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WIEN

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I N S T R U C T I O N M A N U A L

# Demiphoto



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**"REMIPHOT" Exposure Meter**  
**Instruction Manual**

**W**e are constantly endeavouring to still further improve our instruments and to adapt them to the requirements of modern test and research methods. This involves, in certain cases, modifications in the mechanical and optical structure of our instruments. All descriptions and illustrations in catalogues and instruction manuals as well as specifications relating to the mechanical features and optical data **must not be regarded as binding.**

# "REMIPHOT" Exposure Meter

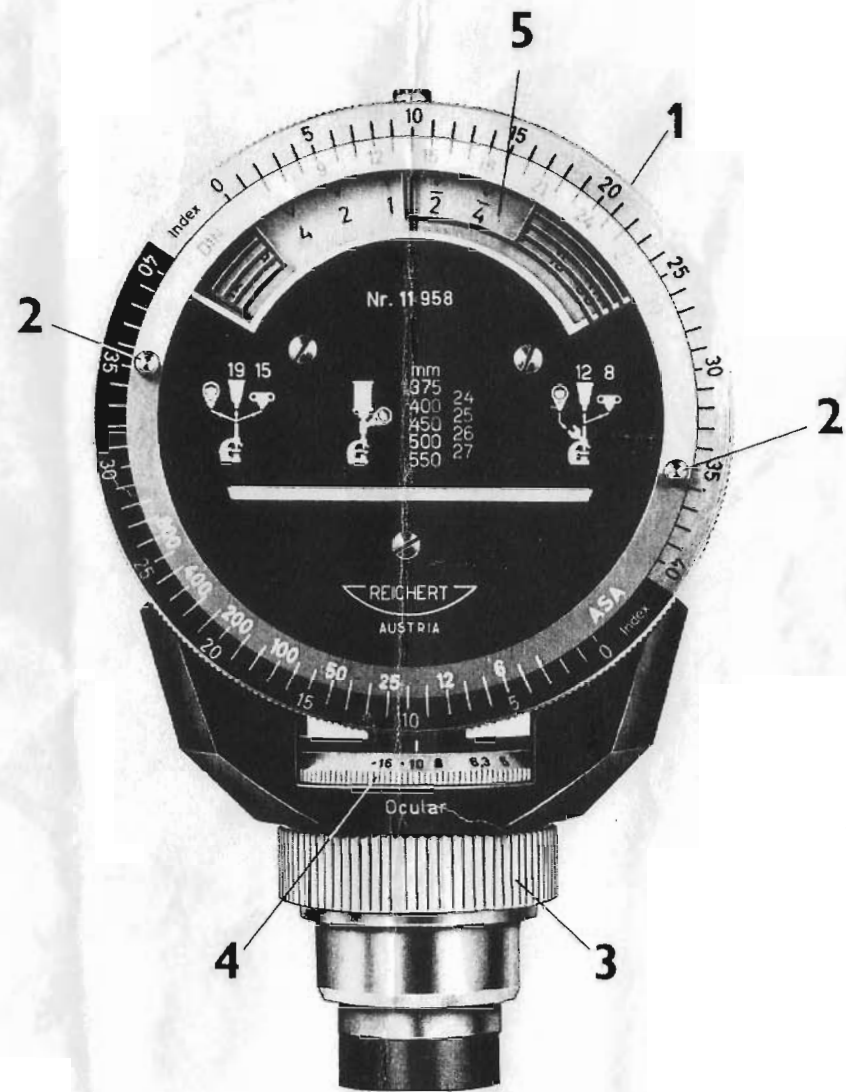
## Instruction Manual

For alternating current only. Before connecting to the mains supply, check that the voltage marked on the cable of the "REMIPHOT" is the same as the supply voltage.

### I. Details of Operation

- 1 Introduce the exposure meter into the microscope tube, in the case of the "ZETOPAN" or "Me F" microscopes, for example, the monocular or binocular body; secure it by means of the clamping ring (3). Insert the plug into the a. c. mains socket.
- 2 The outside ring (1) carrying the scales with the index numbers is held by its knurled rim, and the inner ring with the sensitivity (film speed) scales is rotated by means of the pins (2) until the speed of the film used is opposite the index number (as shown on the "REMIPHOT" itself or in the table on page 3). On the exposure meter in the illustration the index number 19 is set against a film speed of 23° DIN or 160 ASA.
- 3 Set the ring (4) to the magnification of the eyepiece used for photomicrography.
- 4 Rotate the outer ring (1) one notch at a time until the pointer lies within the red frame (5) marked on the exposure meter window. (The ring (1) is rotated in the direction in which the pointer should move in order to come into the frame of the window). The exposure time is read off against the end of the pointer.

In the case of extremely long exposure times (e.g. with very powerful objectives and images of very low brightness), it may happen that, with the ring (1) turned fully clockwise, the pointer moved away from the shaded area on the left but does not reach the red frame (5). The exposure time may in this case be read on the left of the frame at the point where the pointer comes to rest.



## II. Special Notes

### Shaded Areas of Instrument Window

No reading should be taken if the pointer comes to rest in one of the shaded areas of the instrument window. These parts have been left transparent so that the pointer is visible also outside the reading range, and it is possible to see in which direction the ring (1) has to be turned to take a measurement (see note in section I, 4).

### Light Filter

The exposure reading applies to panchromatic medium-sensitivity black-white material with or without filter provided the transmission of the latter is not restricted to an extremely narrow wave length range of the visible spectrum. When filters having an extremely narrow transmission range are used for work with panchromatic material, and also when employing orthochromatic material, it is necessary to determine the filter factors once and for all by trial exposures.

### Extended Exposure Times

With very long exposure times it is necessary to apply correction factors which are either obtained from the film manufacturers or determined experimentally; these take into account the Schwarzschild effect which depends on the emulsion used. When reading extremely long exposure times to the left of the red frame of the instrument window the pointer exhibits a certain sluggishness which is not present otherwise; about half a minute is required until the correct exposure time is indicated.

### Colour Photography

The exposure meter also gives correct exposure times for colour film provided the colour temperature of the light source matches the film sensitivity, if necessary with the insertion of conversion filters. For longer exposure times it is necessary to apply correction factors as in the case of black-white film. Any colour shift introduced in this way may be corrected by compensating filters. Details of correction factors and filters can be obtained either from the manufacturer or through preliminary experiments.

### Extremely Critical Work

For specially accurate work it may be advisable to introduce an empirical sensitivity correction after the first results are obtained with the particular grade of black-white or colour film. This method compensates for the safety factors in the DIN and ASA ratings which are already well known from amateur photography, and ensures better adaptation to the working conditions in order to achieve optimum results.

### Bright-dark Contrast

Certain objects exhibit such pronounced bright-dark contrasts that it is not possible to expose the film correctly for both the bright and the dark parts of the image simultaneously. Where satisfactory reproduction of the brighter parts is required the indicated exposure time should be shortened, while for correct reproduction of the darker parts the exposure time has to be increased.

## Cinemicrography

In 16 mm cinemicrography on the "ZETOPAN" the exposure meter can be mounted with an intermediate tube directly on the "KINEKONNEX" cinemicrographic fitting. In the case of the "Me F" the "REMIPHOT" is inserted into the inclined monocular tube of the microscope or into the phase contrast equipment.

The exposure time of the camera shutter is determined by the film speed selected (frames per second), and the intensity of the microscope illumination must therefore be adjusted until the exposure meter indicates this fixed exposure time. During this adjustment the eyepiece ring has to be set to 10X, and the index ring to 4 in accordance with the table.

### III. Table of Index Numbers

The most important index numbers together with the corresponding symbols are reproduced on the "REMIPHOT" body.

Exposure meter positions:	at	Camera type	Index Number
on the same tube as the camera (or on the corresponding inclined monocular tube if the light beam is not split)		Miniature camera	15
		Kam "VBX"	19
		"KINEKONNEX"	4
Binocular body on "ZETOPAN", "NEOZET", "BIOZET", inclined tube of "BIOZET" triocular body	Vertical photo tube	Miniature camera	8
		Kam "VBX"	12
Binocular body on "CSM"	Vertical photo tube	Miniature camera	6
		Kam "VBX"	10
Binocular body on "Me F"	Photo tube of lateral deviating prism	Miniature camera	4
		Kam "VBX"	8
Any monocular body		Built-in camera, lateral or vertical extension camera (e.g. "Me F", "Me A" or "Kam B")	
		Length of bellows (mm)	
		375-400	24
		400-450	25
		450-500	26
500-550	27		
Index number increased by 1 for each additional 50 mm bellows length.			

#### IV. Determining Index Numbers for other Instruments

In the case of instruments where optical conditions in the monocular body are the same as in the photographic tube, the "REMIPHOT" measurements are carried out as described under I, using the index number corresponding to the camera type, or in the case of other manufacturers' cameras factor. The settings are as follows:

Camera Factor	0.32X	0.4X	0.5X	0.63X	0.8X	1X
Index Number	11	13	15	17	19	21

For the Reichert "REMICA III" and for the lens sleeves for miniature cameras (camera factor 0.5X) use index number 15; for the Reichert "Kam VBX" (camera factor 0.8X) the index number is 19.

When using binocular bodies or tubes with beam splitting systems or a tube factor, the measurement is first carried out on the photographic tube as explained in Section I and the exposure time indicated is noted. Without changing the setting of the eyepiece ring (4) the exposure meter is then inserted into the monocular or binocular tube where the measurement is to be taken, and the outer ring (1) is rotated until the instrument pointer moves into the frame (5) on the instrument window. With the knurled ring (1) held in position, the inner ring is then rotated by means of the pins (2) so that the exposure time previously determined on the photographic tube appears against the instrument pointer. The required new index number is then opposite the film sensitivity speed.

#### V. Low-power Photography on the "Me F" ("Me FA")

"REMIPHOT"		Photographic System		
position	setting of eyepiece ring (4)	Objective	built-in or lateral (MeFA) camera Length of bellows (mm)	Index Number
Inclined monocular tube	4x	Dallmeyer f=25 mm	375 mm .....	15
		Neupolar f=50 mm		
Phototube of lateral deviating prism	6,3x	Neupolar f=100 mm	460 mm .....	16
			550 mm .....	17