NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No PS109

Pattern: Proeda Fuel Usage Recorder Model S31

Submittor: Proeda Australasia Pty Ltd,
11 Whiting Street,
Artarmon, New South Wales, 2064.

1. Description of Pattern

The pattern is a fuel usage recorder designed to be attached and driven from the litre shaft of a Veeder-Root Model VR101 driveway flowmeter price-computing indicator, in any Commission-approved driveway flowmeter listed in Table 1 and not installed as part of a self-serve system. The instrument may be attached to a maximum of three driveway flowmeters and is 'customer-operated' using a credit card . The system can have a maximum of 500 credit card users. The credit cards are encoded so as to allocate a particular driveway flowmeter to a user.

The system comprises:

(1) up to three (3) driveway flowmeters not installed as part of a self-serve system;

(2) an impulse transmitter model IG8 D 10 attached to the litre shaft of the VR101 indicator in each driveway flowmeter (Figure 1);

(3) fuel usage recorder control unit incorporating both customer and vendor controls and indications (Figures 2 and 3).

1.1 Customer controls and indications on the control unit

1.1.1 Credit card reader: A specially coded credit card is inserted in the credit card slot in the front panel of the control unit, marked "1". Each of the maximum of 500 credit card holders has a 3-digit account number and a 3-digit secret code number corresponding to his card (Figures 2 and 8).

1.1.2 Keyboard: The keyboard consists of eleven buttons and is used to enter into the machine the secret code corresponding to a particular credit card. The keyboard is above the number "2" marked on the front panel of the control unit (Figure 2).

1.1.3 Authorization button: This is a blank button in the keyboard and is used to activate a driveway flowmeter after the secret code has been keyed into the keyboard. Each credit card is encoded so that it will authorize only one particular driveway flowmeter. That is, a particular customer using his own credit card will always obtain service from the same driveway flowmeter (Figure 2).

1.1.4 Credit card return button: At the end of a delivery of fuel, this (yellow) button must be pressed to return the credit card to the customer. If this button is pressed during a delivery the transaction is terminated and the credit card returned. This button

is adjacent to the number "4" on the front panel of the control unit. If a customer neglects to press the return button, an alarm signal sounds after approximately 20 seconds. If the release button is pressed the customer can then recover his credit card. If the signal is not responded to the credit card will be pulled into the machine after approximately 40 seconds and retained in a locked area within the console (Figure 2).

1.1.5 Printer: On pressing the yellow credit card return button the transaction in progress or just completed is finalised by the printer recording the details of the transaction on a metallic paper roll. The information recorded left to right is the customer 3-digit account number, the number of whole litres delivered, the remainder of the delivery in tenths of litres, the driveway flowmeter number (1, 2, or 3) and the day of the year (Figures 6 and 7).

The maximum delivery that an individual customer may obtain at any one time can be internally fixed between 90 litres and 800 litres. The printer or customer's indicator is located adjacent to the number "5" on the front panel of the control unit (Figure 2).

1.2 Vendor controls and indications on the control unit

By use of the key-lock on the front panel of the control unit, the front panel can be hinged open and access gained to various vendor functions (Figure 3).

1.2.1 Switch clock and date buttons: The switch clock and the three push-button "datum" buttons are used to set the day of year. From left to right the "datum" buttons set the hundreds of days, tens of days and single unit days. The day of the year is set according to Figures 6 and 7. During an interruption of power, the date does not continue and must be reset (Figure 3).

1.2.2 Start button and total functions: Using these functions the vendor can do both a totalizing function and sub-totals.

(a) Totalizing: This MUST NOT be attempted by unauthorised personnel, as this function clears the memory. With the red flip switch in the TOTAL position, pressing the green START button will give a totalized entry on the printer. The first three entries will show the total litres withdrawn for each of the three driveway flowmeters. The next set of entries will be the customer account number plus total withdrawn fuel in litres for each customer account. At the completion of a totalizing function, the totals are all zeroed (Figure 3). After completing totalisation the switch must be returned to the REFUEL position.

(b) Sub-totals: With the red flip switch in the 'REFUEL' position, pressing the green START button will give an output as in (a) but on completion the totals are not cancelled and the accumulation of data continues (Figure 3).

1.2.3 Carriage button: Pressing the yellow button marked PAPER allows the slack in the paper tape to be taken up (Figure 3) and advances the paper tape.

1.2.4 Customer barring facility: This facility allows a vendor to bar a customer from obtaining fuel through use of the fuel usage recorder. The credit card will be taken in by the control unit and deposited in the card magazine drawer on the lower left hand corner of the instrument. If on three consecutive attempts an incorrect secret code is entered via the keyboard the credit card will be taken in by the control unit and deposited in the card magazine drawer (Figure 3).

1.2.5 (Red) release button: If a credit card is blocked in the card reader, this button may be pressed and the card will be released (Figure 3).

1.2.6 Battery test button: The white battery test button checks the condition of the batteries which are used to operate the printer in the event of a mains voltage power failure. With a credit card inserted and accepted, pressing and holding this button for 10 seconds disconnects the 240V mains supply and should cause the printer to print the account number of the card inserted, the driveway flowmeter number and day of year, and indicate zero litres delivered if delivery has not commenced. If the printer does not operate, the batteries need immediate replacement (Figure 3).

1.3 Sealing

The control unit is sealed inside the cabinet as shown in Figure 4. The verification stamping plug and nameplate are as shown in Figure 5.

2. Test Procedure

The following test procedure will ensure that the Fuel Usage Recorder is operating in accordance with the approved design:

1. Obtain from the station operator credit cards for use with each of the three driveway flowmeters connected to the Fuel Usage Recorder and note the account numbers and secret codes corresponding to each card. Also obtain the key to the hinged front panel of the control unit.

   1.1 Open the front panel of the control unit and ENSURE that the red flip switch is in the (REFUEL) position. This is MOST IMPORTANT as the customer totals for the station can otherwise be lost.

   1.2 Press the green START button and record that the totals for each driveway flowmeter and for each customer account number will be displayed. Record the totals for each of the three driveway flowmeters and the totals corresponding to the account numbers for the three cards obtained from the station operator. Close the front panel of the control unit.

2. Using the credit card corresponding to driveway flowmeter number 1, insert the card, metal face up, into the card slot and with the arrow pointing towards the instrument.

   2.1 Enter the secret code for that card into the instrument via the keyboard and press the blank "authorize" button. The driveway flowmeter number 1 will now be authorized and a delivery can commence.

   2.2 Lift the nozzle of driveway flowmeter number 1 and deliver approximately 15 litres of fuel. Record the quantity delivered to the nearest 0.1 litre as indicated on the driveway flowmeter indicator. Hang up the nozzle.

2.3 At the control unit press the yellow RETURN button. The credit card will be returned and a record of the transaction printed. Record the quantity delivered. This quantity should agree with that indicated on the driveway flowmeter and recorded in 2.2 to within 0.1 litres.

2.4 In addition check that the account number printed corresponds to that for the card used and that the driveway flowmeter number printed corresponds to the driveway flowmeter from which fuel was just dispensed. Also check that the day of the year recorded is correct (Figures 6 and 7).

2.5 Repeat 2 to 2.4 inclusive, this time for a delivery of say, approximately 30 litres making sure to record the indicated quantities delivered on the control unit.

3. Repeat 2 to 2.5 this time using driveway flowmeter numbers 2 and 3 and their corresponding credit cards.

4. Again open the front panel of the control unit and ENSURE that the red flip switch is set to REFUEL. This is MOST IMPORTANT as customer account totals will be lost if this is not the case.

4.1 Press the green START button and record the totals for each of the three driveway flowmeters in the system. Also record the totals for each account number corresponding to the credit cards used. Close the front panel of the control unit.

4.2 From the totals for each driveway flowmeter and each account number recorded in 4.1 subtract the totals recorded in 1.2. You will now have a total of the quantity of fuel delivered during the test procedure for each driveway flowmeter and for each account number.

4.3 Check that these determined quantities as found in 4.2 correspond to the total amount of fuel delivered and recorded in the two deliveries per driveway flowmeter (and per account) while doing tests 2 to 3 inclusive.

5. Open the front panel of the control unit and insert any one of the three credit cards and press in the secret code for that card using the keyboard. Press the blank 'authorization' button.

5.1 Press and hold the white BATTERY TEST button for 10 seconds. The printer should respond and print the account number for the credit card used, zero for the quantity delivered, the number of the driveway flowmeter authorized and the day of the year. If the printer does not respond the batteries in the system need to be immediately replaced. Close the front panel and lock.

6. Return the credit cards and the key of the front panel to the station operator.

TABLE 1

Certificate of Approval No
5/6A/47
5/6A/61
5/6A/62
5/6A/63
5/6A/66

The Proeda Fuel Usage Recorder may only be attached to instruments which conform to the above patterns, which are fitted with VR101 price computing indicators, and which do not form part of a self-serve system.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No PS109

VARIATION No 1

Pattern: Proeda Fuel Usage Recorder Model S31

Submittor: Proeda Australasia Pty Ltd,
11 Whiting Street,
Artarmon, New South Wales, 2064.

1. Description of Variant

1.1 Variant 1

Driven from the litre shaft of a Veeder-Root Model VR2002AE price-computing indicator which has replaced the price-computing indicator of a driveway flowmeter conforming to Certificate of Approval No 5/6A/62 or 5/6A/66.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S109

VARIATION No 2

Pattern: Proeda Fuel Usage Recorder Model S31

Submittor: Proeda Australasia Pty Ltd,
11 Whiting Street,
Artarmon, New South Wales, 2064.

1. Description of Variants

1.1 Variant 2

The pattern connected to any Commission-approved Veeder-Root, mechanical-type indicator for use with bulk flowmeters. The impulse transmitter, model 0211.0002 (clockwise rotation) or model 0211.0001 (anti-clockwise rotation) is connected to the drive shaft of the indicator inside the housing of the indicator (Figure 9).

The indicator is modified by the addition of a Veeder-Root model KJ7527001 electric reset which is fitted to and operates the reset handle on the indicator (Figure 10). The system is approved to operate with bulk flowmeters of flow rates up to 1500 L/min. The maximum delivery is as for the pattern i.e. 800 L.

The pattern may be used with up to three bulk flowmeters or a combination of up to three bulk flowmeters and driveway flowmeters as detailed in Technical Schedule No S109 dated 28/11/80 and Technical Schedule No S109 Variation No 1 dated 5/6/81.

The indicator may also be fitted with other devices such as preset indicators and ticket printers as approved in the certificate for the unmodified flowmeter.

1.1.1 Marking

As for the pattern (Figure 5).

1.1.2 Sealing

(a) The pattern is sealed as described in Technical Schedule No S109 dated 28/11/80.

(b) The bulk flowmeter indicator, assembly and meter are sealed as described in the Technical Schedule under which they are approved.

1.2 Variant 3

As for Variant 2 but with a minimum delivery of 200 L and a maximum of 8000 L, recorded to the nearest whole litre. Figure 11 illustrates the modified front panel and display.

1.2.1 Marking

As for the pattern, with the following addition:

The instrument is marked with the following data, displayed on the front of the S31 unit (Figure 11):

Minimum delivery 200 L

1.2.2 Sealing

Same as for Variant 2.

16/6/82

TEST PROCEDURE No S109

VARIATION No 2

As per Technical Schedule No S109 dated 28/11/80 with the following alterations:

When used with a bulk flowmeter,

1. Substitute the words "bulk flowmeter" for "driveway flowmeter" where appropriate.

2. In test 2.2 for "15 litres of fuel" substitute the words "half the allocation limit for the site as set by the proprietor."

3. In test 2.3 for "0.1 litres" substitute the words "0.6 litres."

4. In test 2.5 for "30 litres" substitute the words "the full allocation limit for the system".

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S109

Variation No 3

Pattern: Proeda Model S31 Fuel Usage Recorder

Submittor: Proeda Australasia Pty. Ltd.,
11 Whiting Street,
Artarmon, New South Wales, 2064.

1. Description of Variant

Variant 4

Driven from the meter output shaft of any Commission-approved driveway flowmeter incorporating an electronic price-computing indicator.

The connection includes a 4:1 reduction gearbox in the meter output shaft between the meter and the indicator (Figure 12).

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S109

VARIATION No 4

Pattern: Proeda Model S31 Fuel Usage Recorder

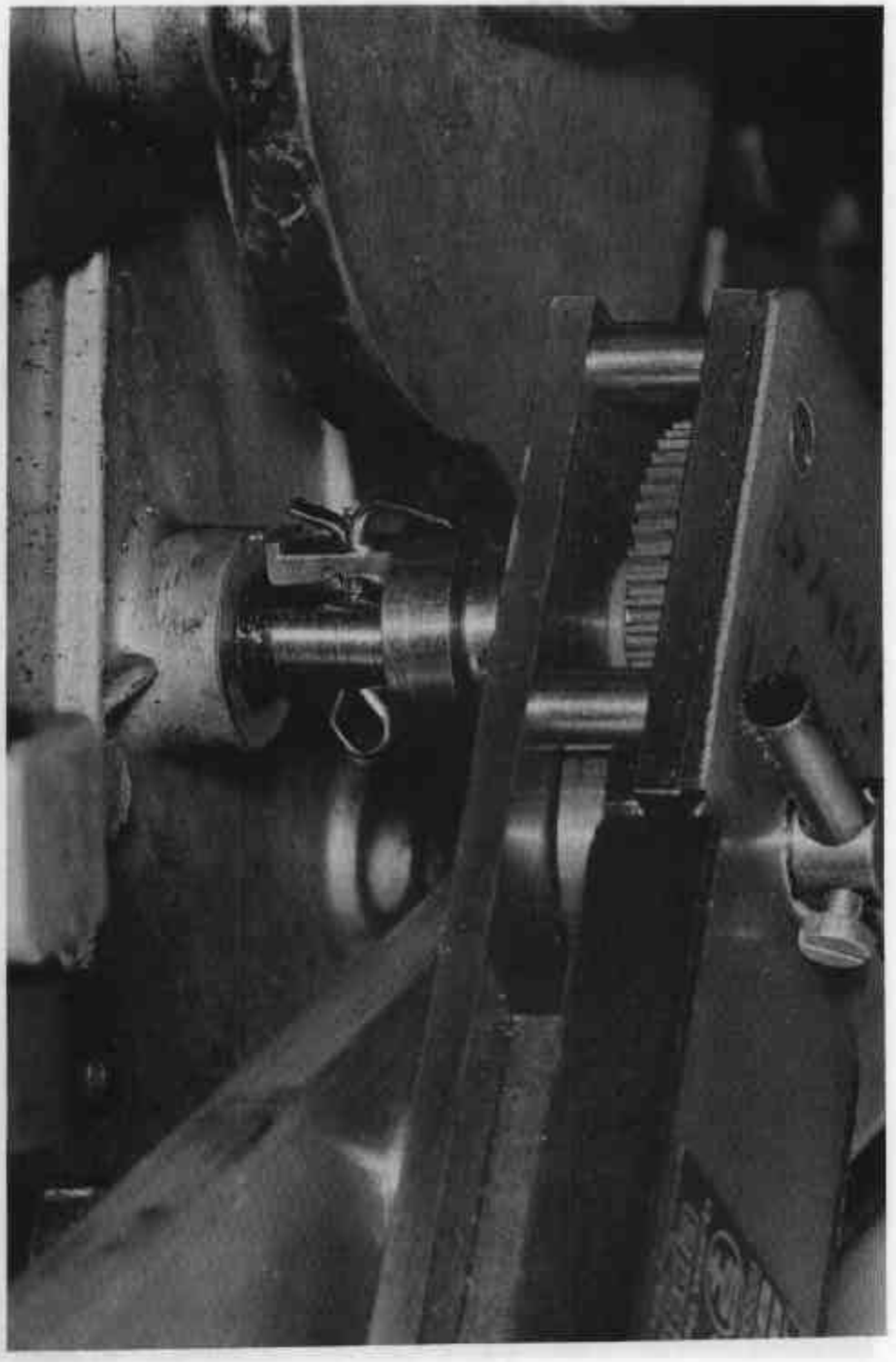
Submittor: Proeda Australasia Pty Ltd
100 Miller Street
Pyrmont NSW 2009

1. Description of Variant 5

With the electronics now having micro-processor control and known as a model S31-3 (Figure 13).

The system allows up to 3 driveway flowmeters to be controlled simultaneously and each credit card may authorise any one of three driveway flowmeters selected. In addition, the instrument incorporates an internal two-digit diagnostic status display and is interfaced to a Zahn model 0211.0013/2 pulse generator which is mounted to the Veeder-Root mechanical indicator.

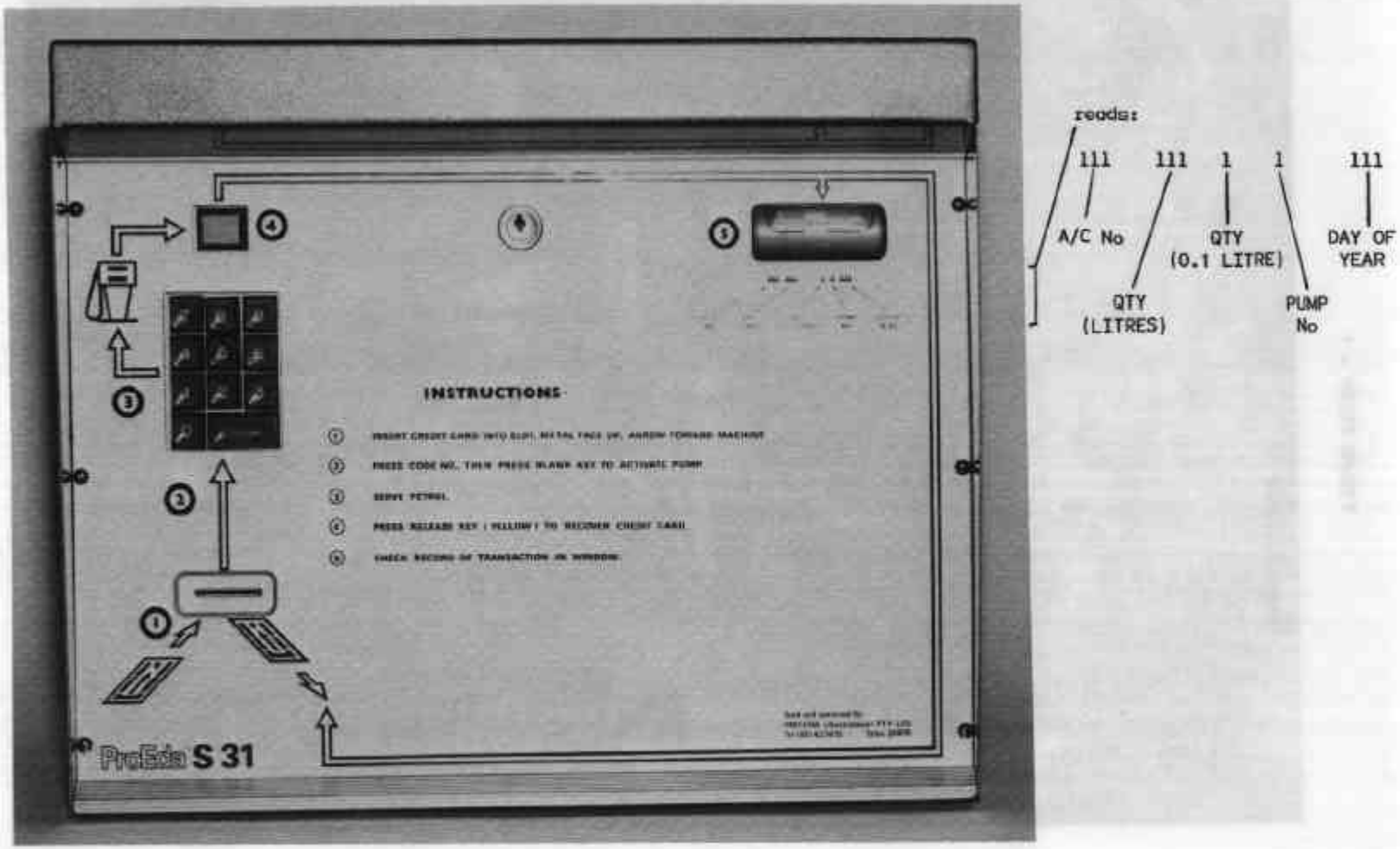
FIGURE PS109 - 1



IG8 D 10 pulse transmitter fitted to litre shaft

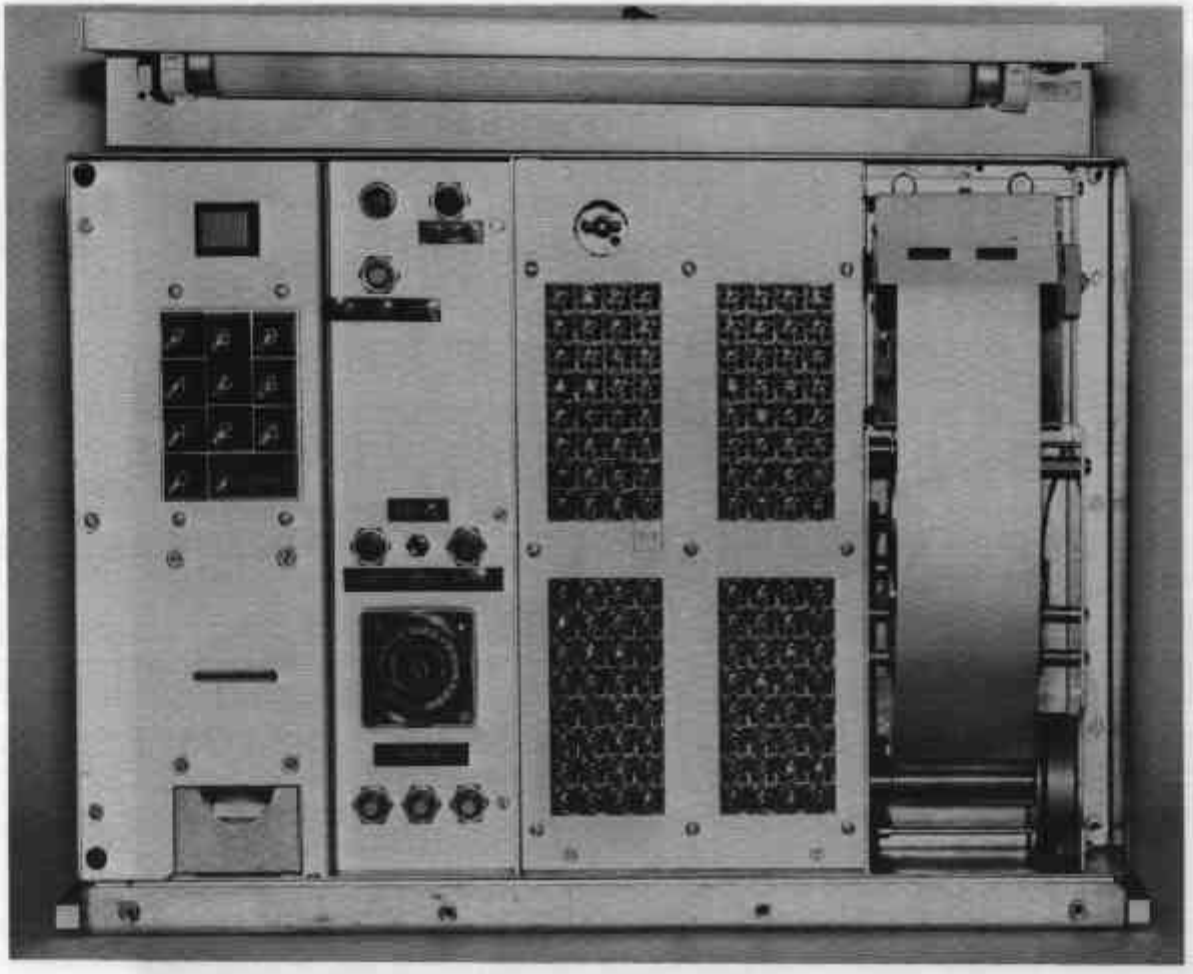
28/11/80

FIGURE PS109 - 2



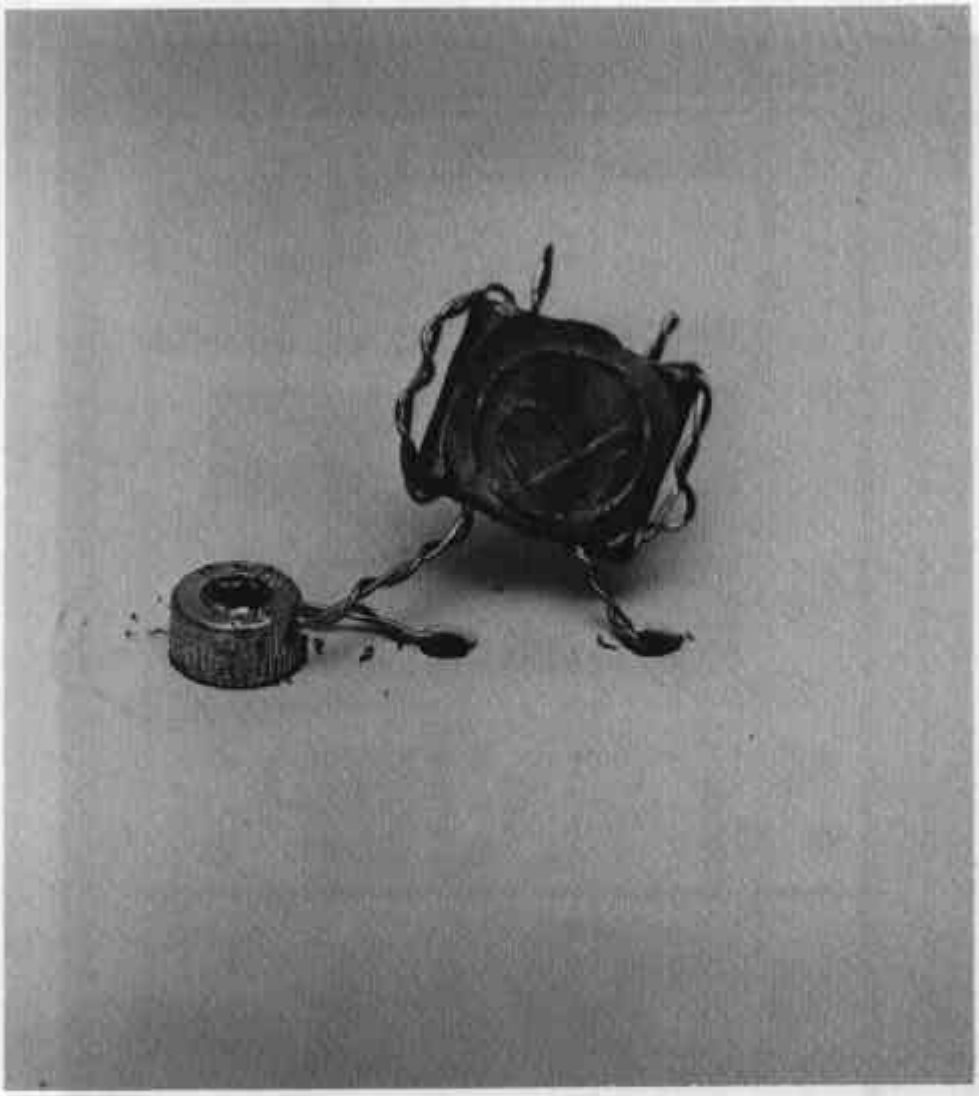
Front panel of Control Unit

FIGURE PS109 - 3



Vendor controls inside front panel of control unit

FIGURE PS109 - 4



Control unit sealing
(inside hinged door cover)

28/11/80

FIGURE PS109 - 5

Data plate and stamping plug

FIGURE PS109 - 6

Date-table

Date	January	February	March	April	May	June	July	August	September	October	November	December
1.	1	32	60	91	121	152	182	213	244	274	305	335
2.	2	33	61	92	122	153	183	214	245	275	306	336
3.	3	34	62	93	123	154	184	215	246	276	307	337
4.	4	35	63	94	124	155	185	216	247	277	308	338
5.	5	36	64	95	125	156	186	217	248	278	309	339
6.	6	37	65	96	126	157	187	218	249	279	310	340
7.	7	38	66	97	127	158	188	219	250	280	311	341
8.	8	39	67	98	128	159	189	220	251	281	312	342
9.	9	40	68	99	129	160	190	221	252	282	313	343
10.	10	41	69	100	130	161	191	222	253	283	314	344
11.	11	42	70	101	131	162	192	223	254	284	315	345
12.	12	43	71	102	132	163	193	224	255	285	316	346
13.	13	44	72	103	133	164	194	225	256	286	317	347
14.	14	45	73	104	134	165	195	226	257	287	318	348
15.	15	46	74	105	135	166	196	227	258	288	319	349
16.	16	47	75	106	136	167	197	228	259	289	320	350
17.	17	48	76	107	137	168	198	229	260	290	321	351
18.	18	49	77	108	138	169	199	230	261	291	322	352
19.	19	50	78	109	139	170	200	231	262	292	323	353
20.	20	51	79	110	140	171	201	232	263	293	324	354
21.	21	52	80	111	141	172	202	233	264	294	325	355
22.	22	53	81	112	142	173	203	234	265	295	326	356
23.	23	54	82	113	143	174	204	235	266	296	327	357
24.	24	55	83	114	144	175	205	236	267	297	328	358
25.	25	56	84	115	145	176	206	237	268	298	329	359
26.	26	57	85	116	146	177	207	238	269	299	330	360
27.	27	58	86	117	147	178	208	239	270	300	331	361
28.	28	59	87	118	148	179	209	240	271	301	332	362
29.	29		88	119	149	180	210	241	272	302	333	363
30.	30		89	120	150	181	211	242	273	303	334	364
31.	31		90		151		212	243		304		365

Current numbers of days of normal years

FIGURE PS109 - 7

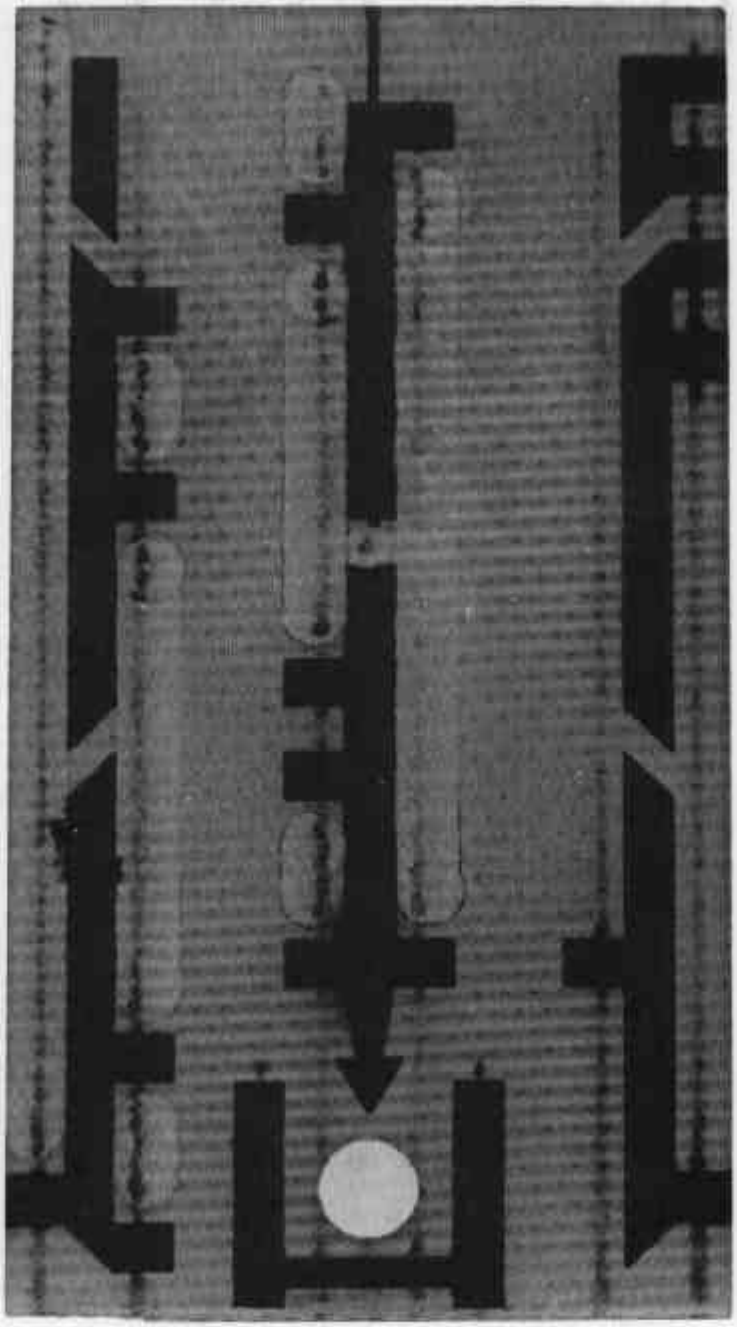
Date-table

Date	January	February	March	April	May	June	July	August	September	October	November	December
1.	1	32	61	92	122	153	183	214	245	275	306	336
2.	2	33	62	93	123	154	184	215	246	276	307	337
3.	3	34	63	94	124	155	185	216	247	277	308	338
4.	4	35	64	95	125	156	186	217	248	278	309	339
5.	5	36	65	96	126	157	187	218	249	279	310	340
6.	6	37	66	97	127	158	188	219	250	280	311	341
7.	7	38	67	98	128	159	189	220	251	281	312	342
8.	8	39	68	99	129	160	190	221	252	282	313	343
9.	9	40	69	100	130	161	191	222	253	283	314	344
10.	10	41	70	101	131	162	192	223	254	284	315	345
11.	11	42	71	102	132	163	193	224	255	285	316	346
12.	12	43	72	103	133	164	194	225	256	286	317	347
13.	13	44	73	104	134	165	195	226	257	287	318	348
14.	14	45	74	105	135	166	196	227	258	288	319	349
15.	15	46	75	106	136	167	197	228	259	289	320	350
16.	16	47	76	107	137	168	198	229	260	290	321	351
17.	17	48	77	108	138	169	199	230	261	291	322	352
18.	18	49	78	109	139	170	200	231	262	292	323	353
19.	19	50	79	110	140	171	201	232	263	293	324	354
20.	20	51	80	111	141	172	202	233	264	294	325	355
21.	21	52	81	112	142	173	203	234	265	295	326	356
22.	22	53	82	113	143	174	204	235	266	296	327	357
23.	23	54	83	114	144	175	205	236	267	297	328	358
24.	24	55	84	115	145	176	206	237	268	298	329	359
25.	25	56	85	116	146	177	207	238	269	299	330	360
26.	26	57	86	117	147	178	208	239	270	300	331	361
27.	27	58	87	118	148	179	209	240	271	301	332	362
28.	28	59	88	119	149	180	210	241	272	302	333	363
29.	29	60	89	120	150	181	211	242	273	303	334	364
30.	30		90	121	151	182	212	243	274	304	335	365
31.	31		91		152		213	244		305		366

Current numbers of days of leap-years

28/11/80

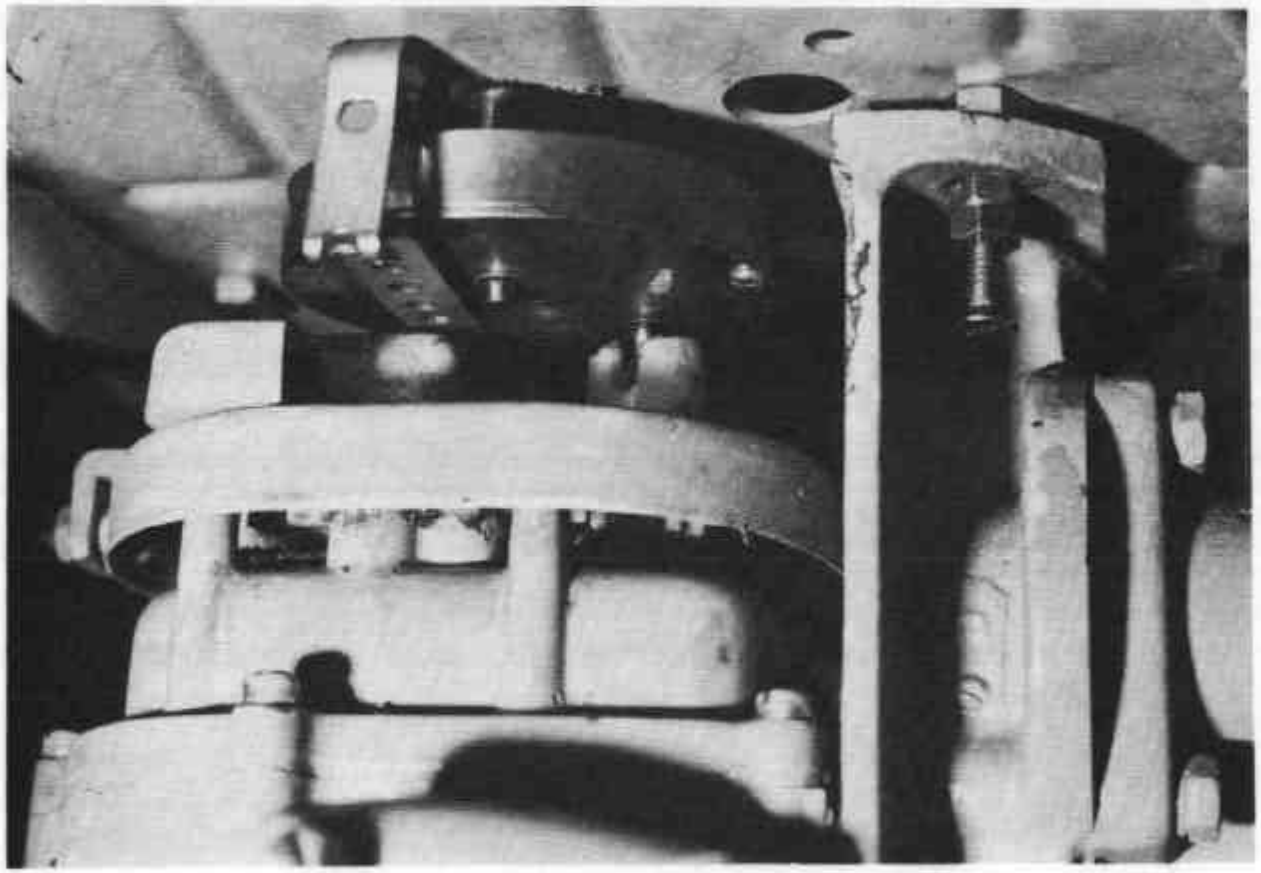
FIGURE PS109 - 8



Customer Credit Card

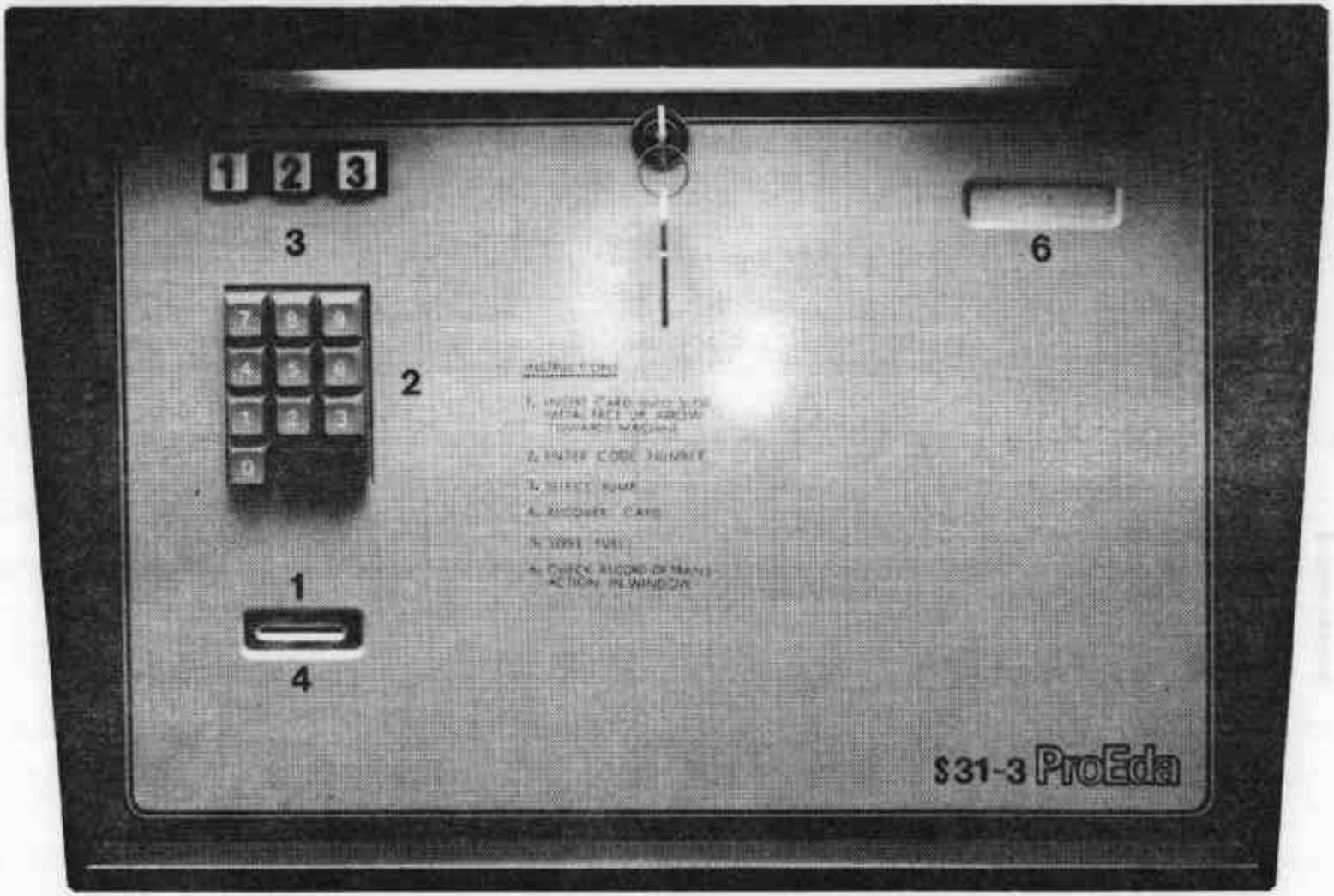
28/11/80

FIGURE 5109 - 12



4:1 Gearbox

FIGURE S109 - 13



Proeda Model S31-3

S109
2/6/86