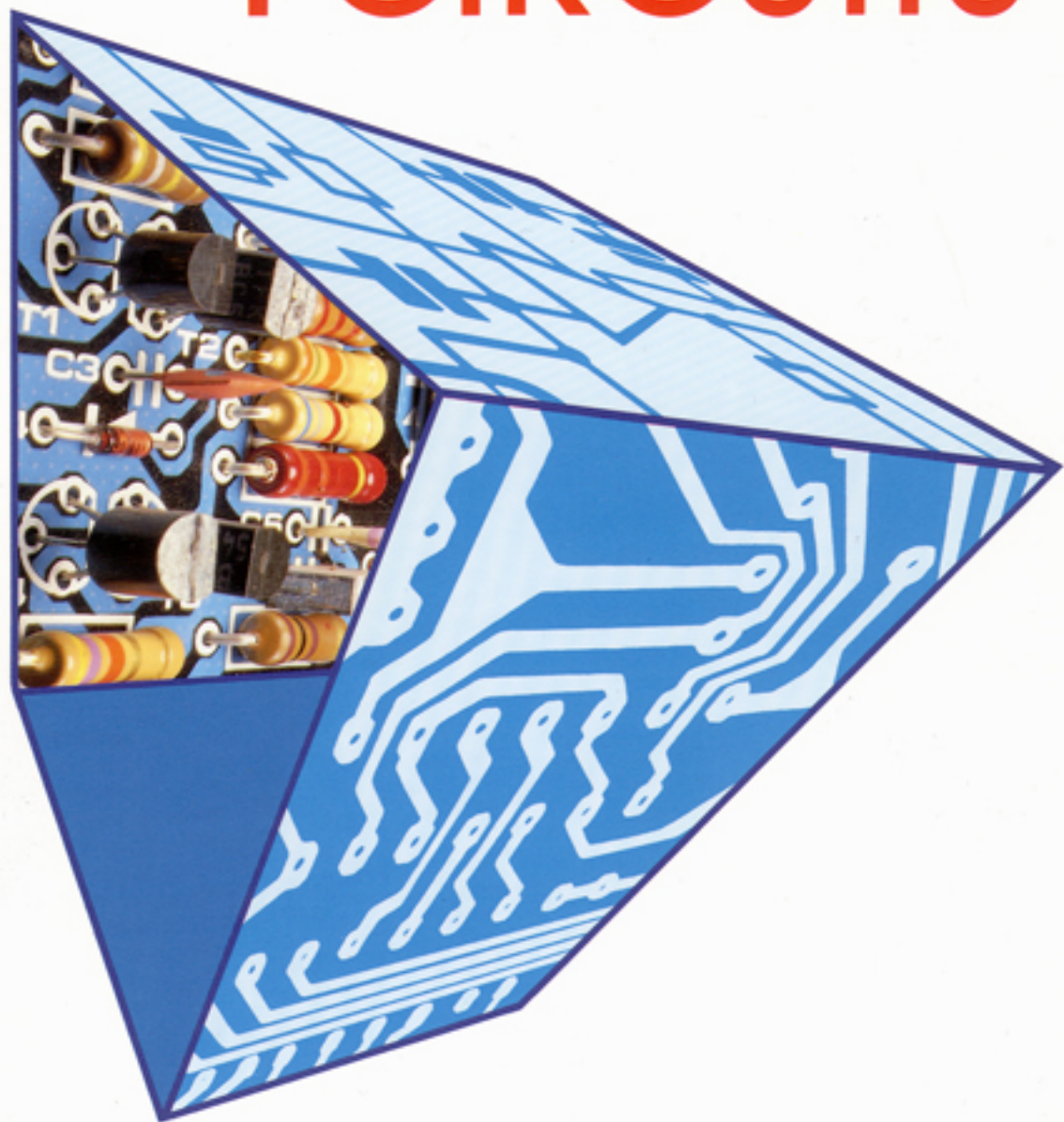


303 CIRCUITS



Elektor Electronics

303 CIRCUITS



A WOLTERS-KLUWER COMPANY

Elektor Electronics

1 Harlequin Avenue • Great West Road
BRENTFORD • Middlesex TW8 9EW • ENGLAND
Telephone: 01-847 2618 • Telex: 917490

All rights reserved. No part of this book may be reproduced or transmitted in any form, or by any means, including photocopying and recording, without the prior written permission of the publishers. Such written permission must also be obtained before any part of this book is stored in a retrieval system of any nature.

The circuits and other diagrams contained in this book are for domestic use only. Patent protection may exist with respect to circuits, devices, components, etc. described in this book. The publishers do not accept responsibility for failing to identify such patent or other protection.

This book is sold subject to the Standard Conditions of Sale of Net Books and may not be re-sold in the United Kingdom below the net price given by the publishers in their current price list.

First printed 1988

Copyright © 1988 Elektuur BV

Printed in the Netherlands
ISBN 0 905705 26 2

WARNING!
ELECTRICITY CAN BE DANGEROUS!

The electronic projects in this book are, to the best of the author's knowledge and belief, both accurately described and safe. None the less, great care must always be taken when assembling electronic circuits which carry mains voltage, and neither the publishers nor the author can accept responsibility for any accidents which may occur.

Because electricity is dangerous, its use, application and transmission are subject to rules, regulations and guidance. These are laid down in numerous laws, Electricity Generating Board regulations, British Standards, and IEE recommendations. Some of these may be obtained from your local electricity showroom, but most, if not all, should be available for reference in your local library.

contents

CIRCUITS FOR:

1. Audio & hi-fi
2. Cars & bicycles
3. Computers & microprocessors
4. Design ideas
5. Electroponics
6. HF & VHF
7. Hobbies & pastimes
8. Home & garden
9. Power supplies
10. Test & measurement
11. TV & video

1. AUDIO AND HI-FI

AUDIO-CONTROLLED MAINS SWITCH	9
AUDIO LINE DRIVER	10
AUDIO TRANSFER EQUALIZER	10
COMPRESSOR	11
CURRENT CORRECTED AF AMPLIFIER	13
DIGITAL AUDIO SELECTOR	14
DIGITAL VOLUME CONTROL I	15
DIGITAL VOLUME CONTROL II	17
DISCOMIXER	18
HEADPHONE AMPLIFIER	22
HI-FI HEADPHONE AMPLIFIER	25
HIGH DYNAMIC RANGE MIXER	26
INTEGRATED STEREO AMPLIFIER	27
LOUDSPEAKER PROTECTION I	27
LOUDSPEAKER PROTECTION II	29
LOUDSPEAKER PROTECTION III	30
LOW-NOISE RIAA PREAMPLIFIER	32
MICROPHONE PRE-AMPLIFIER WITH MUTE SWITCH	36
MICROPHONE-SIGNAL PROCESSOR	39
MINI-AMPLIFIER	40
MINI STEREO AMPLIFIER	40
MOSFET POWER AMPLIFIER	41
NOISE GATE	42
SIMPLE PRE-AMPLIFIER	43
SINGLE-CHIP 40 W AMPLIFIER	44
SMD HEADPHONE AMPLIFIER	45
SPEECH PROCESSOR WITH BACKGROUND SUPPRESSION	46
STEREO INDICATOR	48
STEREO PRE-AMPLIFIER WITH TONE CONTROL	48
SUBWOOFER FILTER	50
TRUE CLASS/B AMPLIFIER	51
TUNING AF POWER STAGES	52

2. CARS AND BICYCLES

AUTOMATIC CAR ALARM	54
BICYCLE LIGHTS AND ALARM	54

BRAKE LIGHTS MONITOR	55
CAR BURGLAR ALARM	56
CAR FUSE MONITOR	57
CAR LIGHTS MONITOR	57
CAR RADIO ALARM I	58
CAR RADIO ALARM II	60
COURTESEY LIGHT DELAY	60
FLASHING REAR LIGHT	61
GARAGE STOP LIGHT	62
HALOGEN LAMP PROTECTOR	63
LED REVOLUTION COUNTER	63
MOTOR-CYCLE GEAR INDICATOR	67

3. COMPUTERS AND MICROPROCESSORS

4-WAY DAC EXTENSION	68
8-BIT ADC	69
8-BIT DAC	70
16-KEY INPUT FOR MSX MICROS	71
32 KBYTE PSEUDO ROM	72
40-TRACK ADAPTOR	75
2708 ALTERNATIVES	75
6502 TRACER	76
A-D CONVERTER FOR JOYSTICKS	78
BI-DIRECTIONAL PARALLEL INTERFACE FOR C64	79
BI-DIRECTIONAL SERIAL-PARALLEL CON- VERTER	80
BUS DIRECTION ADD-ON FOR MSX EXTEN- SIONS	82
COMMUNICATION PROGRAM FOR C64	83
CPU GEAR/BOX	86
CURRENT LOOP FOR MODEM	87
DIRECT READING DIGITIZER	88
DISCRETE DAC	90
DRIVE SELECTOR	91
FILTERED CONNECTOR	92
FLOPPY CENTRING UNIT	92
FLOPPY DISC DRIVE	93
HEXADECIMAL KEYBOARD	94
IMPROVED SOUND FOR THE BBC MICRO	95
JOYSTICK ADAPTOR	96
LEVEL ADAPTOR FOR ANALOGUE JOYSTICKS	97
LISTEN-IN KEY FOR DATA RECORDERS	98
MAINS INTERFACE	98
MANDELBROT GRAPHICS	99
MORSE TRAINING WITH THE JUNIOR COMPUTER	100
PIA FOR ELECTRON	102
QL RAM EXTENSION	103
RAM EXTENSION FOR QL	104
RS232 INTERFACE	105
SAMPLE & HOLD FOR ANALOGUE SIGNALS	107