



TRADE AND COMMERCE
CANADA

STANDARDS BRANCH

OTTAWA December 27, 1962.

TYPE APPROVAL

SANGAMO TYPE "P20" 2- AND 2½-ELEMENT
AND TYPE "P30" 3-ELEMENT POLYPHASE WATTHOUR METERS

The apparatus specified and illustrated herein has been duly approved by the Standards Branch under the provisions of the Electricity Inspection Act, Chapter 94, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: Type "P20" 2- and 2½-Element and Type "P30" 3-Element Polyphase Watthour Meters, manufactured by the Sangamo Company Limited, Leaside, Toronto 17, Ontario.

Rating of Apparatus:

Elements	Current Range (amperes)	Volts	Kh	Register Ratio Rr		
				4 dials x 1	4 dials x 10	5 dials x 1
2	.12-10	120	1.2	166-2/3	-	-
		*240	2.4	83-1/3	-	-
		480	4.8	41-2/3	-	-
	1.2-100	600	6.0	33-1/3	-	-
		#120	7.2	27-7/9	277-7/9	27-7/9
		*240	14.4	-	138-8/9	13-8/9
2½ wye	.12-10	120	1.8	111-1/9	-	-
		240	3.6	55-5/9	-	-
	1.2-100	120	10.8	-	185-5/27	18-11/27
		240	21.6	-	92-16/27	9-7/27
	.12-10	240	2.4	83-1/3	-	-
		1.2-100	240	14.4	-	138-8/9
3	.12-10	120	1.8	111-1/9	-	-

Frequency 50 and 60 cycles

* 2-element 240-volt 60-cycle meters are approved for use on 277 volts without recalibration.

2-element 120-volt 1.2-100 ampere rating is available only as 'P20A' with modified 'A' base mounting; all other ratings available either with 'S' socket base, or 'P' die-cast base with large terminal block, with a maximum of 8 currents and 6 potentials.

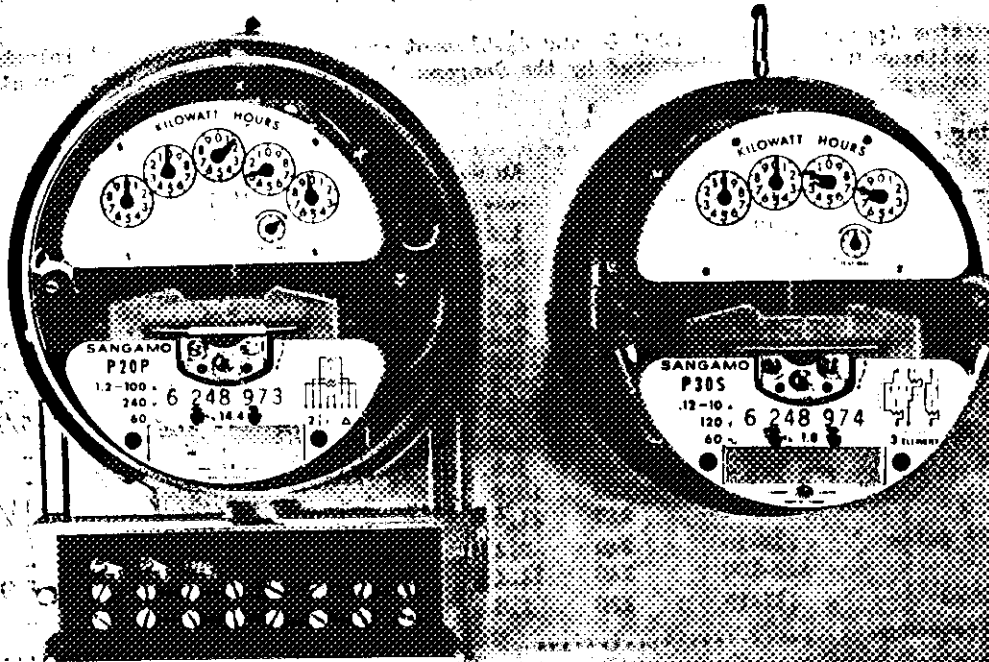
The suffix 'A', 'S' or 'P' following the Type "P20" and "P30" indicates the type of base in the conventional manner.

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SANGAMO POLYPHASE WATTHOUR METERS

(Type "P20P" 2-Element)

(Type "P30S" 3-Element)



Description: The types "P20" and "P30" meters are of the single disc type used for energy measurement on all the usual polyphase services. In the 2- and 2½-element construction the two electromagnet assemblies are placed diametrically opposite, one at each side of the meter, and the disc is of solid aluminum. In 3-element meters the third electromagnet is placed at the back of the meter at 90 degrees to the other two and the disc is laminated.

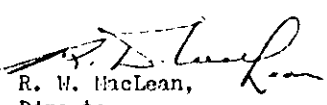
Each element consists of separate current and voltage coil assemblies, which are secured to the grid with screws. Voltage coils are enclosed in an acetate shell, providing an insulation level of 10,000 volts r.m.s. High capacity current coils are open windings insulated with epoxy resin applied by a fluidized process. Current coils of the transformer type are wound of round wire with a fiberglass coating impregnated with a hard varnish. The rotor lower bearing is of the magnetic flotation type as used in the type "CJ3" meter. The lower stationary magnet is longer than that of the "CJ3" because of the greater rotor weight. The guide pins and graphite guide bearings are the same as the "CJ3". Each element has its individual low load, inductive load and element balance adjustments, all screw-driver operated. For full load there is only the one adjustment on the magnet.

Meter speed is controlled by a pair of Alnico damping magnets clamped in a die-cast housing, which fits into a slot in the grid where it fits against a stop so that it can be removed and replaced without disturbing the calibration.

The socket-type base is made of sheet aluminum to which the sealing gasket is attached, and the glass cover rim is made of stainless steel. The sealing pan on the type "P30S" meters is at the bottom of the base and the glass cover must be installed so that the holes through which the sealing wire passes are also at the bottom. This position gives greater clearance between the sealing wires and the current-carrying parts.

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