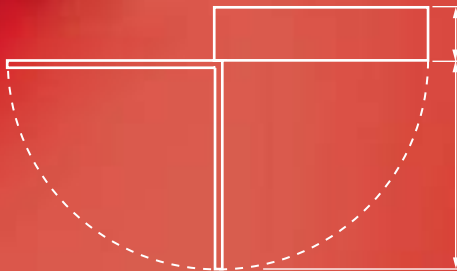
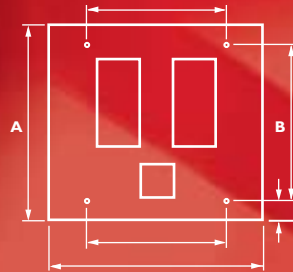
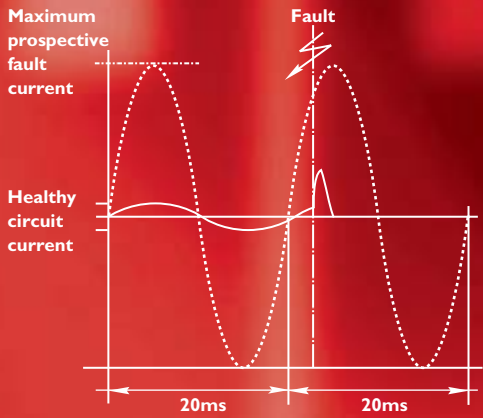
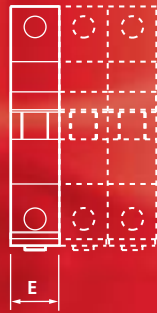
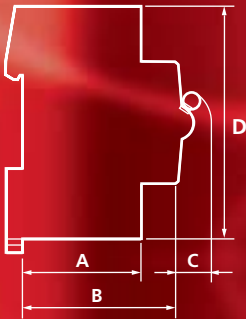
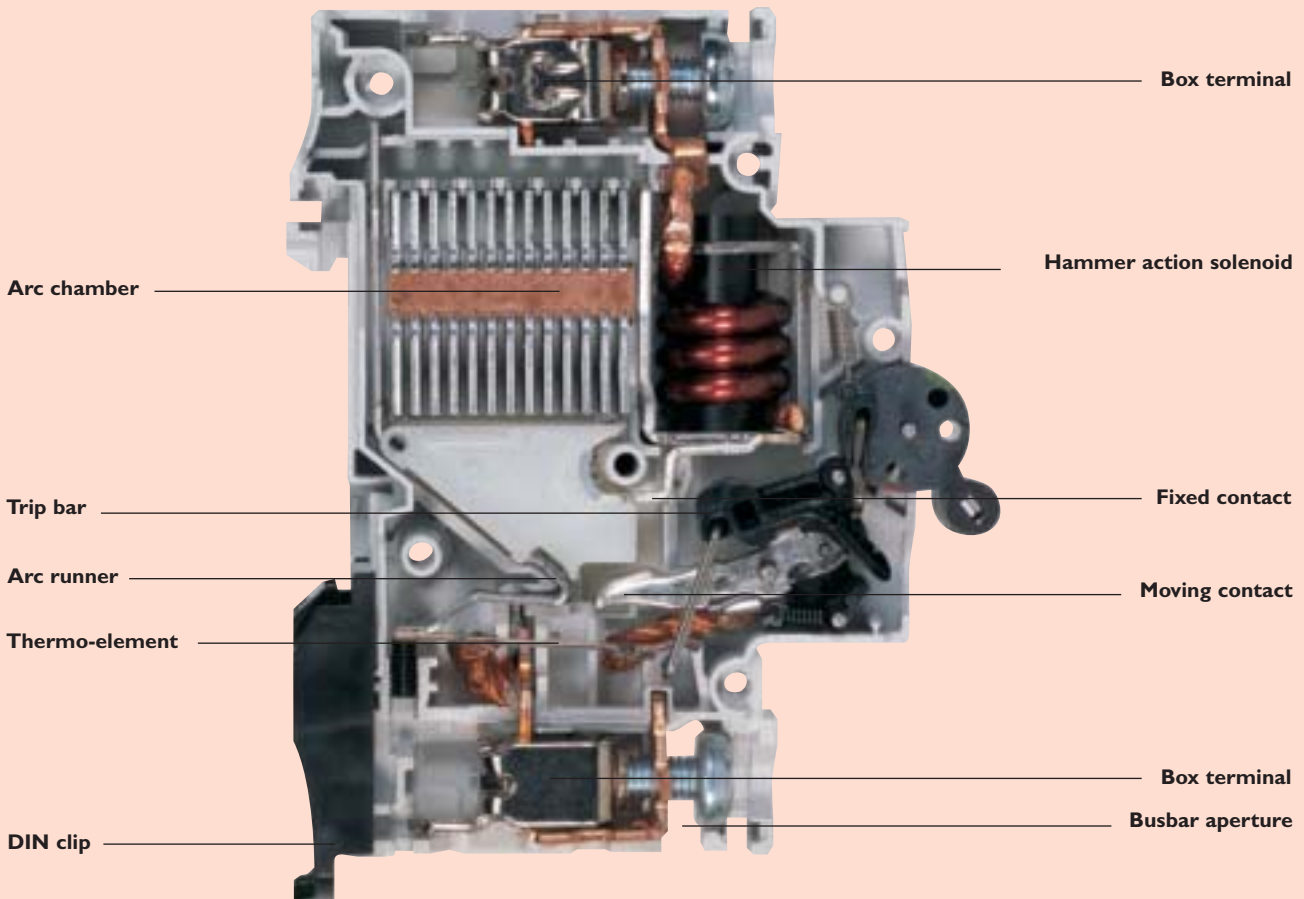


TECHNICAL DATA & DIMENSIONS





GENERAL CONSTRUCTION

Wylex MCBs are of the thermal-magnetic current limiting type, having a compact construction which has been achieved by not only minimising the number of parts but also the number of welded joints and connections. Critical material selection ensures reliability and durability. Typical of this is the choice of silver graphite for the fixed contact.

The MCB has an easy to operate handle with a trip-free toggle mechanism – so even when the handle is held in the ‘on’ position the MCB is free to trip.

AMBIENT TEMPERATURE CONSIDERATIONS

Wylex MCBs are calibrated to meet the requirements of BS EN 60898, 30°C Ref Calibration Temperature.

At other temperatures the following rating factors should be used:

At 60°C 0.9 At 20°C 1.0 At 0°C 1.1

Adjacent thermal-magnetic MCBs should not be continuously loaded at or approaching their nominal rated currents when mounted in enclosures. It is good engineering practice to apply generous derating factors or make provision for adequate free air between devices.

In these situations, and in common with other manufacturers, we recommend a 66% diversity factor is applied to the MCB nominal rated current where it is intended to load the MCBs continuously (in excess of 1 hour).

METHOD OF OPERATION

1 Moderate overload conditions

Detection of moderate overload conditions is achieved by the use of a thermo-metal element which deflects in response to the current passing through it. The thermo-metal element moves against the trip bar releasing the trip mechanism.

2 Short circuit conditions

When the current flowing through the MCB reaches a predetermined level, the solenoid directly pulls in the plunger which forcibly separates the contacts and simultaneously releases the trip mechanism.

3 Establishment of arc between fixed and moving contacts

As the moving contact moves away from the fixed contact, an arc is established. The arc runs along the arc runner to the arc chamber where it is split up between the plates and extinguished.

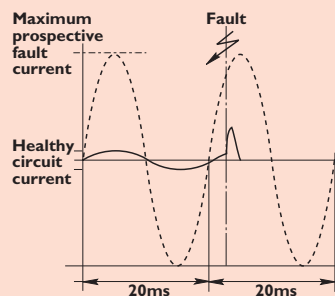
The low inertia and consequent high speed of the moving contact has a limiting effect on the flow of fault current. The rapid development of the arc, together with its accelerated extinction in the arc chamber, gives a typical operating time of 3.5–5 milliseconds.

CURRENT LIMITING ACTION

The high speed current limiting action ensures that the MCB operates before the full prospective fault current is allowed to develop.

Under fault conditions, damage can be sustained to the installation and associated equipment due to the amount of energy that passes before the current is completely interrupted. The total energy let-through depends on the value of current and the time for which it flows, and is denoted by the symbol I^2t . The high speed current limiting action of MCBs ensures that the energy let-through and any subsequent damage is minimised. This reduced energy let-through assists greatly with both back-up and discrimination considerations.

CURRENT LIMITING EFFECT

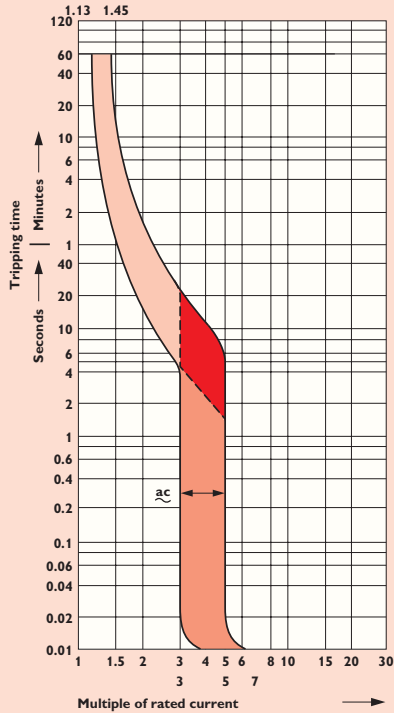


BACK-UP PROTECTION

Back-up protection is required only if the prospective short circuit current at the point of installation exceeds the breaking capacity of the MCB. When providing back-up protection consideration must be given to discrimination between the MCB and fuse.

DISCRIMINATION

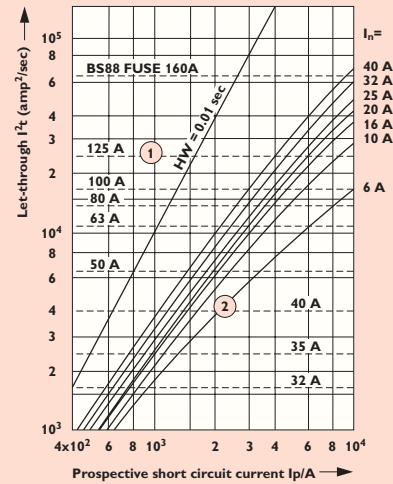
It is desirable that the protective device nearest the fault should operate first. The low energy let through of modern MCBs provides better discrimination with HRC fuse back-up than is given by earlier types of MCBs.



NSB CONSUMER UNIT MCBs

British standards	BS EN 60898: 1991
Rated voltage (single pole)	240V
Tripping characteristics	Type B
Short circuit rating	6kA
Reference calibration temperature	30°C
Terminal capacity – outgoing cable	0.75 to 25mm ²

CAT REF	RATING
NSB06	6A
NSB10	10A
NSB16	16A
NSB20	20A
NSB32	32A
NSB40	40A
NSB50	50A



- ① min melting pt (pre-arching)
eg $I_n=125A$ BS 88
- ② max let-through I^2t of MCB
eg 6A

NSB AND PSB DISTRIBUTION BOARD MCBs

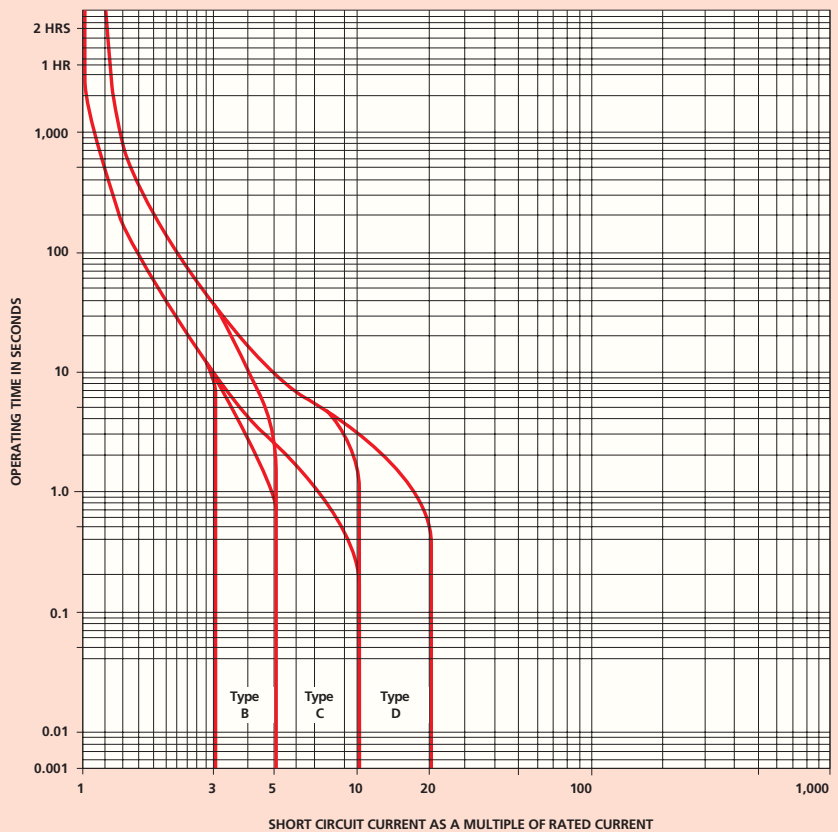
British Standards	BSEN 60898 - 1991
Rated Voltage	230/400 Volts
Tripping characteristics	Type B, C and D
Short circuit rating	6kA and 10kA
Reference calibration temperature	30°C
Terminal capacity - outgoing cable	0.75 to 25mm ²

NSBS & PSBS RCBO (COMBINED MCB/RCD)

British Standards	BSEN 61009
Rated Voltage	230 Volts
SP or SP with switched neutral	
Tripping characteristics	Type C
Short circuit rating	6kA and 10kA
Reference calibration temperature	30°C
Rated residual operating current	30mA
Single module	Type A
Two module	Type AC
Terminal capacity - outgoing cable	0.5 to 16mm ²

Unique live side busbar combi-terminal allows connection of cable up to 25mm²

Maximum neutral cable size 25mm²





OPERATION

The RCD employs the current balance principle which involves the supply conductors to the load (phase and neutral) being wound onto a common transformer core to form the primary windings.

Under healthy circuit conditions, the current in the phase conductor is equal to the current in the neutral, and the vector sum of the current is zero.

In the event of an earth fault, an amount of current will flow to earth, creating an out of balance situation in the transformer assembly. This out of balance is detected by the secondary winding of the transformer and at a pre-determined level of out of balance will activate the trip mechanism.

Single phase and neutral or three phase and neutral units (suitable for 3 or 4 wire systems) are available, the latter being suitable for balanced or unbalanced 3 phase loads.

The RCD trip mechanism will operate at a residual current of between 50–100% of its rating tripping current (sensitivity).

TRANSIENT EARTH LEAKAGE CURRENTS

All Wylex residual current devices incorporate a high level of immunity to tripping when subjected to transient earth leakage currents.

Such transients can occur when there is a significant level of capacitance to earth as can result from cable capacitance (particularly MICC) or RF filter networks. Wylex RCDs are therefore less susceptible to nuisance tripping due to transient earth leakage currents.

RESIDUAL TRIPPING CURRENTS

10mA

Used in special applications where additional protection against contact is essential due to the nature of the installation.

30mA

Tripping current designated by the IEE Wiring Regulations to provide additional protection against direct contact shock, ie socket outside the equipotential zone. TT systems, caravan installation, etc.

100mA

Suitable for use against indirect contact shock or where protection is provided to guard against firehazard, etc, rather than to provide additional protection to personnel, and where the earthing requirements need supplementing by RCD protection.

100mA time delay

Suitable for use when total RCD protection is required to supplement the system earthing and where local 30mA RCDs are used to give additional protection against direct contact. The time delay RCD will discriminate with the 30mA RCD.

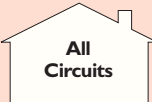
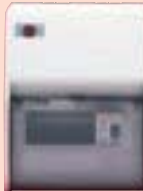
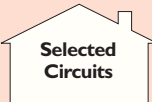

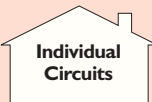





300mA

For use in large installations where plant and equipment protection are the main considerations and high levels of earth leakage are experienced.

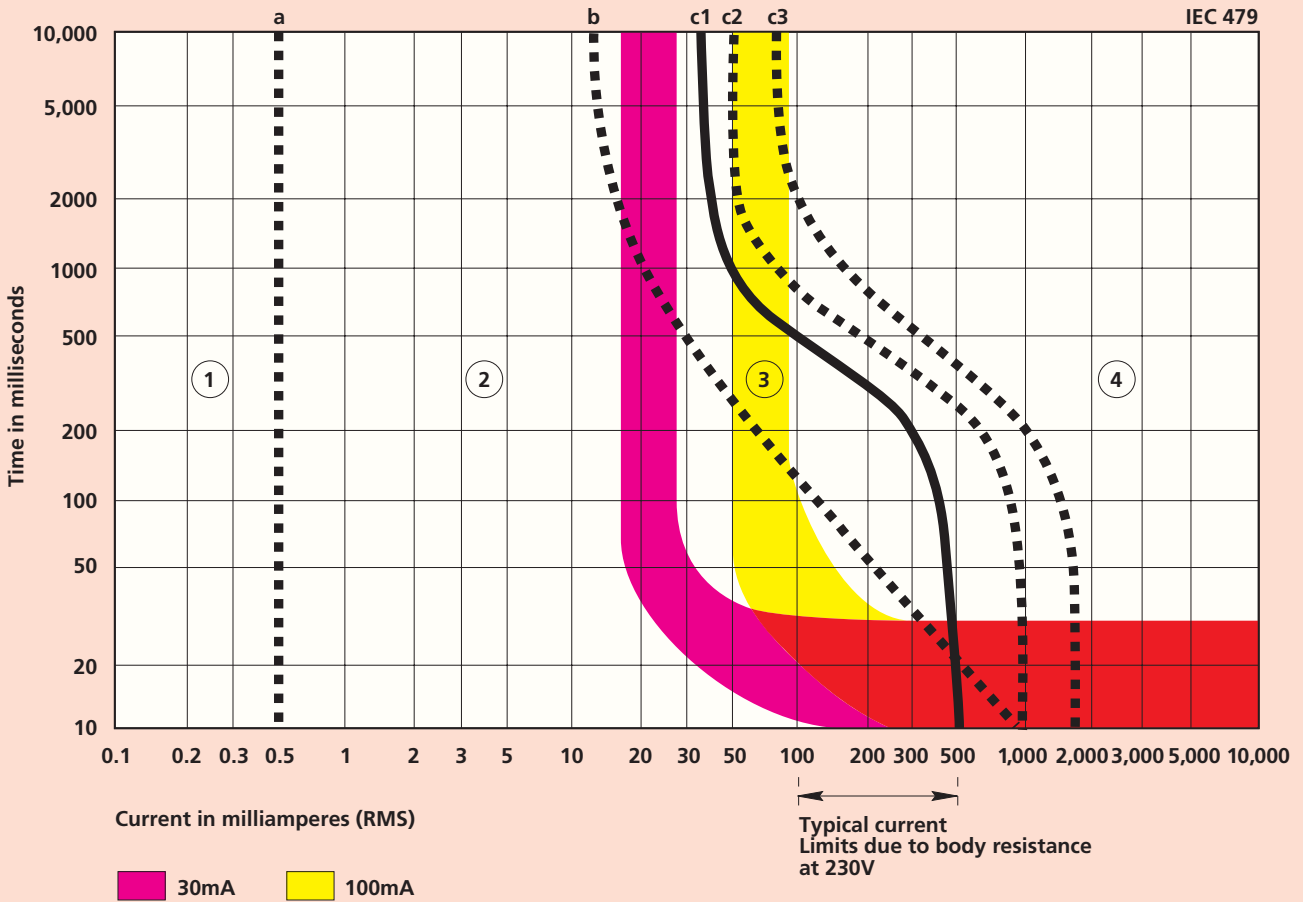
APPLICATION GUIDE FOR RESIDUAL CURRENT DEVICES

A test button is provided on all RCDs to enable the operation of the device to be checked.

It is recommended that an RCD is tested regularly. (See BS 7671 Regulation 514-12-02).

Scope of Protection	Application Method	Type
 All Circuits	 RCCB controlled consumer unit	RCCB
 Selected Circuits	 Split load consumer unit	RCCB
 Individual Circuits	 Consumer unit with RCBO controlling individual circuit SP or DP option available	RCBO
 Individual Socket Outlets	 Combined RCD / socket outlet	SRCD
 Individual Appliances	 Combined RCD / adaptor	PRCD

TIME/CURRENT ZONES OF EFFECT OF AC CURRENT (15-100Hz) ON PERSONS



Zone Physiological effects

- 1 Usually no reaction effects.
- 2 Usually no harmful physiological effects.
- 3 Usually no organic damage to be expected. Likelihood of muscular contraction and difficulty of breathing, reversible disturbances of formation and conduction of impulses in the heart, and transient cardiac arrest without ventricular fibrillation increases with current magnitude and time.
- 4 In addition to the effects of zone 3, probability of ventricular fibrillation increased up to 5% (Curve C2), up to 50% (Curve C3) and above 50% beyond Curve C3. Increasing with magnitude and time, pathophysiological effects such as cardiac arrest, breathing arrest and heavy burns may occur.

FAULT CURRENT SENSITIVITY

Semi-conductor devices are now incorporated in equipment used throughout industry, commerce and in the home. Typically, the purpose of these semi-conductor devices is for monitoring and controlling industrial equipment, eg speed controls for small motors and temperature controls, along with extensive use in computers, VDUs, printers, washing machines, etc. As the equipment is fed from the mains electrical supply, in the event of an earth fault the presence of semi-conductors may result in the normal ac waveform being replaced by a non-sinusoidal fault current. In some cases the waveform may be rectified or chopped. These waveforms are said to contain a pulsating dc component which can either partially desensitise or totally disable a standard Type AC RCD. New International standards IEC 1008 (RCCBs) and IEC 1009 (RCBOs) divide RCDs into two performance classes:

Type AC

RCDs for which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly arising.

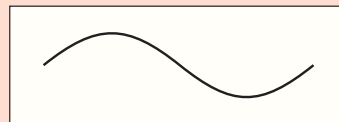
Type A

RCDs for which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly arising.

To ensure the correct level of protection, check for the following symbols:

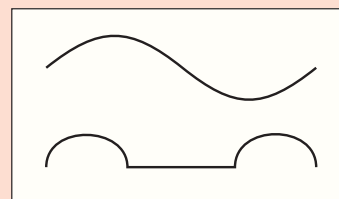
TYPE AC

normal ac sensitivity



TYPE A

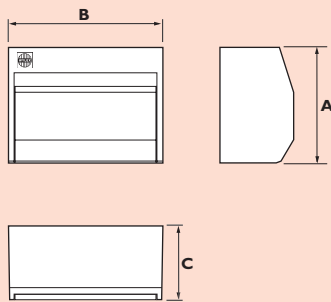
pulsating dc sensitivity



Wylex RCDs are available as both Type AC and Type A devices.



INSULATED



BOX DIMENSIONS

A=160mm(6.3"), B=117mm(4.6"), C=102mm(4")

4 MODULE

NH204/40	NHRM204/40
NH204/63	NHRM204/63
NHRS204/40	NH4ED4
NHRS204/63	

BOX DIMENSIONS

A=230mm(9"), B=187mm(7.5"), C=120mm(4.7")

7 MODULE

NH504	NHRM504
NHRS504	NHTM504
	NH7ED4

BOX DIMENSIONS

A=230mm(9"), B=239mm(9.6"), C=120mm(4.7")

10 MODULE

NH804	NHRS3304
NHRS804	NHRS4204
NHRM804	NH504+3
NHSTM2404	NHRS504+3
NHSTM3304	NHRM504+3
NHSTM4204	NHTM804
NHRS2404	NH10ED4
NH11X2404	NH11X3304
NHRS6SL	

BOX DIMENSIONS

A=230mm(9"), B=290mm(11.5"), C=120mm(4.7")

13 MODULE

NH1104	NHRS3604
NHRS1104	NHRS6304
NHRM1104	NHIIIX5404
NHSTM3604	NHIIIX4504
NHSTM4504	NH804+3
NHSTM5404	NHRS804+3
NHSTM6304	NHRM804+3
NHRS5404	NHTM1104
NHRS4504	NH13ED4
NHRS9SL	

BOX DIMENSIONS

A=230mm(9"), B=340mm(13.5"), C=120mm(4.7")

16 MODULE

NH1404	NHRS9304
NHRS1404	NHIIIX7504
NHRM1404	NHIIIX6604
NHSTM3904	NHIIIX5704
NHSTM4804	NHRSX5704
NHSTM5704	NHRSX6604
NHSTM6604	NHRSX7504
NH11X3904	NHTM1404
NH11X4804	

BOX DIMENSIONS

A=230mm(9"), B=435mm(17.3"), C=120mm(4.7")

21 MODULE

NHSTM7504	NH804+6
NHSTM8404	NH1104+3
NHSTM9304	NHRS804+6
NHRS3904	NHRS1104+3
NHRS4804	NHRM804+6
NHRS6604	NHRM1104+3
NHRS5704	NH16ED4
NHRS7504	NHIISS5504
NHRS8404	
NHRS12SL	

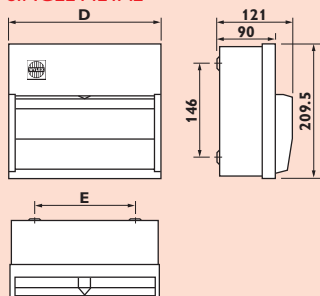
BOX DIMENSIONS

A=230mm(9"), B=435mm(17.3"), C=120mm(4.7")

21 MODULE

NH1904	NHRS71004
NHRS1904	NHRS9804
NHRM1904	NHRS8904
NHSTM12504	NHRS51204
NHSTM11604	NHIIIX9804
NHSTM8904	NHIIIX8904
NHSTM9804	NHRSX8904
NHSTM10704	NHRSX9804
NHSTM71004	NHRS6504+6
NHSTM61104	NHRS5604+6
NHSTM51204	NHRS7704+3
NHRS12504	NHRS8604+3
NHRS11604	NHRS6804+3
NHRS10704	NHTM1904
NHRS61104	NH21ED4
NHRS17SL	NHIISS8704
	NHIIIX11604
	NHIIIX51204

SINGLE METAL



BOX DIMENSIONS

209(H) 117(W) 90(D) 120(D)

4 MODULE

NH206/40	NHRS206/40
NH206/63	NHRS206/63

BOX DIMENSIONS

D=188mm(7.4"), E=107mm(4.2")

7 MODULE

NH506	NHRS506
NHTM506	NHRM506
NH7ED6	

BOX DIMENSIONS

D=292mm(11.5"), E=210mm(8.3")

13 MODULE

NHRM1106	NHRS806+3
NHSTM3606	NHRS1106
NH1106	NHRS806+3
NHRS4506	NHRS5406
NHSTM5406	NH13ED6
NH806+3	NHSTM4506
NHRS5406	NHRS6306
NHRS9SLM	NHTM1106
NH11X2406	NH11X3306

BOX DIMENSIONS

D=353mm(13.5"), E=260mm(10.2")

16 MODULE

NH1406	NHSTM6606
NHRS1106+3	NHRS3906
NHRS4806	NHSTM7506
NHRS1406	NHRM806+6
NHRM1106+3	NHTM1406
NHRS6606	NHRS12SLM
NHRM1406	NH16ED6
NH806+6	NH1106+3
NHRS7506	NHSTM8406

BOX DIMENSIONS

D=438mm(17.2"), E=235.7mm(10.1")

21 MODULE

NH1906	NHRS1906
NHRS61106	NHRS8906
NHRS9806	NHSTM71006
NHRS17SLM	NHSTM9806
NHSTM9806	NHRS5606+6
NH21ED6	NHTM1906
NHSTM8906	NHIIIX51206
	NHIIIX11606

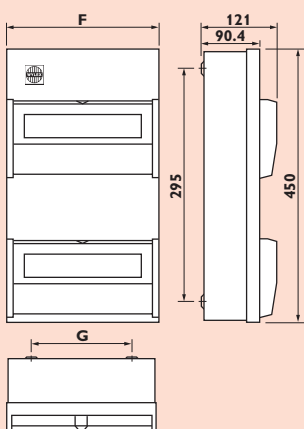
BOX DIMENSIONS

D=241mm(9.5"), E=160mm(6.3")

10 MODULE

NHRM806	NH806
NH10ED6	NHRS806
NHRS2406	NHSTM2406
NHRS3306	NHSTM3306
NHRS4206	NHTM806
NHRS6SLM	

DUPLEX METAL



BOX DIMENSIONS

F=241mm(9.5"), G=160mm(6.3")

NHDIS88	NHDISX88
NHDTMS88	NHDSSX88
NHDIIIX88	

BOX DIMENSIONS

F=292mm(11.5"), G=210mm(8.3")

NHDIS1111	NHDISX1111
NHDTMS1111	NHDSSX1111
NHDIIIX1111	

BOX DIMENSIONS

F=343mm(13.5"), G=260mm(10.2")

NHDIS1414	NHDISX1414
NHDTMS1414	NHDSSX1414
NHDIIIX1414	

BOX DIMENSIONS

F=430mm(17.2"), G=235.7mm(10.1")

NHDIS1919	NHDISX1919
NHDTMS1919	NHDSSX1919
NHDIIIX1919	

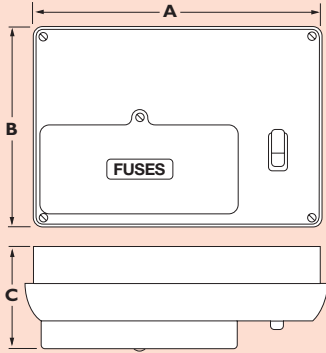
STANDARDS

Switches BS EN 60947-3. Double pole 240V 50Hz. Category of duty AC21.

Consumer units BS EN 60439-3.

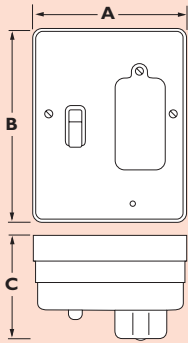
RCDs BS EN 61008. Degree of protection IP2X. **RCBOs** BS EN 61009.

STANDARD RANGE



INSULATED-MAIN SWITCH ISOLATOR

CAT REF	DIMENSIONS		
	A	B	C
104	98	121	68
204	125	120	70
304	190	155	95
404	190	155	95
604	272	186	103
804	323	186	103



METAL-MAIN SWITCH ISOLATOR

CAT REF	DIMENSIONS		
	A	B	C
108/160	143	178	99
206	140	131	93
306	210	153	99
406	210	153	99
606	293	210	104

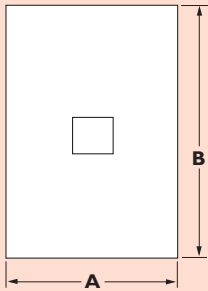
METAL-45A AND 60A SWITCHFUSES

CAT REF	DIMENSIONS		
	A	B	C
106	112	131	80
108M/160CM	172	242	98

METAL-100A DOUBLE POLE SWITCHFUSE

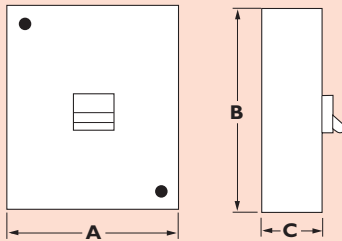
CAT REF	DIMENSIONS		
	A	B	C
110M	178	305	76
110M/80	178	305	76
110M/63	178	305	76

ENCLOSURES



CAT REF	IP RATING	DIMENSIONS	
		A	B
ESE2	IP40	60	153
ESE2L	IP20	60	140
WBE3	IP65	85	160
ESI4	IP40	100	150
ESM6	IP40	90	225
ESM7	IP54	90	225
ESE4	IP20	77	140
WBE4	IP65	110	160
ESM11	IP54	120	225
ESM13	IP54	137	318
ESM8	IP40	120	225

ISOLATORS



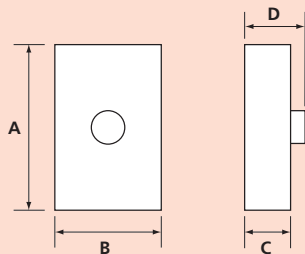
CAT REF	DIMENSIONS			Terminal Capacity
	A	B	C	
832A	62	76	30	10
860A	57	79	29	25
810X	53	94	77	35
810A	58	170	77	35
810E	76	203	76	35

CAT REF	DIMENSIONS			Terminal Capacity
	A	B	C	
910E	178	305	76	70
921X	72	45	48	10
921E	114	133	61	10
REC2S	78	150	65	50
REC2	100	150	65	50
REC3	100	150	65	50
REC4	100	150	65	50

TECHNICAL INFORMATION

	Sheet Steel Enclosure						
RATING IN AMPS	20A	32A	40A	63A	63A*	100A	125A
Rated Insulation Voltage U_i (V)	800	800	800	800	800	800	800
Dielectric Strength (kV) 50 Hz 1min	3	3	3	3	3	3	3
Shock Resistance U_{imp} (kV)	8	8	8	8	8	8	8
OPERATIONAL CURRENT I_e (A)							
415 V AC - AC21A / AC21B	20	32	40	63	80	100	125
AC22A / AC22B	20	32	40	63	80	100	125
AC23A / AC23B	20	32	40	63	80	80	80
500 V AC - AC21A / AC21B	20	32	40	63	80	100	125
AC22A / AC22B	20	32	40	63	80	100	125
AC23A / AC23B	20	32	40	40	63	63	63
690 V AC - AC20A / AC20B	20	32	40	63	80	100	125
AC21A / AC21B	20	32	40	63	80	100	125
AC22A / AC22B	20	32	40	63	80	100	100
AC23A / AC23B	20	25	25	25	50	50	50
MOTOR POWER (KW) AC 23							
415 V AC	7.5	11	11	15	18.5	37	40
500 V AC	7.5	11	15	18.5	22	37	37
690 V AC	11	11	18.5	18.5	25	30	30
FUSE TYPES TO BS88							
OVERLOAD CAPACITY							
Fuse rating gG	20	32	40	63/40	63	100	125
Short circuit current with fuses (kA Rms)	50	50	50	20/50	50	20	15
Asymmetric short time rating current (kA peak)	6	6	6	9	9	9	9
Admissible short time current 1 s. (kA Rms)	1.26	1.26	1.26	1.5	1.5	1.5	1.5
MAKING & BREAKING CHARACTERISTICS							
Breaking capacity (A Rms) 415 V AC 23 A	160	256	320	504	504	640	640
Making capacity (A Rms) 415 V AC 23 A	200	320	400	630	630	800	800
WITHSTAND							
Mechanical (number of operations) x 1000	100	100	100	100	30	30	30
Electrical (number of operations at 415V AC 23A) x 1000	3	3	3	3	1.5	1.5	1.5
CONNECTION							
Maximum Cu cable section (mm ²) lth using stranded cable (mm ²)	16	16	16	16	50	50	50
WEIGHT (KG)							
3 pole	2.00	2.00	2.00	2.00	2.50	2.50	2.50
4 pole	2.00	2.00	2.00	2.00	2.50	2.50	2.50

DIMENSIONS



STEEL ENCLOSURES

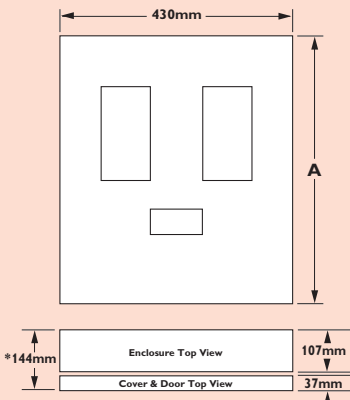
BOX	A	B	C	D
1	220	158	136	172.5
2	325	158	136	172.5

* Box size 2 steel enclosed switch.

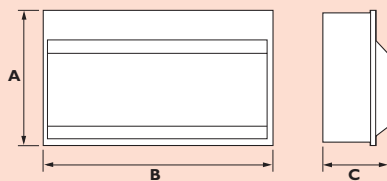
Dimensions are overall including screw heads.

STANDARDS

Switches	Multipole: 415V 50Hz BSEN 60947-3 1992 Category of duty AC22A
MCBs	BSEN 60898: 1991 Type B, C and D 6 & 10kA
Short circuit rating	6 & 10kA
Distribution Boards	BS EN 60439-3
Degree of Protection.	For indoor use only (IP3X)



*including fixing feet which are 3.5mm high



CONSTRUCTION

Wylex NH MCB distribution board enclosures are fabricated in heavy gauge steel and are rust protected and highly resistant to both weathering and mechanical damage. Incorporated in the distribution boards are multi-terminal dual earth and neutral bars. They are designed for ease of installation and have ample wiring space.

The WYLEX PSB miniature circuit breakers are rated at 10kA and are of the fault limiting type.

When a short circuit occurs, the current operates a solenoid which trips the mechanism and forces the moving contact away from the fixed contact. The arc generated is forced into an arcing chamber which incorporates splitter plates, to divide and cool it, reducing the total operating time to less than 5ms. This high speed operation substantially reduces the 'let through' energy (I^2t) keeping additional damage at the point of the fault to a minimum. Additionally this allows discrimination with HRC fuses at high fault levels.

125A DISTRIBUTION BOARDS

CAT REF	DIMENSION A mm
NHTN4	488.4
NHTN6	569.4
NHTN8	650.4
NHTN12	812.4
NHTN16	893.4
NHTN20	974.4
NHTN24	1136.4

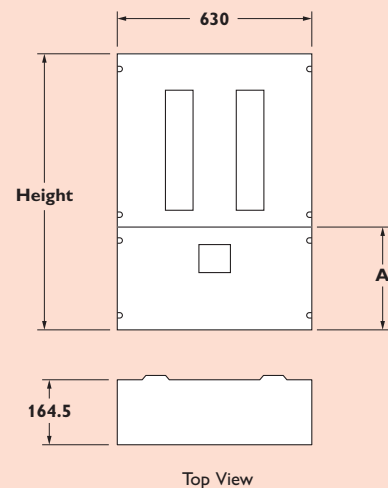
250A DISTRIBUTION BOARDS

CAT REF	DIMENSION A mm
NHTN2540	650
NHTN2560	815
NHTN2580	815
NHTN25120	895
NHTN25160	975
NHTN25200	1085
NHTN25240	1190

Depth 155mm-all sizes

SINGLE PHASE DISTRIBUTION BOARDS

CAT REF	DIMENSIONS		
	A mm	B mm	C mm
NHSN51	210	188	105
NHSN81	210	242	105
NHSN111	210	293	105
NHSN141	210	343	105
NHSN161	210	394	105
NHSN191	210	394	105

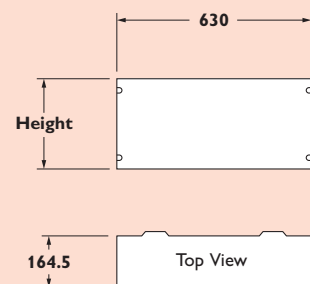


200A-250A PANEL BOARDS

MODULAR HEIGHT	HEIGHT (mm)	A (mm)	CAT REF
17	902	420	NHPB6SW250
17	902	420	NHPB8SW250
20	1060	420	NHPB12SW250
17	902	420	NHPB6CB200
17	902	420	NHPB8CB200
20	1060	420	NHPB12CB200

400A PANEL BOARDS

MODULAR HEIGHT	HEIGHT (mm)	A (mm)	CAT REF
20	1060	577.5	NHPB6SW400
20	1060	577.5	NHPB8SW400
23	1317	577.5	NHPB12SW400
26	1375	577.5	NHPB16SW400
20	1060	577.5	NHPB6CB400
20	1060	577.5	NHPB8CB400
23	1317	577.5	NHPB12CB400
26	1375	577.5	NHPB16CB400

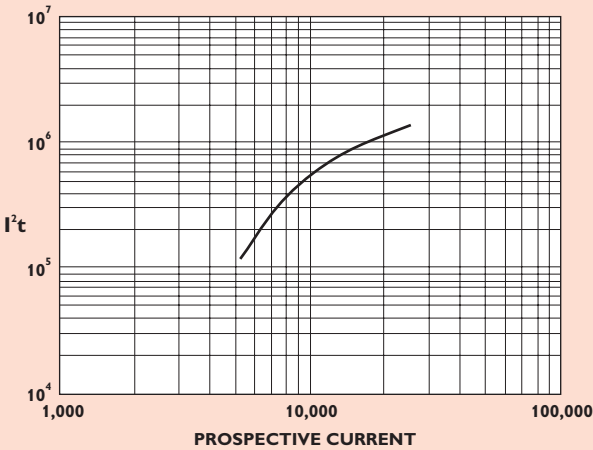


NH125 MODULAR MCB/DIN ENCLOSURES

MODULAR HEIGHT	HEIGHT (mm)	CAT REF
4	*210	TO ORDER
8	*420	TO ORDER

* Dimensions for Accessory boxes do not include end plate dimensions, this is because these 2 boxes are add on units and are supplied without end plates.

The end plate is removed from the panel board, that is connected to the add on unit. Then fitted to the top of the add on unit.



NHG MCCB SPECIFICATION

- Specification BSEN60947-2
- Current Range 25 – 125A
- Ue Rated Operation Voltage 240V SP 415V TP
- Ui Rated Insulation Voltage 500V AC
- Rated Frequency 50/60Hz
- Release Thermal Magnetic
- Adjustment None
- Ambient Range -20°C to 55°C
- Humidity Range 0 – 90%
- Weight SP - 0.4kg TP - 0.95kg
- Mechanical Duration 8000 operations

SHORT CIRCUIT BREAKING CAPACITY

Type	GB	GN
Ue	SP/TP	TP
220 V	30	30
380 V	16	25
415 V	16	25
Ics = 50% Icu		

INSTANTANEOUS TRIP BANDS

	SP	TP
25 – 32A	500A	400A
40 – 80A	800A	600A
100 – 125A	1250A	600A
Non-adjustable		±10%

TERMINALS

Front-connected clamps –
 25A to 125A – 70mm² cable
 – 10mm strip

AUXILIARY EQUIPMENT

NHG MCCBs

Auxiliary Contact Ratings (A)

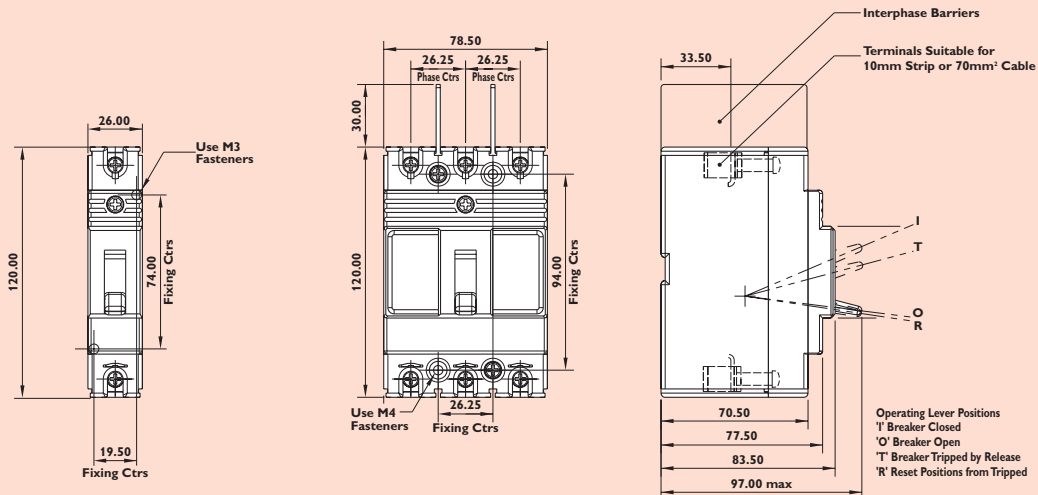
Voltage	Resistive Load (A)		Tungsten Load Inductive Load (A)	
	NC (A)	NO (A)	NC (A)	NO (A)
AC				
125	3	0.5	0.5	3
250	3	0.5	0.5	3
DC				
30	3	3	0.5	3
50	1	0.7	0.7	1
125	0.5	0.4	0.4	0.05

MAXIMUM EARTH LOOP IMPEDANCES FOR TRIPLE POLE MCCBs Zs (ohms) for Uo = 240V~

Current Rating (A)	25	32	40	50	63	80	100	125
0.4 Seconds Disconnection Time	0.17Ω	0.17Ω	0.13Ω	0.13Ω	0.13Ω	0.13Ω	0.13Ω	0.13Ω
5.00 Seconds Disconnection Time	0.96Ω	0.75Ω	0.60Ω	0.48Ω	0.38Ω	0.30Ω	0.24Ω	0.19Ω

MAXIMUM EARTH LOOP IMPEDANCES FOR SINGLE POLE MCCBs Zs (ohms) for Uo = 240V~

Current Rating (A)	25	32	40	50	63	80	100	125
0.4 Seconds Disconnection Time	0.43Ω	0.43Ω	0.27Ω	0.27Ω	0.27Ω	0.27Ω	0.17Ω	0.17Ω
5.00 Seconds Disconnection Time	0.96Ω	0.75Ω	0.60Ω	0.48Ω	0.38Ω	0.30Ω	0.24Ω	0.19Ω



CONTACTORS

TYPE	POWER (W)	C(yF)	I(A)	MESB-20NC MESB-20NO	MESB-24NC MESB-24NO	MESB-40NC MESB-40NO	MESB-63NC MESB-63NO
Incandescent Lamps	60	-	0.26	23	29	65	85
	100	-	0.43	14	16	40	50
	200	-	0.87	7	8	20	25
	500	-	2.17	3	3	8	10
	1000	-	4.35	1	1	4	5
Flourescent Lamps uncorrected and Series correction	18	-	0.37	22	24	90	140
	24	-	0.35	22	24	90	140
	36	-	0.43	17	20	65	95
	58	-	0.67	14	17	45	70
Flourescent Lamps lead-lag circuit	18	-	0.11	2 x 30	2 x 40	2 x 100	2 x 150
	24	-	0.14	2 x 24	2 x 31	2 x 78	2 x 118
	36	-	0.22	2 x 17	2 x 24	2 x 65	2 x 95
	58	-	0.35	2 x 10	2 x 14	2 x 40	2 x 60
Flourescent Lamps Parallel correction	18	4.5	0.12	7	8	48	73
	24	4.5	0.15	7	8	48	73
	36	4.5	0.2	7	8	48	73
	58	7	0.32	4	5	31	47
Flourescent Lamps with electronic ballast units (EVG)	1 x 18	-	0.09	25	35	100	140
	1 x 36	-	0.16	15	20	52	75
	1 x 58	-	0.25	14	19	50	72
	2 x 18	-	0.17	12	17	50	70
	2 x 36	-	0.32	7	10	26	38
	2 x 58	-	0.49	7	9	25	36
High-pressure Mercury-vapour Lamps uncorrected	50	-	0.61	14	18	38	55
	80	-	0.8	10	13	29	42
	125	-	1.15	7	9	20	29
	250	-	2.15	4	5	10	15
	400	-	3.25	2	3	7	10
	700	-	5.4	1	2	4	6
High Pressure Mercury-vapour Lamps Parallel correction	1000	-	7.5	1	1	3	4
	50	7	0.28	4	5	31	47
	80	8	0.41	4	5	27	41
	125	10	0.65	3	4	22	33
	250	18	1.22	1	2	12	18
	400	25	1.95	1	1	9	13
Halogen metal-vapour Lamps uncorrected	700	45	3.45	-	-	5	7
	1000	60	4.8	-	-	4	5
	35	-	0.53	18	22	43	60
	70	-	1	10	12	23	32
	150	-	1.8	5	7	12	18
	250	-	3	3	4	7	10
Halogen metal-vapour Lamps Parallel correction	400	-	3.5	3	3	6	9
	1000	-	9.5	1	1	2	3
	2000	-	16.5	-	-	1	1
	35	6	0.25	5	6	36	50
	70	12	0.45	2	3	18	25
	150	20	0.75	1	1	11	15
High-pressure Sodium-vapour Lamps uncorrected	250	33	1.5	-	1	6	9
	400	35	2.5	-	1	6	8
	1000	95	5.8	-	-	2	3
	2000	148	11.5	-	-	1	2
High-pressure Sodium-vapour Lamps parallel	150	-	1.8	5	6	17	22
	250	-	3	3	4	10	13
	400	-	4.7	2	2	6	8
	1000	-	10.3	-	1	3	3
Low-pressure Sodium-vapour Lamps uncorrected	150	20	0.83	1	1	11	16
	250	33	1.5	-	1	6	10
	400	48	2.4	-	-	4	6
	1000	106	6.3	-	-	2	3
Low-pressure Sodium-vapour Lamps Parallel correction	18	-	0.35	22	27	71	90
	35	-	1.5	7	9	23	30
	55	-	1.5	7	9	23	30
	90	-	2.4	4	5	14	19
	135	-	3.5	3	4	10	13
	180	-	3.3	3	4	10	13
Low-pressure Sodium-vapour Lamps Parallel correction	18	5	0.35	6	7	44	66
	35	20	0.31	1	1	11	16
	55	20	0.42	1	1	11	16
	90	26	0.63	1	1	8	12
Low-pressure Sodium-vapour Lamps Parallel correction	135	45	0.94	-	-	4	7
	180	40	1.16	-	-	5	8

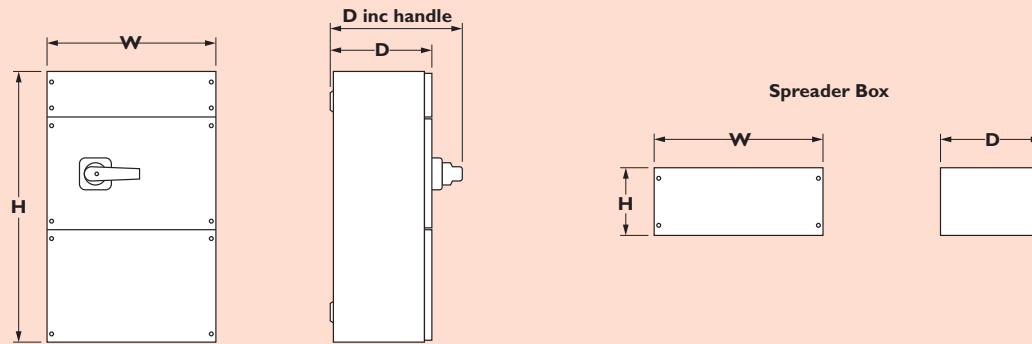
	Thermal Rating per Pole	Motor Rating AC3 (kW)	
		230V	400V
MESB-20NC MESB-20NO	20	1.3	-
MESB-24NC MESB-24NO	24	2.2	4
MESB-40NC MESB-40NO	40	5.5	11
MESB-63NC MESB-63NO	63	8.5	15

AC Ratings in accordance with BSEN60947-5-1 and BSEN 60947-4-1

Definitions: AC1 Primarily Resistive Load but may be slightly inductive AC3 Medium-Starting-duty motors, starting and switching off of squirrel-cage motors

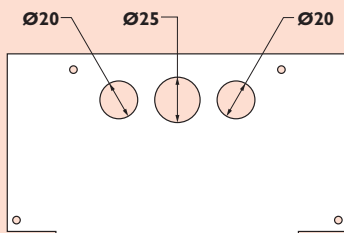


DIMENSION DETAILS



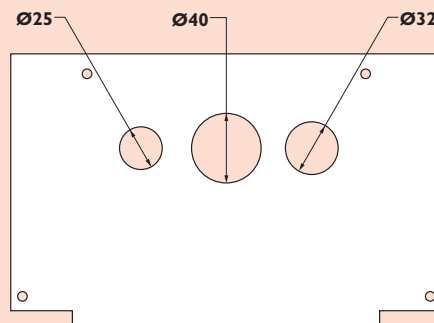
HOUSED UNIT DIMENSIONS (mm)

HOUSED UNIT	H	W	D	D inc. handle		H	W	D
20-32A	220	210	135	200				
63-100A	420	262	188	258	SPREADER BOX	105	262	183
125-200A	525	315	240	273	SPREADER BOX	105	315	210
315-400A	735	420	240	305	SPREADER BOX	210	420	240



20/32A Gland Plates

All Dimensions in mm



63-100A Gland Plates

SPECIFICATION

- BSEN947-3
- Range of ratings 20A - 400A
- Pole configurations SP & N, and TP & N
- Voltage rating 415V ac
- Frequency rating 50/60 Hz
- Fuse type BS88

TECHNICAL DATA

	20-32A	63A	100A	125A	160A	200A	315A	400A
Mechanical Endurance	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Fused s/c Current kA RMS	80	80	80	80	80	80	80	80
Ratings	A kW	A kW	A kW	A kW	A kW	A kW	A kW	A kW
415V Ie/Ipe	32 15	63 30	100 55	125 75	160 90	200 110	315 160	400 220
Isolator links	-	NHCIL2	NHCIL3	NHCIL3	NHCIL3	NHCIL3	NHCIL4	NHCIL4

FUSE COMPARISON DATA

CURRENT RATING	BS 88 REFERENCE	LAWSON	GEC	BUSSMAN
20/32A	A1	NIT	NIT	NITD
63A	A3, A2	TIS	TIS	BAO
100A	A4	TCP	TCP	CEO
125A	A4	CTFP	TCP	DEO
160A	A4	CTFP	TCP	DEO
200A	A4	CTFP	TCP	DEO
315A	B3	TKF	TKF	ED
400A	B4, B3, B2,B1	TFM	TFM	ED

List No	Page No	List No	Page No	List No	Page No	List No	Page No
104	24	NH00	9	NHGPCB1253	19	NHRS1104	3
106	24	NH00	13	NHGPCB251	19	NHRS1104+3	3
108	24	NH10ED4	29	NHGPCB253	19	NHRS1106	6
204	24	NH10ED6	29	NHGPCB321	19	NHRS1106+3	7
206	24	NH100HP	5	NHGPCB323	19	NHRS11604	4
304	24	NH1104	3	NHGPCB401	19	NHRS11606	6
306	24	NH1104+3	3	NHGPCB403	19	NHRS12504	4
404	24	NH1106	6	NHGPCB501	19	NHRS12506	6
406	24	NH1106+3	7	NHGPCB503	19	NHRS12SL	4
604	24	NH13ED4	29	NHGPCB631	19	NHRS12SLM	7
606	24	NH13ED6	29	NHGPCB633	19	NHRS1404	3
804	24	NH1404	3	NHGPCB801	19	NHRS1406	6
106 RED	24	NH1406	6	NHGPCB803	19	NHRS17SL	4
108M	24	NH16ED4	29	NHIX11604	3	NHRS17SLM	7
110M	24	NH16ED6	29	NHIX11606	7	NHRS1904	3
110M/63	24	NH1904	3	NHIX2404	3	NHRS1906	6
110M/80	24	NH1906	6	NHIX2406	7	NHRS204/40	3
145CM	24	NH200TPSW	13	NHIX3304	3	NHRS204/63	3
160C	24	NH204/40	3	NHIX3306	7	NHRS206/40	6
160CM	24	NH204/63	3	NHIX3904	3	NHRS206/63	6
3TPBP	13	NH206/40	6	NHIX4504	3	NHRS2404	4
921E	31	NH206/63	6	NHIX4506	7	NHRS2406	6
921X	31	NH21ED4	29	NHIX4804	3	NHRS304IP	5
B10	25	NH21ED6	20	NHIX51204	3	NHRS3304	4
B16	25	NH304IP	5	NHIX51206	7	NHRS3306	6
B20	25	NH4ED4	29	NHIX5404	3	NHRS3604	4
B32	25	NH4ED6	29	NHIX5406	7	NHRS3606	6
B40	25	NH4PINKIT	13	NHIX5704	3	NHRS3904	4
B6	25	NH504	3	NHIX5706	7	NHRS3906	6
C15	25	NH504+3	3	NHIX6604	3	NHRS4204	4
C20	25	NH506	6	NHIX6606	7	NHRS4206	6
C30	25	NH506+3	7	NHIX7504	3	NHRS4504	4
C35	25	NH704IP	5	NHIX7506	7	NHRS4506	6
C40	25	NH7ED4	29	NHIX8904	3	NHRS4804	4
C45	25	NH7ED6	29	NHIX8906	7	NHRS4806	6
C5	25	NH8+3	12	NHIX9804	3	NHRS504	3
CFL05	25	NH8+6	12	NHIX9806	7	NHRS504+3	3
CFL10	25	NH804	3	NHISS3406	8	NHRS506	6
CFL15	25	NH804+3	3	NHISS4606	8	NHRS506+3	7
CFL20	25	NH804+6	3	NHISS5504	5	NHRS51204	4
CFL30	25	NH806	6	NHISS5506	8	NHRS51206	6
CFL35	25	NH806+3	7	NHISS8704	5	NHRS5404	4
CFL40	25	NH806+6	7	NHISS8706	8	NHRS5406	6
CFL45	25	NHAB	13	NHPB12CB200	17	NHRS5604+6	4
EIU	9	NHAB2	13	NHPB12CB400	18	NHRS5606+6	7
ESE2	29	NHAB3	13	NHPB12SW250	17	NHRS5704	4
ESE2L	29	NHAB4	13	NHPB12SW400	18	NHRS5706	6
ESE4	29	NHAB5	13	NHPB16CB400	18	NHRS61104	4
ESM11	29	NHCBDK11	18	NHPB16SW400	18	NHRS61106	6
ESM13	29	NHCBDK12	18	NHPB6CB200	17	NHRS6304	4
ESM6	29	NHCBDK15	18	NHPB6CB400	18	NHRS6306	6
ESM7	29	NHCEKIT	13	NHPB6SW250	17	NHRS6504+6	4
ESM8	29	NHCEKIT20	13	NHPB6SW400	18	NHRS6604	4
FALNH10SL	8	NHCL	13	NHPB8CB200	17	NHRS6606	6
FALNH1106	8	NHCSB	17	NHPB8CB400	18	NHRS6804+3	4
FALNH15SL	8	NHDIIX1111	8	NHPB8SW250	17	NHRS704IP	5
FALNH706	8	NHDIIX1414	8	NHPB8SW400	18	NHRS71004	4
FALNHIX10SL	8	NHDIIX1919	8	NHPBDL	13	NHRS71006	6
FALNHRS1106	8	NHDIIX88	8	NHPCB1TS	19	NHRS7504	4
FALNHRS706	8	NHDIS1111	8	NHPCB3TS	19	NHRS7506	6
FC	25	NHDIS1414	8	NHPCBAU1	19	NHRS7704+3	4
FWC	25	NHDIS1919	8	NHPCBAU2	19	NHRS7706+3	7
L45	25	NHDIS88	8	NHPCBL	19	NHRS804	3
L60	25	NHDISX1111	8	NHPCBLDX	19	NHRS804+3	3
LFL100	25	NHDISX1414	8	NHRM1104	3	NHRS804+6	3
LFL45	25	NHDISX1919	8	NHRM1104+3	3	NHRS806	6
LFL60	25	NHDISX88	8	NHRM1106	6	NHRS806+3	7
LFL80	25	NHDPDC	13	NHRM1404	3	NHRS806+6	7
M10	25	NHDSSX1111	8	NHRM1406	6	NHRS8404	4
MAT1	9	NHDSSX1414	8	NHRM1904	3	NHRS8406	6
MCBLDX	13	NHDSSX1919	8	NHRM1906	6	NHRS8604+3	4
MDT2	9	NHDSSX88	8	NHRM204/40	3	NHRS8904	4
MESB-20NO (NC)	9	NHDTMS1111	8	NHRM204/63	3	NHRS8906	6
MESB-24NO (NC)	9	NHDTMS1414	8	NHRM206/40	6	NHRS9304	4
MESB-40NO (NC)	9	NHDTMS1919	8	NHRM206/63	6	NHRS9306	6
MESB-63NO (NC)	9	NHDTMS88	8	NHRM504	3	NHRS9804	4
MSTF-111	9	NHEB	13	NHRM504+3	3	NHRS9806	6
MSTF-227	9	NHEP11	13	NHRM506	6	NHRS9SL	4
MSTU6011R	9	NHFFHDK17	17	NHRM804	3	NHRS9SLM	7
MSTU6011S	9	NHFFHDK20	17	NHRM804+3	3	NHRSX5704	3
MSTU6112R	9	NHG13DB	18	NHRM804+6	3	NHRSX5706	7
MSTU8011R	9	NHGAB	17	NHRM806	6	NHRSX6604	3
MSTU8011S	9	NHGPCB1001	19	NHRS1004IP	5	NHRSX6606	7
MSTU8112R	9	NHGPCB1003	19	NHRS10704	4	NHRSX7504	3
MTS8	9	NHGPCB1251	19	NHRS10706	6	NHRSX7506	7

List No	Page No	List No	Page No	List No	Page No	List No	Page No
NHRXS8904	3	NHTN2540	12	NSC40	9	PSBS40/1	15
NHRXS8906	7	NHTN6	12	NSC45	9	PSBS40/2	15
NHRXS9804	3	NHTN2560	12	PDDPL	13	PSBS50/1	15
NHRXS9806	7	NHTN8	12	PSB06-B	14	PSBS6/1	15
NHSN111	12	NHTN2580	12	PSB06-C	14	PSBS6/2	15
NHSN141	12	NHTPD	13	PSB06-D	14	PSDL	13
NHSN161	12	NHTPSF100	21	PSB10-B	14	PSDPL	13
NHSN191	12	NHTPSF20	21	PSB10-C	14	R15	25
NHSN51	12	NHTPSF200	21	PSB10-D	14	R20	25
NHSN81	12	NHTPSF32	21	PSB16-B	14	R30	25
NHSPAK	13	NHTPSF400	21	PSB16-C	14	R5	25
NHSPSF100	21	NHTPSF63	21	PSB16-D	14	REC2	31
NHSPSF20	21	NSB06	9	PSB206-B	14	REC2S	31
NHSPSF32	21	NSB06-B	14	PSB206-C	14	REC3	31
NHSPSF63	21	NSB06-C	14	PSB206-D	14	REC4	31
NHSTM10704	4	NSB06-D	14	PSB20-B	14	WBE/BS	29
NHSTM10706	7	NSB10	9	PSB20-C	14	WBE3	29
NHSTM11604	4	NSB10-B	14	PSB20-D	14	WBE3/EK	29
NHSTM11606	7	NSB10-C	14	PSB210-B	14	WBE3/NK	29
NHSTM12504	4	NSB10-D	14	PSB210-C	14	WBE4	29
NHSTM12506	7	NSB16	9	PSB210-D	14	WBE4/EK	29
NHSTM2404	4	NSB16-B	14	PSB216-B	14	WBE4/NK	29
NHSTM2406	7	NSB16-C	14	PSB216-C	14	WME/FB	29
NHSTM3304	4	NSB16-D	14	PSB216-D	14	WPL	13
NHSTM3306	7	NSB20	9	PSB220-B	14	WRDM100/2	28
NHSTM3604	4	NSB20-B	14	PSB220-C	14	WRDM100/4	28
NHSTM3606	7	NSB20-C	14	PSB220-D	14	WRDM40/2	28
NHSTM3904	4	NSB20-D	14	PSB232-B	14	WRDM40/4	28
NHSTM3906	7	NSB306-B	14	PSB232-C	14	WRDM63/4	28
NHSTM4204	4	NSB306-C	14	PSB232-D	14	WRDS100/2	28
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Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication, specifications and performance data are constantly changing. Latest details can be obtained from Wylex.

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