

XGN74A-12/630-20 SF6 insulated Compact Switchgear



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1 Summary

XGN74A-12/630-20 type RMU is CREAT based on the introduction produce of inflatable ring main unit which according to the actual needs of the end-user, after years of research and development, design and manufacture of leading domestic level with a compact RMU. Which could be widely used in medium / low voltage power distribution stations, windy power, power utility, industrial distribution, high-rise buildings and underground substations various area. Have been improved from the non- extended type technology to extended, enhance busbar of the circuit, Circuit breaker can be isolated from earthed, Loadbreak switch and the fuse-combination of electrical loadbreak switch and other forms feeder, and complete expansion of the left / right extensions and double side extension of the flexible expansion mode, have the many plan for flexible and user choice. Also can be provided based on user demands HV metering unit, make products more rich applications more flexible. Excellent manufacturing processes to make products more compact and smart.

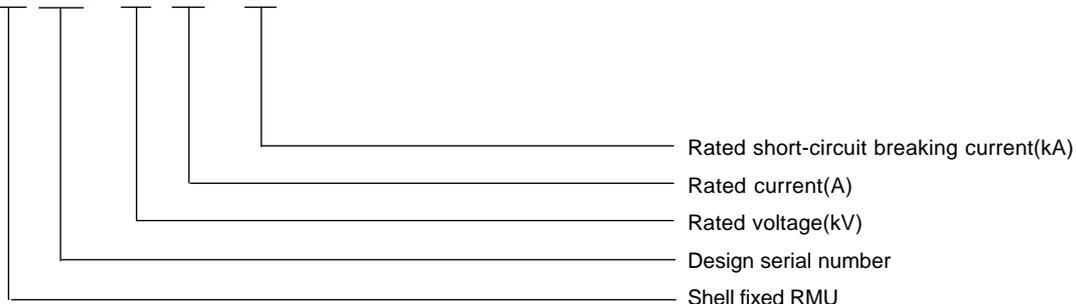


XGN74A-12/630-20 type with SF6 gas as of insulating and switching. The Gas-insulated units be not effected with environmental, Such as humidity, dust and corrosive gases, to ensure safety maximum.

XGN74A-12/630-20 type RMU has two structures of internal switchgear: one is together box structures; other one is extend structure Suit for all distribution system. Gas-insulated ring main unit provides selectivity of a loadbreak switch, vacuum circuit breaker and fuse combination. accord with IEC and the Chinese GB, DL, and other related standards.

2 Serial Introduce

XGN 74A - 12/ 630 - 20



3 Features

- Extensible design
- Smart size and Compact structure design, All disposal have same depth and height
- Asked the interlock operating system, clear display, Operating sequence and switching interlock
- Cable Connection hut size large and horizontal layout that convenience of change phase
- Excellent loadbreak switch fuse unit and HV fuses are earthing on both sides. Fuse replacement safe and convenient, so that ensure safe operation
- Fuse horizontal install, more conducive to cooling. Fuse bushing is sealed as part of the pressure hull, more reliable
- Adopt the temperature compensation densimeter or with density relay more accurate and visual.
- Suit for various connection of cable
- The gas tank made from corrosion-resistant stainless steel (chrome-nickel steel plate), at least 30 years life
- Transformer outlet with vacuum circuit breaker choice, suitable for large-capacity transformer protection
- Provides integrated automation solutions available
- Recycle available
- Accord to IEC60298, affix requires of AA and passed the interior arcing test
- Protection grade up to IP67, can be operate underwater 3m
- GRC or metal shell available, can be used as outdoor ring main unit

4 Environment

GRC or metal shell applied to outdoor environments

- Ambience temperature
 - Up limit: +40°C
 - Low limit: -25°C
- Humidity
 - Relative humidity: Day average less than 95%;
Monthly average less than 95%;
 - Vapor tension: Day average less than 2.2kPa;
Monthly average less than 1.8kPa;
- Altitude: 2000m

XGN74A-12/630-20

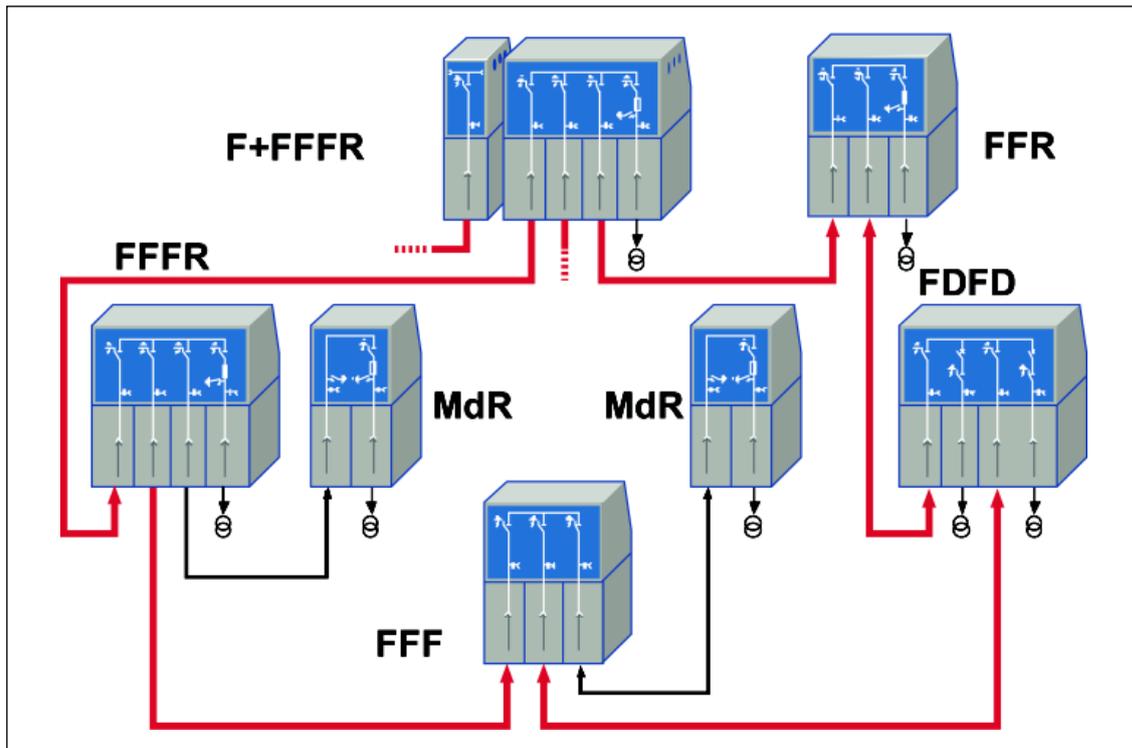
5 Specification

No	Content	Unit	Data		
1	Rated voltage	kV	12	24	
2	Rated frequency	Hz	50	50	
3	1 min power frequency withstand voltage	Phase to ground, Phase to phase	kV	42	65
		Interrupting gap		49	79
4	Lighting impulse withstand voltage	Phase to ground, Phase to phase	kV	75	125
		Interrupting gap		85	145
5	Main circuit resistance	Funit-F unit	$\mu\Omega$	≤ 170	≤ 170
		Funit-R unit		≤ 1200	≤ 1200
6	Auxiliary circuit 1 min power frequency withstand voltage	kV	2	2	
7	Rated SF6 gas pressure (20℃)	MPa	0.03	0.13	
8	Protection grade		IP3X	IP3X	
9	Rate SF6 leakage per year		<0.01%	<0.5%	
10	Rated bushbar current	A	630	630	
11	M,Md,F type rated current	A	630	630	
12	R type rated current	A	200	100	
13	R type transfer current	A	1500/1750/2000	1500	
14	D type rated current	A	400/630	630	
15	Rated short-time withstand current(4s)	kA	20	16 (20)	
16	Rated peak withstand current	kA	50	40 (50)	
17	D rated short circuit breaking current	kA	20	20	
18	Rated short circuit making current	kA	50	50	
19	Test of cable voltage (DC 15 min)	KV	60	96	
20	Mechanical life(load switch & earth switch)	Times	5000/2000	5000/2000	
21	Mechanical life(Circuit breaker)	Times	30000	30000	
22	Switch grade		E2/E1, M1	E2/E1, M1	

6 Applications

XGN74A-12/630-20 RMU As a power equipment of the distribution system, that can be applied to the urban loop, cable sector and factory distribution station, such as:

- Medium / Low Voltage Distribution Station;
- Wind Power Station;
- Power utility;
- Industrial Distribution;
- High-rise building;
- Outdoor HV switch box;
- Compact substation;
- Underground substation.



XGN74A-12/630-20

7 Series Function Unit

There are two types of XGN74A-12/630-20, i.e. extensible and inextensible type, including the following functional modules:

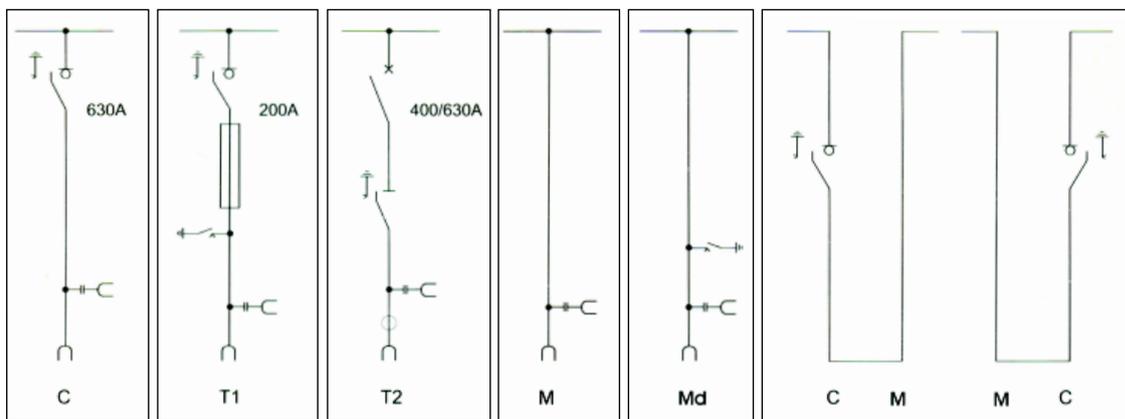
C load disconnection switch feeder scheme;

T1 load disconnection switch fuse combination apparatus Transformer feeder scheme;

T2 vacuum circuit breaker Transformer outlet feeder scheme;

R busbar lifting;

RE bus lifting/earthing switch.



Feeder tank with load break F-Type

Transformer Feeder tank with load break and fuse R-Type

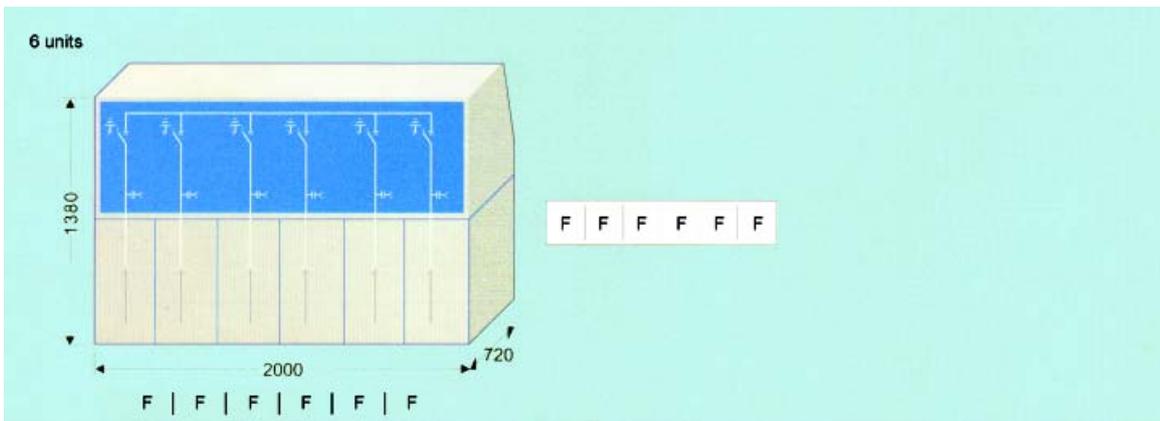
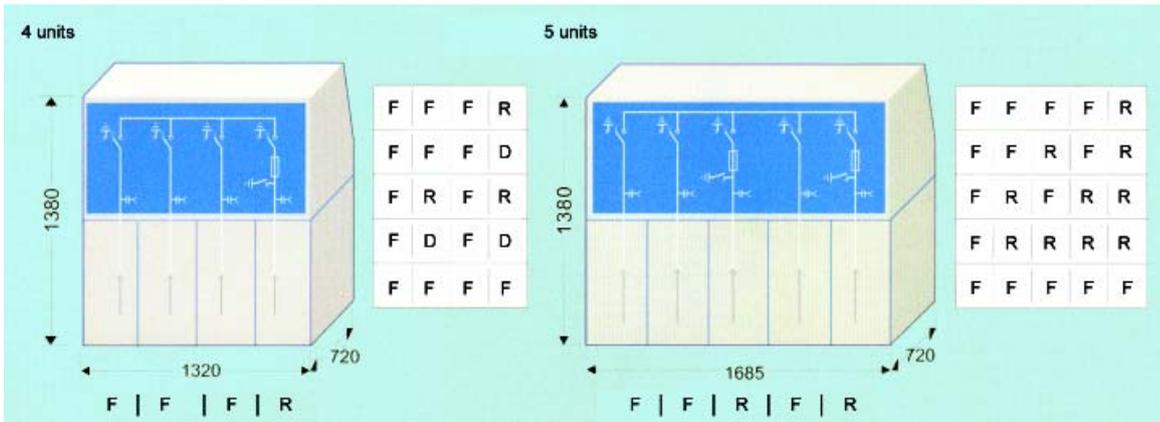
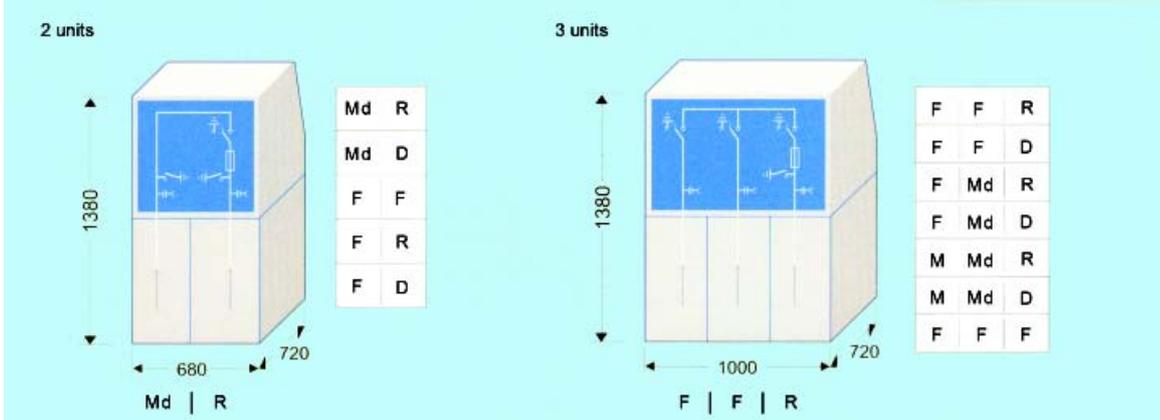
Vacuum circuit breaker outlet transformer feeder tank D-Type

Cable inlet direct

Cable inlet with earthing switch

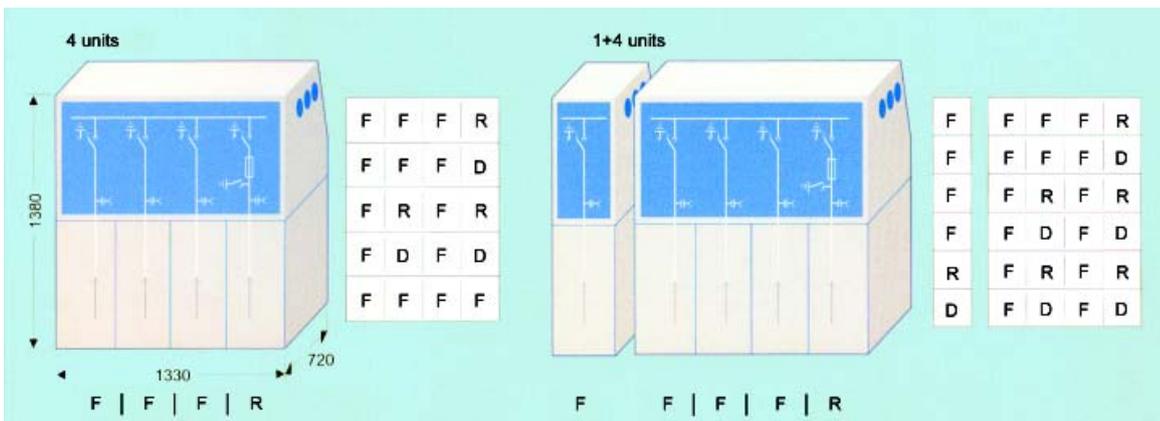
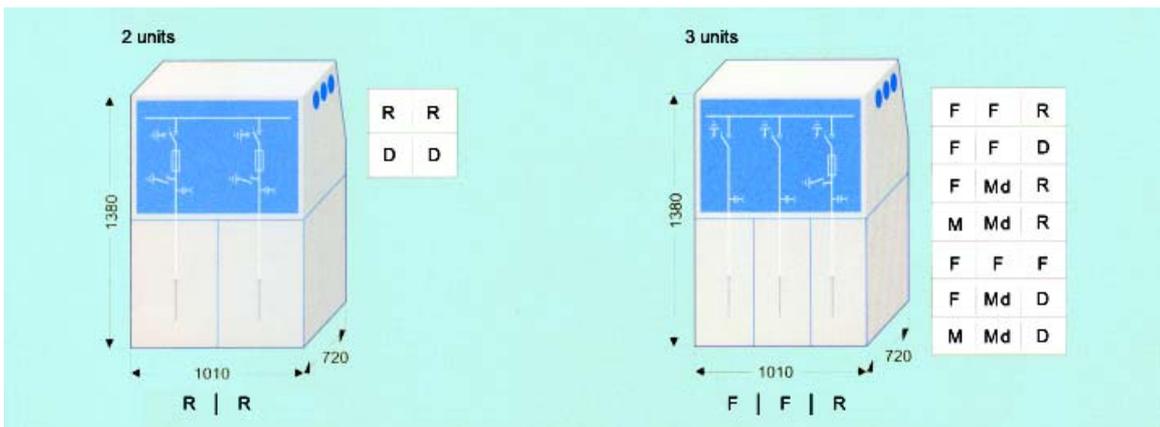
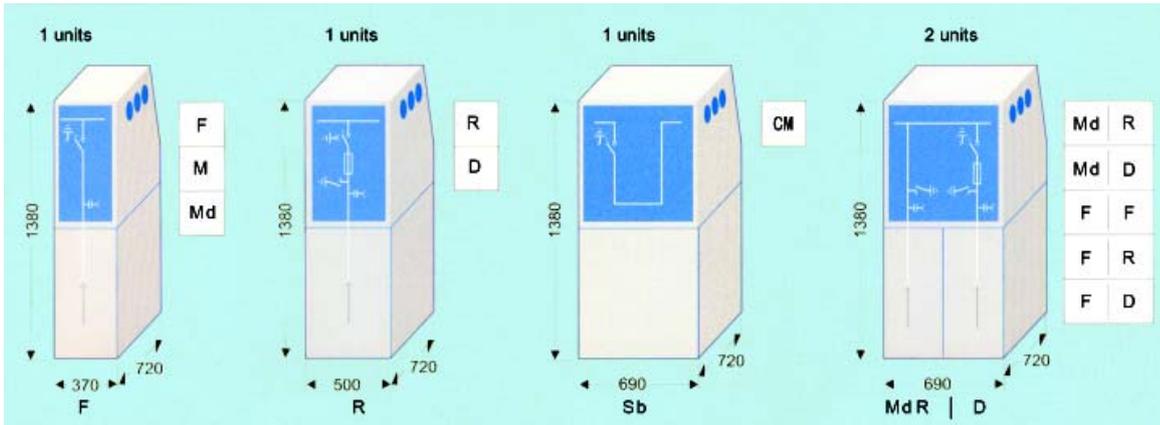
Busbar separate

XGN74A-12/630-20 type RMU provide up to six units in one tank, two of type as:
Extendable



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Non-Extendable



8 Instruction

Considerate operating mode

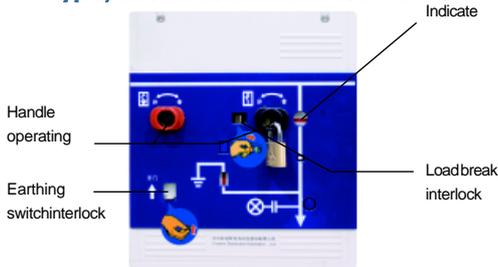
Clear instructions and reliable institutions offer the RMU simple and safe operation:

The mechanical position indicator is connected in simulation of the wiring diagram with the operating components as a whole. Perfect interlocking mechanism helps efficient prevention of misoperation.

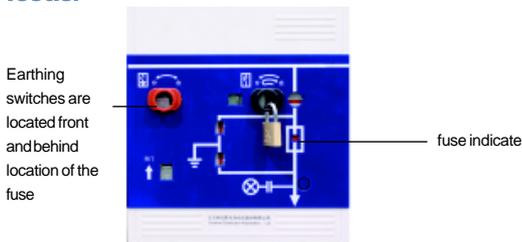
All the operating components can be furnished a padlock.



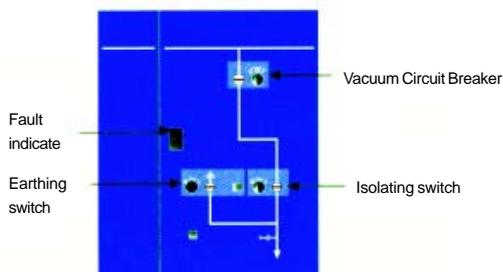
F-Type, the case of loadbreak switch feeder



R-Type, loadbreak switch fuse Combined Electrical Apparatus transformer feeder



D-Type, the vacuum circuit breaker transformer feeder



Operation panel



① Barometer ② Indicator ③ Fault indicator

Continuous asked the interlock operating system



Simple and reliable cable connection

Cable Connection hut size large, different cable connection systems can be selected to complete the connection of cables in a reliable manner. Apply to:

- The complete insulation system
- Metal enclosed system
- Connection system partly insulated

The position of fixing parts for cables can be adjusted. All the plugs of cables are in the same height (inter-phase cables are easy to displace)

Add an arrester to dual-cable connections and cable connections is a standard design for intervals of cable connection



XGN74A-12/630-20

Adopt international advanced level pressure vacuum breaker technology

- Rated operating sequence with two as:
o-0.3s-co-180s-co and o-180s-co-180s-co
- Low contact pressure design, similar to the normal breaking capacity circuit breaker contact pressure of the 1/2-2/3, reducing the operating mechanism of the closing function and related dimensions, the overall mechanical strength of the switch requires the corresponding decrease
- Reached the required of 3000m insulation test.



Safe and easy to replace the fuse

- Both sides of the high-voltage fuses are grounded to ensure safe operations
- The fuse is arranged in a reasonable manner and installed in level, easy to replace
- The casing of the fuse is a part of the entire sealing
- The fuse can be replaced without any tools
- The three-phase will switch off simultaneously on tripping of the fuse



The way of integrated automation solutions.

RTU solution can be achieved with remote communication, remote control

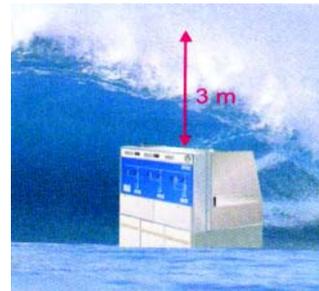


All live parts are enclosed in high-voltage SF6 gas room



Successful passed 3m protective underwater test

Under water 3m deep for 24 hours full load running test, remove the fuse is dry, so that suit for underground substation



Life

In accordance with IEC60694, the "sealed pressure system" during the service life of 30 years without inflation

XGN74A-12/630-20 Adopt F-type connection, easy expansion



Type tests

- According with GB3906,GB11022 standard, Passed in the power quality of industrial electrical equipment and instrumentation and Testing Center by the F, R-type type test cabinet in Nov 2006.()
- According with GB3906, GB11022 standard, Passed in the power quality of industrial electrical equipment and instrumentation and Testing Center by the D-type type test cabinet in Jan 2010.()
- According with GB3906,GB11022 standard, passed Xi'an High Voltage Research Institute in the adoption of supplementary tests such as the internal arcing in Mar 2010