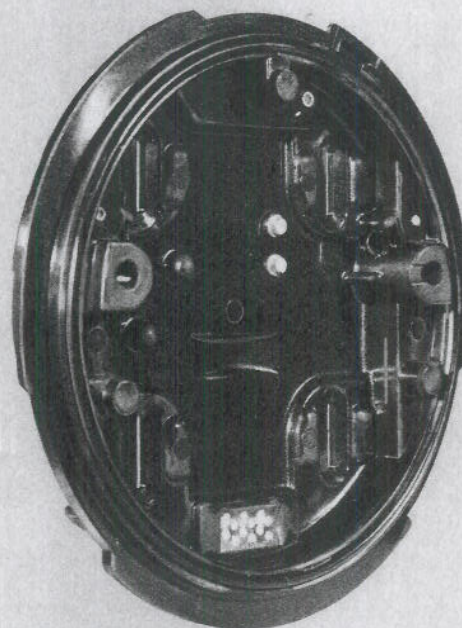
deterioration from UV, temperature and humidity. The light load vane, which is designed to provide fine, even adjustment on a consistent basis, is spring loaded onto a light load adjustment screw. Two expanding dowel pins with screws hold the potential element in alignment with the frame insuring stability. The potential element design provides maximum immunity from stray magnetic fields and external influences either from service conditions or from meter test equipment.



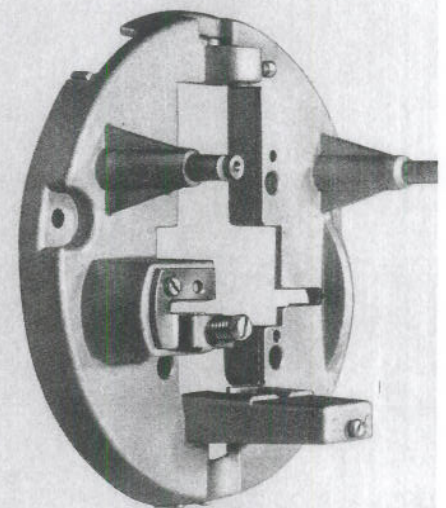
Potential
Element
Assembly

Current Element Assembly

The current coil consists of a few turns of copper wire with a large cross section area, capable of carrying continuously rated class current. Current coils are insulated with fluidized epoxy resin (Whirlclad) to an insulation level of 10,000 volts rms.

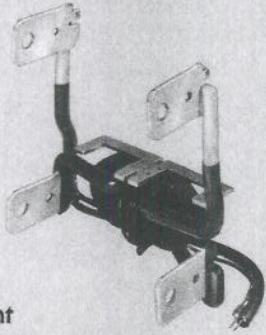


Baseplate
Assembly



Frame
Assembly

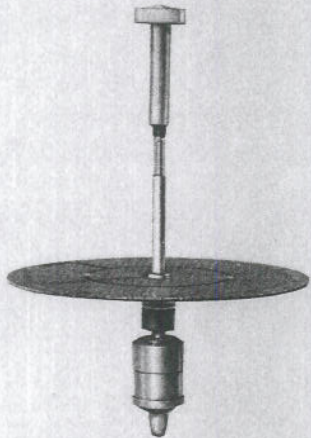
The core is constructed of silicon steel laminations that produce a superior load curve. Current coil terminals are tin plated copper for corrosion resistance and are brazed to the current coils. The power factor adjustment is a soldered closed loop wrapped through the window of the core. Expanding dowel pins and screws hold the current element assembly in alignment with the frame providing consistent meter stability.



Current Element Assembly

Disk and Spindle Assembly

The moving element is a solid aluminum disk mounted on a vertical aluminum spindle. The assembly is magnetically supported by cylindrical barium ferrite oxide magnets, which are positioned with like poles facing. These magnets offer



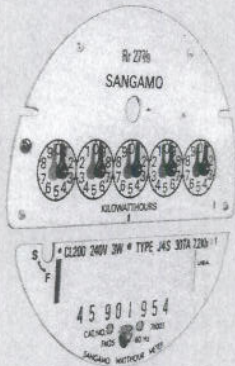
Disk & Spindle Assembly

high resistance to demagnetization from current surges. Two anti-creep holes in the disk prevent creeping under no-load conditions. These same holes are used for counting disk revolutions in photo-electric testing. Pivots, guides and guide bearings that control disk movement are made from material such as cobenium for a very low friction system. No lubrication is required.

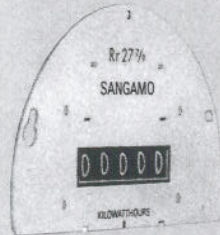
Register Assembly and Nameplate

The clock register has large, easy to read dials, positioned in a straight line. The register is mounted on the frame of the meter. It has a take-off gear that is driven by the worm gear cut in the disk spindle. Mesh adjustment can be checked through an inspection hole in the front dial plate. Pointers on the register are spring fitted to the shaft and may be repositioned to reset the register.

The cyclometer register has large, easy to read numbers on wheels that revolve to indicate kilowatthours. The rapid advance of the numerals is accomplished by an energy storage device enclosed in the first recording wheel; this device operates on a gravity principle. The cyclometer register features positive and dependable operation, all metal parts for long life, easy resetting and white-on-black numbers.



Clock Register

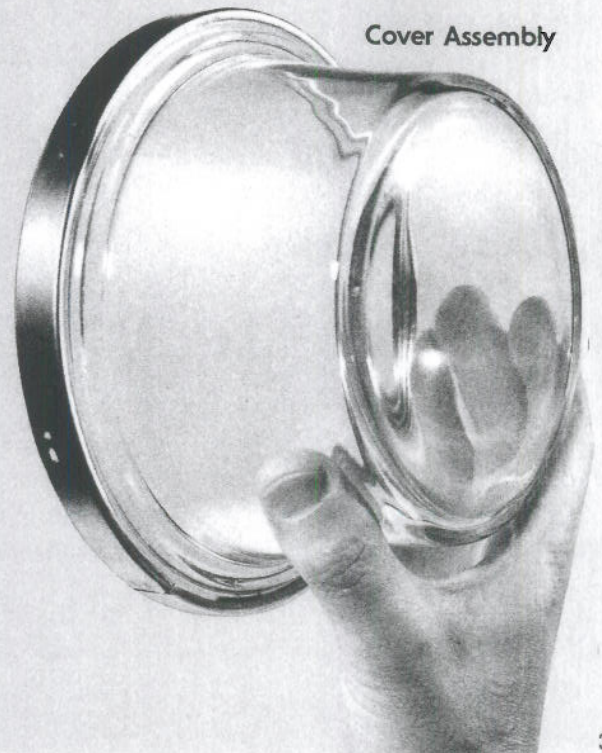


Cyclometer Register

The meter nameplate supplies all required meter information such as identification and ratings. It is provided with a factory serial number, but has provisions for customer identification serial numbers as well.

Cover Assembly

Glass and polycarbonate cover assemblies are available for the J4 meter. These covers have easy-to-grasp, concave sides, and a flat viewing surface of good optic quality for clear reading. The cover is secured to the base by a stainless steel ring with welded stainless steel clips. A tubular gasket provides a positive, weather-tight seal between the base and cover.



Cover Assembly