GOSSEN

GOSSEN GMBH
Postfach 1780
D-8520 Erlangen
Tel. (0 91 31) 8 27-1
Telex 6 29 845

GOSSEN PROFI-**flash 2**

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} (see instructions for the PROFISIX)

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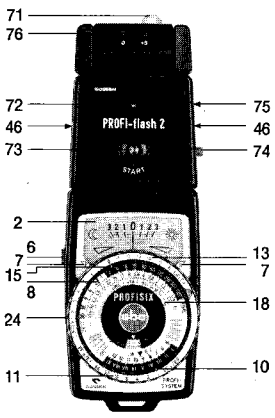


General indications

The PROFI-flash 2 electronic flash attachment is a true indicating measuring device for precise incident readings of electronic flash output. GOSSEN designed that attachment while using the results of advanced technical research and manufacturing. Like all other GOSSEN meters for the photographic field the PROFI-flash 2 is easy to handle and useful for quite a series of measuring problems. It can be used for measuring the electronic flashes of commerically available flash units for measuring both incident light or reflected light. It will provide the exact f/stop to be set at the camera, even under very difficult lighting conditions.

The measuring head of the PROFI-flash 2 can be rotated to measure all over an angle of 180°C. This will make things more easy for you especially when measuring small and flat objects, e.g. when doing reproductions in macro photographie in areas which are difficult to get at. The meter coupled with the attachment can be placed on a flat surface, the advantage be that the metering distance will be reduced and also that any possible shadowing due to the operators hand will be eliminated.

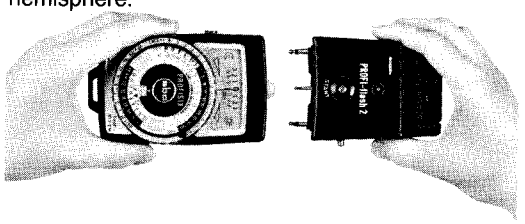
On pages 11 to 28, we are describing the internal circuitry and the operating of the attachment. Before actually starting measuring with your PROFI-flash 2 you should carefully read those instructions. Once you are completely familiar with the general operating of the unit, the check list on page 8 will do.

Operating check list

1. Attach PROFI-flash 2 to PROFISIX.
2. Set film speed at the PROFISIX.
3. Press measuring button (6) of the PROFISIX. In case of continuous measurement, set button to round mark (27).
4. The green indicator will come on (72), next press and release the "START" button (73) on the flash attachment.
5. Fire flash.
6. Turn computer ring to set the indicator needle (4) precisely to "0".
7. Red "0" must be within the red triangular marks (7)!
8. Read the proper f/stop opposite the red flash indicator ⚡ (8) on the scale.
9. After using the continuous measuring method (27), always remember to turn red button back to normal position (26), otherwise short battery life will result.

Attaching to the meter

Remove detachable front shield covering the accessory jacks from your PROFISIX. With the hemispherical diffusor (1) in the centre of the PROFISIX align the PROFI-flash 2 attachment with the front of the meter, so that the plugs on the attachment are opposite the jacks in the meter and the recess in the attachment is opposite the hemisphere.



While holding the PROFI-flash 2 by its ribbed sides push the accessory straight onto the meter. Once the PROFI-flash 2 is attached, the internal circuitry will be automatically programmed.

Setting the film speed

Set the speed of the film you are using at the PROFISIX in the normal manner.

Battery test

The PROFI-flash 2 is being powered by the battery of the PROFISIX. Be sure to test the battery with the attachment mounted on the meter.

Press the read measuring button (6), next hold down the green battery test button (9). The indicator needle (4) should now come to rest in the green area marked "BATT". If not, the battery must be replaced (see page 5 of the PROFISIX operating instructions).

Measuring methods

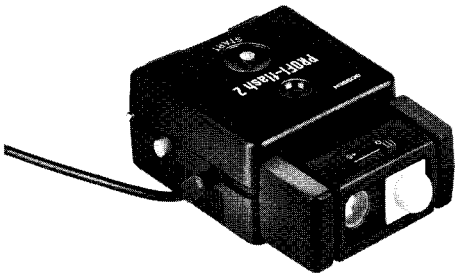
Position of the diffusor sphere

for incident light measuring

for reflected light measuring

Connecting the Synchro cord

The PROFI-flash 2 is provided with a remote trigger for the measuring flash so that remote triggering is possible. For doing so, just connect the synchro cord of the flash unit to the socket (75).



Taking a flash reading

Both incident and reflected light readings can be taken with flash (see page 11).

When reading incident light, place the spherical diffusor of the PROFI-flash 2 (71) in front of the measuring cell and aim the meter plus attachment towards the camera, i.e. opposite the subject to be photographed.

When reading reflected light, the meter plus attachment is pointed towards the subject from the camera position without the diffusor over the measuring cell.

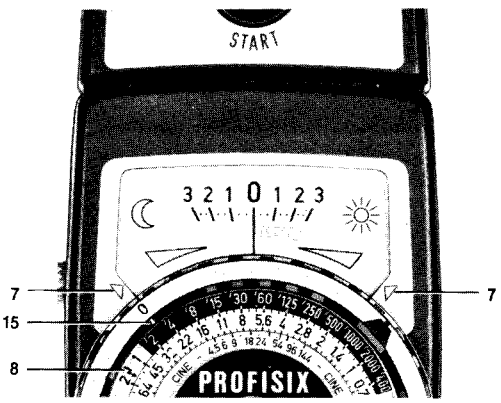
It is understood that the proper position of light sources should be arranged before measurement. After pressing the measuring button (6), the green indicator light will come on (72). Next press and release the START button (73) on the attachment.

The PROFI-flash 2 will now stay ready for measurement for about 30 seconds. The green indicator light will go out to show you that the meter shut off automatically. For measuring, trigger the flash either at the flash unit itself or by means of the synchro cord (75) to be plugged into the sync socket of the PROFI-flash 2. Next rotate the computer ring until the meter nulls exactly. Read the proper f/stop opposite the red flash indicator ⌒ (8) on the scale (18), provided the red "0" on scale (13) will remain between the two red triangles on the meter face. If the red zero mark goes beyond either of the red triangles, the flash intensity is beyond the range of the meter. In that case refer to page 15 "measuring range".

The shutter speed you will set at your camera should be equal or longer than the flash output duration of your flash unit.

Measuring range

Accurate readings can be made in the range of 28.8 lxs to 7360 lxs. For a film speed setting of 21 DIN you can read e.g. f/stops from 2.8 + 2/3 to 45 + 2/3 at the flash indicator mark ⌒ (8).



Upper limit of measuring range

Lower limit of measuring range

This range is limited by the red triangular marks (7) on the meter face. After measuring and nulling the indicator needle on scale (2) the red zero mark (13) must remain between the two red triangles (7), otherwise the reading is not usable.

The PROFI-flash 2 offers a very wide measuring range. If you are working with very high intensity studio flash units and getting to the edge of the performance capabilities of the meter, you may need the +5 stop extension. Sliding the button (76) to position "+5" will extend the PROFISIX 2 range by +5 stops. Then set this extension factor on the ring (23) and the meter will give you an automatically correct reading.

If the red zero mark is outside that range, the f/stop opposite the flash indicator mark ⌁ (8) must not be used. When past the right triangle the light level of the flash is too low (see page 17). When past the left triangle (see page 16), the light level of the flash is too high.

Continuous measuring

You can override the electronic storage of the PROFISIX to make measurements which require more time by locking the red button for continuous, extended measurement (see PROFISIX operating instructions, page 8). Be sure to press the "START" button before each measurement. The extended measurement method is also recommended when doing multiple flash work (page 24). Always remember to turn the measuring button (6) of your PROFISIX back to normal position, otherwise short battery life will result.

Change of shutter speed setting

The circuitry of the PROFI-flash 2 is designed to indicate f/stops which will produce correct overall exposure with a shutter speed of 1/125 sec. When, for any reason, a different shutter speed is used and if, at the same time, the ambient light is extremely bright, the indicated f/stop must be modified to compensate for variations caused by the change in shutter speed.

To determine, if compensation is required, two parallel measurements must be taken from the same position and, of course, with the same film speed setting:

1. normal measurement: flash plus ambient light with the PROFI-flash 2
2. measurement of the ambient light only, using the basic PROFISIX alone with its hemispherical diffusor placed in front of the measuring cell.

Compare the f/stop indicated by the PROFI-flash 2 with the f/stop shown by the PROFISIX for a shutter speed of 1/125 or 1/100 sec. Any difference between the two readings calls for a f/stop modification as shown in the table below.

Reading difference between PROFI-flash 2 and PROFISIX in f/stops	Modification of camera shutter	f/stop setting indicated by the PROFI-flash 2 with speed setting:		
	1/25 – 1/30	1/50 – 1/60	1/200 – 1/250	1/400 – 1/500
	close down	close down	open up	open up
1	1	1/2	1/3	2/3
2	2/3	1/3	1/6	1/3
3	1/3	1/6	1/10	1/6
4	1/4	1/10	0	1/10
5	1/10	0	0	0

Example: PROFI-flash 2 (flash plus ambient light) gave a reading of f/8. The PROFISIX indicated f/stop 5.6 at 1/125 sec. for the ambient light. The reading difference is, therefore, one f/stop. If shutter speed 1/500 sec. is to be set at the camera, the above table shows that lens must be opened by 2/3 f/stop from the reading indicated by. the PROFI-flash 2.

Multiple flash

Occasionally, the light output from one flash of your equipment may not be enough to give you the f/stop required. By repeatedly flashing with the shutter open, you can increase the total light output and work at smaller f/stops. When doing that multiple flash work, set the PROFISIX to "extended measurement". The "START button" (73) is to be pressed only once when starting the multiple flash work. Be sure not to press it between the individual, successive flashes. Just trigger one flash after the other. The PROFISIX will add up the values measured.

The adding up of the multiple flashes should not exceed a period of 2 minutes. In case it takes longer, you risk getting incorrect measuring results, because the storage time of the capacitor will be exceeded.

When adding up multiple flashes the measurement may have yielded the following values:

	f/stop at DIN 18
after the 1. flash	8
after the 2. flash	11
after the 3. flash	11/16
after the 4. flash	16

Any variations between the measured values of the individual flash impulses which you may discern in the process of adding up several flashes are due to the fact that electronic flash units do not necessarily have an identical lumensecond output from flash to flash. Permissible tolerances under existing German standards – DIN 19011 in effective light output range up to ± 20 % which equals ± ½ f/stop.

Extension factors/
Exposure value modification

When working with the PROFI-flash 2 you can also compute extension factors or exposure value modifications into the meter, the same way you are doing it when using the PROFISIX alone. (See PROFISIX operating instructions pages 9 to 12.)

Working with the +5 stop range extension (76), set the correction factor ring (23) of the PROFISIX to EV +5 as explained on page 15.

Specifications

Measuring method:	Both incident light measurement or reflected light
Light sensitive element:	silicon blue cell, colour corrected

Measuring ranges:	in incident light mode – 28.8 to 7360 lxs in relected light mode – 1.2 to 305 cd/m^2 (this means apertures f 2.8 +$^2/_3$ to f 45 +$^2/_3$
with 5 stop range extender:	in incident light mode – 920 to 236 000 lxs in reflected light mode – 38 to 9760 cds/m^2 Ready state for operation about 30 seconds for as long as the basic meter is on.
Shutter speed for measuring:	$^1/_{125}$ sec.

Block diagram and **circuitry** of the PROFI-flash 2

After the measuring button of the PROFISIX is pressed, the green indicator light (J) will come on. Operating the "START" button (H) will completely discharge the integrator and storage capacitor (E); the PROFI-flash 2 now will be in a ready state for approx. 30 sec. Prior to the flash being fired, the meter will be in its stand-by mode. The actual measuring operation will be started by the flash. The light of the flash passes through the hemispherical diffusor (71) to the photo diode (A). That diode feeds a current through the impedance transformer (B) to the electronic switch (C); next through the coupling capacitor to the gate (D). The flash causes an impulse shaped rise of the current which triggers the gate, i.e. the gate closes the electronic switch (C) for the duration of $^1/_{125}$ sec. The current charges the integrator and storage capacitor (E) with a load U_C which is proportional to the intensity of the flash used (lux-seconds). The voltage U_C is fed to the impedance transformer (F) and next to the amplifier with logarithmic characteristic (G) were it is transformed into a proportional step voltage. This voltage is then supplied through the jacks to the PROFISIX and produces a reading there.

Block diagram and circuitry

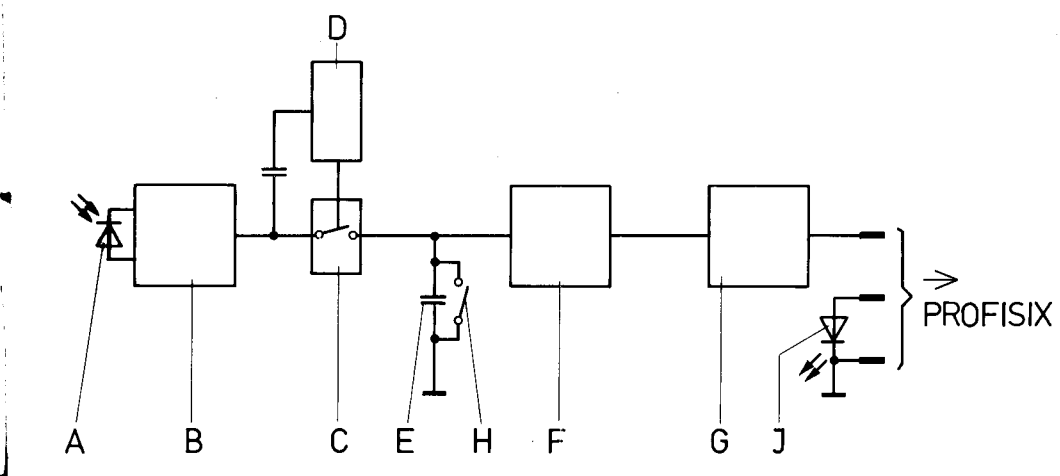
A Silicon blue cell with correction filter
B Impedance transformer
C Electronic switch
D Gate (1/125 sec.)
E Integrator and storage capacitor
F Impedance transformer
G Amplifier with logarithmic characteristics
H START button
J Green indicator light (light emitting diode)

If repair or adjustment should ever become necessary, send your PROFI-flash 2 carefully packed. to:

GOSSEN GMBH
Servicestelle B
Nägelsbachstraße 25
D-8520 Erlangen

or to the GOSSEN agency in your own country.

To expedite handling please **send your PROFI-flash 2 only – without case or accessories.**


D
A
B
C
E
H
F
G
J
PROFISIX