CANADA

DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

E-31

OTTAWA March 23, 19 66.

NOTICE OF APPROVAL

FOR

SANGAMO TYPES "NBDP" AND "NBDS"

POLYPHASE COMBINATION WATTHOUR AND THERMAL DEMAND METERS

Apparatus

2-Element

Voltages:	115, 120, 230, 240, 277, 345 460, 480, 575 and 600 volts				
Current Ranges (amperes):	0.12-75,	0.25-15,	0.5-40,	1.2-75,	2.5-150
KW full scale:	1.5	3.0	7.5	15	30
Demand scale, watts:	1500	1500	1500	1500	1500
Meter Multiplier (Watthour and demand):	1	2	5	10	20
Disc Constant (Kh):	0.6	1.2	2.4	6.0	12
Frequency	: 60 and 50 Hz				
Register Type	: Clock, 4 dial with test dial				
Register Ratio	: 333-1/3	333-1/3	416-2/3	333-1/3	333-1/3

NOTE: Values for: KW full scale, Meter Multiplier and Kh are given for 115 and 120 volts rating.
For; 230, 240 and 277 use multiplier of 2
345 " " 3
460 and 480 " " 4
575 and 600 " " 5

2½-Element, Wye

Voltages	:	120	240	277 and	345 volts
Current Ranges (amperes)	:	0.12-85	0.25-20	0.5-40	1.2-85
KW full scale	:	3	7.5	15	30
Demand scale watts	:	1500	1500	1500	1500
Meter Multiplier (watthour and demand):		2	5	10	20
Disc Constant (Kh)	:	0.9	1.8	3.6	9
Frequency		60 and 50 Hz			
Register Type	:	Clock 4 dial with test dial			
Register Ratio	:	444-4/9	555-5/9	555-5/9	444-4/9

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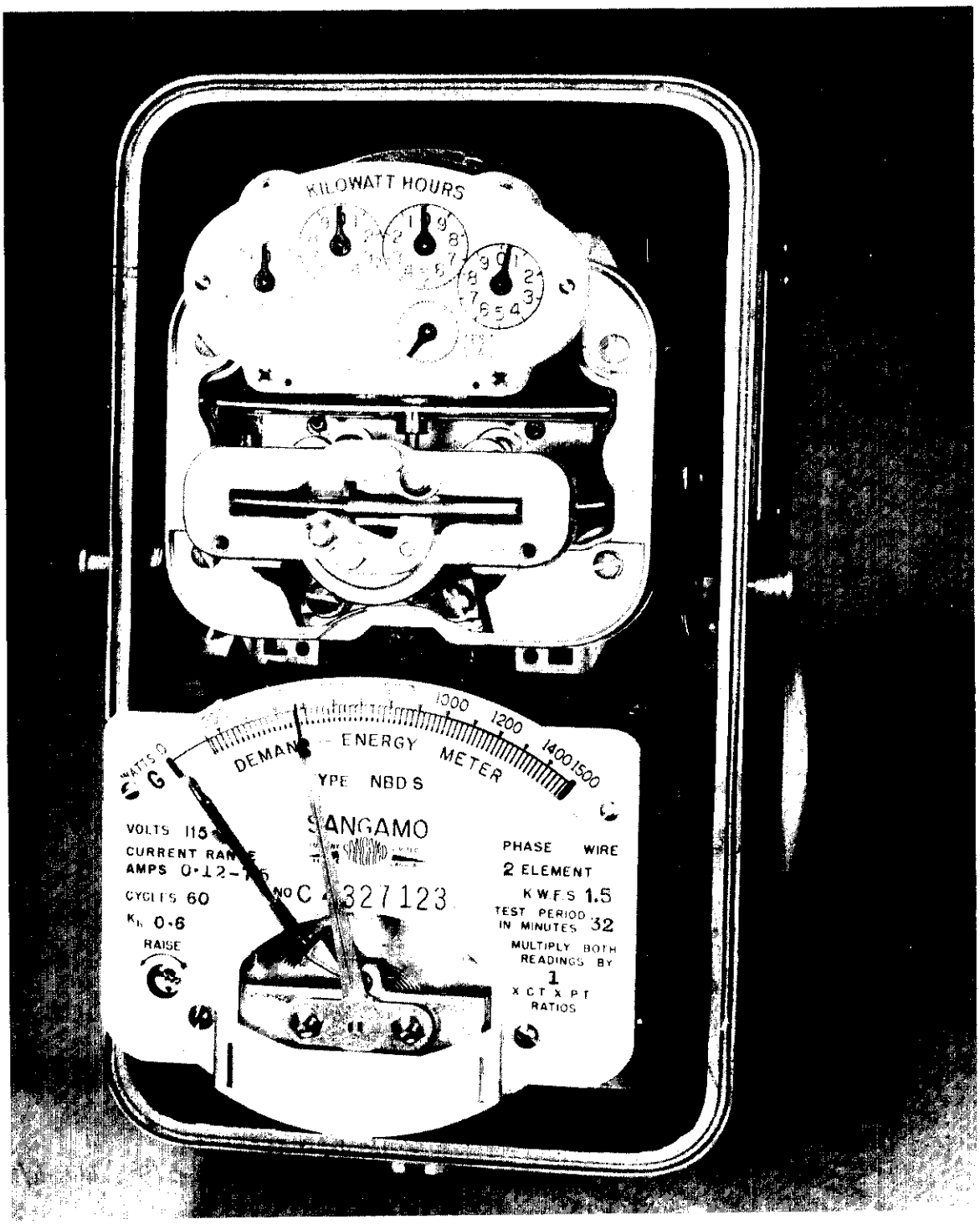
SANGAMO TYPES "NBDP" AND "NBDS"

POLYPHASE COMBINATION WATTHOUR AND THERMAL DEMAND METERS



NOTE: Values for KW full scale, Meter Multiplier and Kh are given for 120 volts
For 240 and 277 volts multiply by 2
For 345 volts multiply by 3

2½-Element, Delta

Voltages	: 115/230 or 120/240			
Current Ranges (amperes)	: 0.12-7.5,	0.5-37.5,	1.2-75,	1.5-100
KW full scale	: 3	15	30	40
Demand scale watts	: 1500	1500	1500	1000
Meter Multiplier (watthour and demand)	: 2	10	20	40
Disc Constant (Kh)	1.2	4.8	12	12
Frequency	: 60 and 50 Hz			
Register Type	: Clock 4 dial with test dial			
Register Ratio	: 333-1/3	416-2/3	333-1/3	666-2/3

DEMAND TIME, Response Periods,
all ratings 10 and 16 minutes
Register ratio does not change with voltage.

Description

This Circular supersedes Circular SD-EA.282 of January 28, 1957 and extends the voltage ratings to include 277 and 345 volts.

The construction of the added meters is the same and only differs in the wire size and the number of turns on the watthour potential coils and the potential transformers of the thermal demand section, which have been changed proportionally with the voltage change in order to keep the voltage flux density and the performance of the meter unchanged.

The type "NBD" meter is a combination, in one enclosure, of a type "NB" polyphase watthour meter and a polyphase thermal watt demand meter.

Type approvals relating to the "NB" watthour meters are:
SD-EA.133, SD-EA.147 and SD-EA.240

The watthour element is essentially the same as in the various "NB" meters already approved, but slightly modified to improve the construction. The effect on performance is negligible.

The thermal demand section is essentially the same as used in the Sangamo types "EDA" and "EDS" combination watthour and demand meters and carries the same adjustments. The driven pointer has been made straight instead of offset to improve balance. Both the current and demand potential transformers are of improved design. Current transformers are used in all capacities so as to utilize the matching characteristics of current and potential transformers.

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Type Approval Circulars relating to "ED" meters are:
NRC-166 and SD-EA.5.

The meter is supplied with two kinds of terminal connections.
Bottom-connected "NBDP" which has a moulded block with provision for a maximum of eight current and six potential terminals to cover the various self-contained and transformer types. Unused openings are blocked with insulating inserts.
The socket-type "NBDS" is available as self-contained and for use with transformers.

The enclosure for bottom-connected meter is a die-casting with a rectangular glass cover secured in place by locking levers.

The socket-type base is a sand casting similar to the die-casting, using the same cover.

The appearance of both versions is the same, but the light load adjustment of a bottom element, corresponding to the left-hand input terminals, of the bottom connected meter is located on the right-hand side of the meter.

Approval granted to: Sangamo Company Limited,
Leaside,
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Ref: SL-100-552A