

# AIR CORE REACTORS

INDFARAD Technologies, a company belonging to the MEHER Group, dealing with passive components in the domain of reactive power compensation, offers a proven range of aesthetically designed, reliable medium-voltage air-core reactors for application in reactive power compensation.

Reactors have a very wide spectrum of applications, from power system stabilization at the high end to motor starting at the basic level, as well as in power electronic equipment. However, the most common applications are for limiting switching current surges in capacitor circuits (see over leaf) and for protecting capacitors from the harmful effects of harmonics in electrical networks. For such applications the reactor values range between 0.2 % and 6 %, calculated as the ratio of inductive impedance (X<sub>L</sub>) to capacitive impedance (X<sub>C</sub>) at the nominal system frequency of 50 Hz.

In certain cases of special application such as captive-generation-fed networks or systems with large single phase loads (railway traction) it may be necessary to use tuning factors other than those above. INDFARAD will custom-design reactors in such cases.

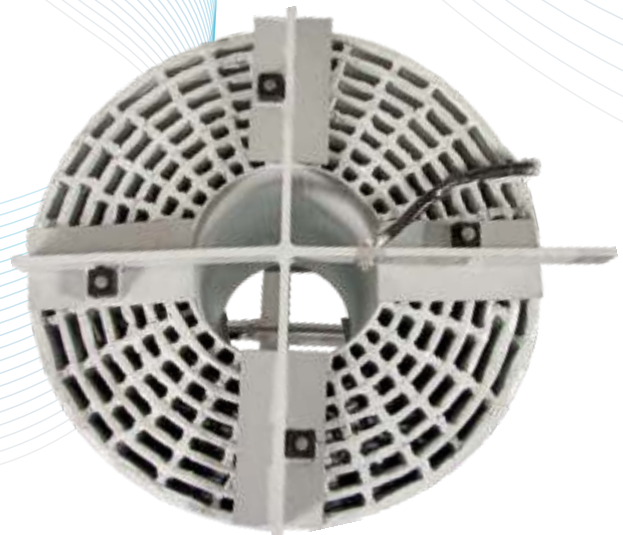
## Indfarad in MV applications

INDFARAD'S experience in the design and production of reactors dates back to 2002 when iron-cored reactors were developed for current limiting and detuning functions for LV applications.

The MEHER Group's deep involvement in the field of MV and HV reactive power compensation on turn-key basis gave a natural impetus to the in-house development of air-cored reactors by INDFARAD. Several deliveries made over the years have stood the test of time, thanks to the exacting demands of discerning users.



Assembled Air Core Reactor



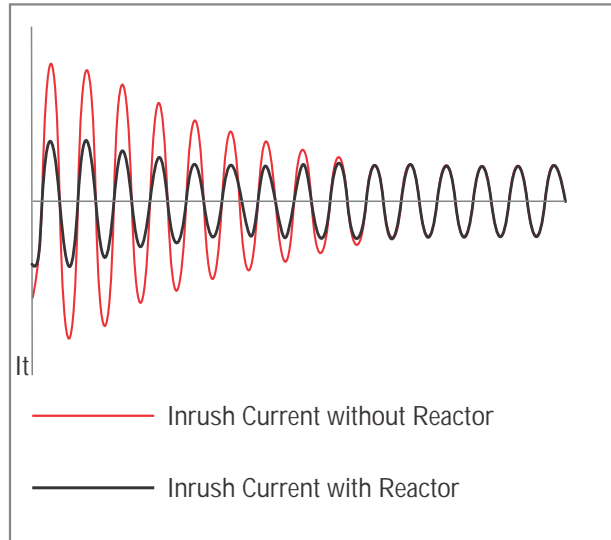
Top view of Air Core Reactor

## THE PRODUCT

The present range of INDFARAD reactors covers 3.3, 6.6 and 11 kV reactors. Windings are made of high electrical grade aluminium or copper to suit the application.

The characteristics which distinguish INDFARAD air-cored reactors are:

- Close tolerance to the design XI value
- Low dissipation loss
- Class F insulation
- Robustness of design
- Flame-retardant construction
- Specific designs for indoor and outdoor installation



Reduction in Switching Current

## Specifications

Rated voltage	3.3/6.6/11 kV, 50 Hz
Highest system voltage	3.6/7.2/12 kV
Rated current	Customer specific
Detuning factor	0.2 % to 6 %
Overvoltage factors	1.05 $U_n$ continuous 1.1 $U_n$ for 8 hrs
Overcurrent factor	1.3 $I_n$ continuous

Insulation Class	F
Impulse withstand	40 kV for 3.3 kV reactors 60 kV for 6.6 kV reactors 75 kV for 11 kV reactors
Service temperature	-10°C to + 50°C
Applicable standards	IS 5553 – 4 & 5: 1989 IEC 60076 – 6 : 2007

## IMPORTANT DELIVERIES

INDFARAD air core reactors have been delivered for use in a wide range of industrial environment. Amongst the reputed clients INDFARAD has been privileged to have served are Chettinad Cements, Orient Cements, Praxair, Larsen and Toubro, Reliance DKAC and GE (for Zubair, Iraq). A detailed reference list is available on request.



Three single phase reactors assembled in a cubicle for three phase application

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